

MEMC

VIITH

MEDITERRANEAN EMERGENCY MEDICINE CONGRESS

8-11 SEPTEMBER 2013 - MARSEILLE, FRANCE

www.memc2013.org



BOOK OF ABSTRACTS

The congress will be CME accredited
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CO-ORGANISING SOCIETIES



(EUSEM)

THE EUROPEAN SOCIETY FOR EMERGENCY MEDICINE is a non-profit making scientific organisation with an aim to promote and foster the concept, the philosophy and the art of Emergency Medicine throughout Europe. The main objective of EuSEM is to help and support European countries to implement the speciality of Emergency Medicine. Born as a society of individuals in 1994 from a multidisciplinary group of experts in Emergency Medicine, since 2005 EuSEM also incorporates a Federation which currently includes 27 European national societies of Emergency Medicine.

Our mission is to:

Promote and develop research, education, practice and standards of the speciality of Emergency Medicine throughout Europe.

Our goals are:

to foster and encourage education, training and research in Emergency Medicine in Europe
to promote and facilitate the dissemination of information on Emergency Medicine, through congresses, courses, research and publications to encourage the development of uniform information systems and data banks in Emergency Medicine in Europe
to encourage the formation and the cooperation between national associations for Emergency Medicine to promote international collaboration in the field of Emergency Medicine

Visit the EuSEM website: <http://www.eusem.org/>



(AAEM)

THE AMERICAN ACADEMY OF EMERGENCY MEDICINE is a non-profit democratic organization of 7,000 members.

The Academy supports the establishment and recognition of emergency medicine internationally as an independent speciality and is committed to its role in the advancement of emergency medicine worldwide.

In collaboration with EuSEM, AAEM will be co-sponsoring their seventh MEMC promoting the speciality of emergency medicine and offering a wonderful opportunity for academic and scientific exchange. AAEM is also partnering internationally to offer academic and scientific exchange across the world.

AAEM entered in to a 10 year agreement with the Sociedad Argentina de Emergencias (SAE) in offering a jointly sponsored biennial meeting of the Inter-American Emergency Medicine Congress (IAEMC). In 2012, AAEM and the Korean Society of Emergency Medicine (KSEM) held the first Pan-Pacific Emergency Medicine Congress (PEMC) in Seoul, South Korea.

To learn more about AAEM's mission, please see <http://www.aaem.org/about-aaem/mission-statement>.



(SFMU)

THE FRENCH SOCIETY FOR EMERGENCY MEDICINE aims at promoting emergency medicine through education and research for trainees and professionals.

The society organises scientific conferences and regularly elaborates professional and scientific recommendations and guidelines to improve and regulate the medical practice in emergency medicine. It also contributes in editing books and journals to help spread the scientific knowledge.

The French Society for Emergency Medicine promotes and support research by giving grants and conducting multicentric studies. It also takes part in international events by endorsing scientific activities and is part of the International Federation for Emergency Medicine (IFEM) and work closely with the European Society for Emergency Medicine (EuSEM) in order to harmonize European practices and help promote emergency medicine as a speciality.

Visit the SFMU website : www.sfmou.org

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PRESIDENTS' MESSAGE

Dear Delegates,

*It is with great pleasure that we welcome you to the **Seventh Mediterranean Emergency Medicine Congress (MEMC VII)** in the city of Marseille, France. This biennial congress represents a successful collaboration between the **American Academy of Emergency Medicine (AAEM)**, the **European Society for Emergency Medicine (EuSEM)**, and this year, the **French Society for Emergency Medicine (SFMU)**.*

You will recall the remarkable success of our prior congresses in Stresa, Italy; Sitges, Spain; Nice, France; Sorrento, Italy; Valencia, Spain and Kos, Greece. The number of attendees and represented nations has grown. We anticipate that nearly 2,000 emergency medicine specialists representing more than 75 countries will converge on Marseille.

We have always targeted the Mediterranean basin. This year we have chosen France and the city of Marseille, the largest and oldest French city on the Mediterranean coast, founded by Greek merchants 2600 years ago. Through the ages, Marseille has always been an important harbor for traders and travellers. With the opening of the Suez Canal, Marseille became one of the main harbors from which ships departed to all the continents.

*This year's main theme is '**Simulation in Emergency Medicine**'. A range of activities and sessions have been organised to explore, experience, and discuss various applications of simulation, its implementation and its evaluation in our professional domain. The simulation activities include:*

- * Keynote lecture on Simulation (Prof Kent Denmark, Loma Linda University, USA)*
- * An international team-based simulation competition*
- * Two pre-conference courses: Scenario-based Simulation facilitator workshop and Simulation centre design and operations workshop*
- * Industry workshops*
- * Industry symposium*
- * Expert panel sessions*
- * Themed presentations*
- * Oral presentations*
- * Poster presentations*
- * A range of companies presenting their latest simulation training equipment*

In 2013, Marseille is the European Capital of Culture. In addition to its vast history, Marseille is renowned for its gastronomy, its beaches and its wild mountainous coastal area of outstanding natural beauty, the Calanques. The islands of the Frioul archipelago, including the Château d'If, are located in front of the Old Harbour, a central point for boat tours.

This collaboration between AAEM, EuSEM and SFMU promotes the specialty of Emergency Medicine and offers a wonderful opportunity for academic and scientific exchange. We have invited world-class speakers, researchers, and educators who will give outstanding lectures, discuss clinical cases, and moderate several hundred abstract and poster presentations. We invite you to contribute to the success of the congress by sharing research findings and by ensuring that you attend and participate in the wide range of scientific sessions and social events.

Regards,

Abdelouahab Bellou
EuSEM President



William T. Durkin, Jr.
AAEM President

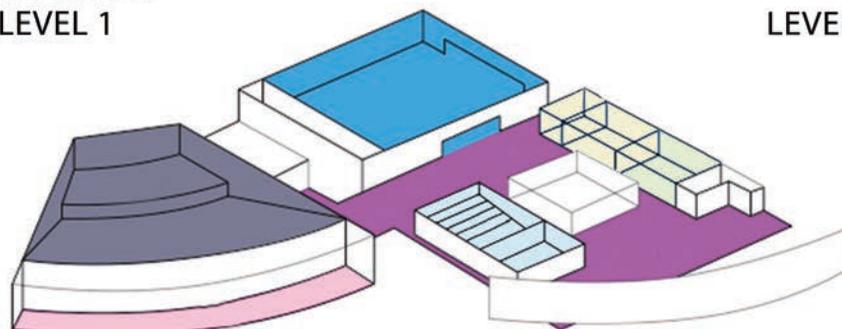


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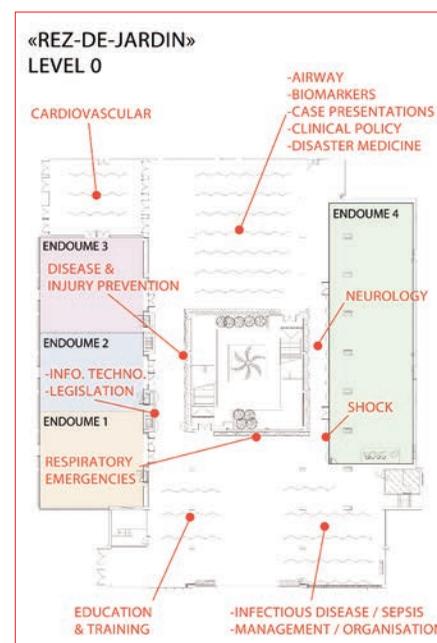
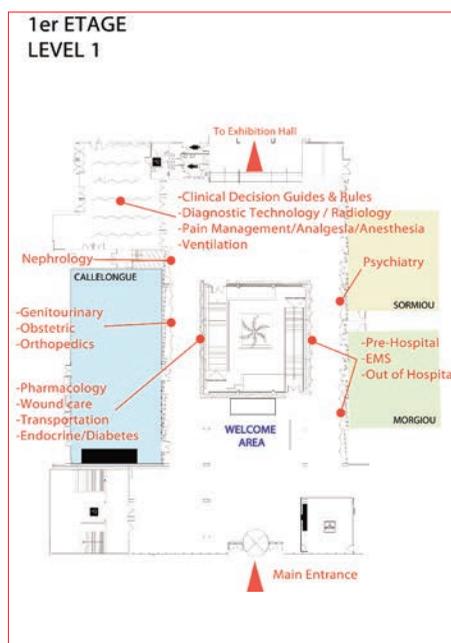
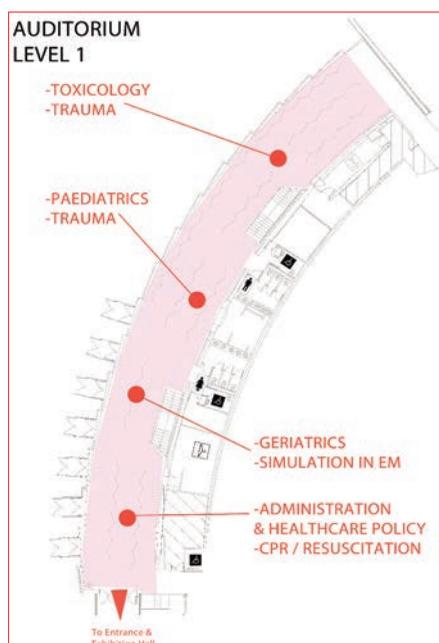
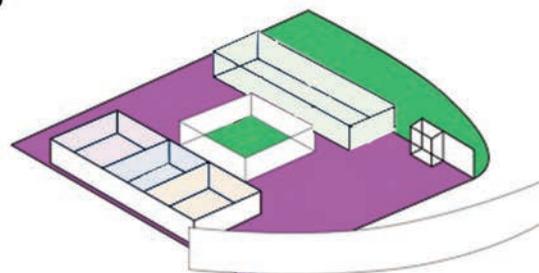


LOCATION MAP OF THE POSTERS

1er ETAGE LEVEL 1



«REZ-DE-JARDIN» LEVEL 0



"Front of the Auditorium" poster area

- Administration/Health Care Policy (Po-001-Po-019)
- CPR/Resuscitation (Po-248 to Po-270)
- Geriatrics (Po-399 to Po-406)
- Paediatrics (Po-570 to Po-597)
- Simulation in EM (Po-655 to Po-662)
- Toxicology (Po-663 to Po-718)
- Trauma (Po-720 to Po-765)

"Hall Accueil Expo" poster area

- Clinical Decision Guides/Rules (Po-211 to Po-237)
- Diagnostic Technology/Radiology (Po-273 to Po-301)
- Endocrine/Diabetes (Po-390 to Po-394)
- Genitourinary (Po-395 to Po-398)
- Nephrology (Po-505 to Po-508)
- Obstetric Emergencies (Po-539 to Po-541)
- Orthopedics (Po-542 to Po-546)
- Pain Management/Analgesia/Anaesthesia (Po-547 to Po-569)
- Pharmacology (Po-598 to Po-602)
- Prehospital/EMS/Out of Hospital (Po-603 to Po-628)
- Psychiatry (Po-630 to Po-635)

- Transportation (Po-719)
- Ventilation/Invasive and Non-invasive (Po-766 to Po-769)
- Wound Care/Burn Care (Po-771)

"Rez de Jardin" poster area

- Airway (Po-020 to Po-026)
- Biomarkers (Po-027 to Po-038)
- Cardiovascular (Po-039 to Po-088)
- Case Presentations (Po-089 to Po-210)
- Clinical Policy (Po-238 to Po-247)
- Disaster Medicine (Po-302 to Po-327)
- Disease/Injury Prevention (Po-328 to Po-340)
- Education and Training (Po-341 to Po-389)
- Infectious Disease/Sepsis (Po-407 to Po-441)
- Information Technology (Po-442 to Po-445)
- Legislation (Po-446 to Po-447)
- Management/ED Organization (Po-448 to Po-504)
- Neurology (Po-509 to Po-538)
- Respiratory Emergencies (Po-637 to Po-648)
- Shock (Po-649 to Po-654)

In each area, when it is possible, poster panels are in consecutive order.

POSTERS

Posters: The Congress will provide poster boards. Posters should be prepared directly on one sheet if possible, or at least on a few A1 or A2 sheets. Be warned that posters made by taping together A4 or quarto sheets tend to look amateurish and may not do your presentation justice. The lettering should be large enough to be read by someone standing 2m back from the poster and the following text sizes are suggested:

- Title: 2-3 cm;
- Authors' names and affiliations: 2cm;
- Section headings (ABSTRACT, RESULTS, etc.): 2 cm.

Posters will be displayed in their physical form. There will not be electronic posters displayed on computers or plasma screens.

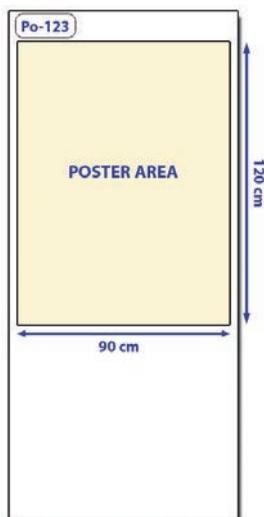
Posters will be located in several areas within the Convention Center. Each poster is up for the whole congress.

Your poster will have to be up before 14:00 on Sunday. We ask that you take your poster down by 13:00 on Wednesday.

Poster size:

Your poster should not exceed 120 cm/47 inches in height and 90 cm/35 inches in width.

TO ALL SUBMITTERS: POSTER DIMENSIONS ARE GREATER IN HEIGHT THAN IN WIDTH. PLEASE PREPARE YOUR POSTER ACCORDINGLY.



Poster presentation :

Poster presenters will be requested to be in front of their poster, at least during one of the coffee breaks during the congress depending on the topic:

Topic	References	Authors to be present during coffee break
Administration/Health Care Policy	Po-001 to Po-019	Sunday PM
Airway	Po-020 to Po-026	Tuesday AM
Biomarkers	Po-027 to Po-038	Wednesday AM
Cardiovascular	Po-039 to Po-088	Tuesday AM
Case Presentations	Po-089 to Po-210	One of the coffee breaks
Clinical Decision Guides/Rules	Po-211 to Po-237	Monday AM
Clinical Policy	Po-238 to Po-247	Tuesday AM
CPR/Resuscitation	Po-248 to Po-270	Sunday PM
Diagnostic Technology/Radiology	Po-273 to Po-301	Wednesday AM
Disaster Medicine	Po-302 to Po-327	Monday PM
Disease/Injury Prevention	Po-328 to Po-340	Monday PM
Education and Training	Po-341 to Po-389	Monday PM
Endocrine/Diabetes	Po-390 to Po-394	Wednesday AM
Genitourinary	Po-395 to Po-398	Wednesday AM
Geriatrics	Po-399 to Po-406	Sunday PM
Infectious Disease/Sepsis	Po-407 to Po-441	Wednesday AM
Information Technology	Po-442 to Po-445	Wednesday AM
Legislation	Po-446 to Po-447	Tuesday AM
Management/ED Organization	Po-448 to Po-504	Tuesday AM
Nephrology	Po-505 to Po-508	Monday AM
Neurology	Po-509 to Po-538	Monday PM
Obstetric Emergencies	Po-539 to Po-541	Monday AM
Orthopedics	Po-542 to Po-546	Monday AM
Pain Management/Analgesia/Anaesthesia	Po-547 to Po-569	Monday AM
Paediatrics	Po-570 to Po-597	Sunday PM
Pharmacology	Po-598 to Po-602	Tuesday PM
Prehospital/EMS/Out of Hospital	Po-603 to Po-628	Monday AM
Psychiatry	Po-630 to Po-635	Monday AM
Respiratory Emergencies	Po-637 to Po-648	Tuesday AM
Shock	Po-649 to Po-654	Monday PM
Simulation in EM	Po-655 to Po-662	Sunday PM
Toxicology	Po-663 to Po-718	Tuesday PM
Transportation	Po-719	Sunday PM
Trauma	Po-720 to Po-765	Tuesday PM
Ventilation/Invasive and Non-invasive	Po-766 to Po-769	Sunday PM
Wound Care/Burn Care	Po-771	Sunday PM

Guidelines for authors:

Supplies for mounting your poster (pins) can be found at the "Posters" welcome desk at the Conference, as well as the master plan of the poster area. Please be sure your poster is up before 14:00 on Sunday. We ask that you take your poster down by 13:00 on Wednesday. If you do not, your poster will be removed and placed to the side of the room.

Posters not claimed by the end of the Congress will be discarded.

ORAL PRESENTATIONS

Or-001

Airway 1

INCIDENCE OF HYPOXEMIA DURING RAPID SEQUENCE INTUBATION OF HEAD INJURED PATIENTS IN THE EMERGENCY DEPARTMENT

John Sakles (1), Mari Cosentino (1), Jarrod Mosier (2)

1. Emergency Medicine, University of Arizona College of Medicine, Tucson, United States

2. Emergency Medicine, University of Arizona, Tucson, United States

Corresponding author: sakles@aemrc.arizona.edu

Keywords: Tracheal intubation, Head injury, Complication

Background: Previous literature has demonstrated that a single event of hypoxemia in a head injured patient substantially increases morbidity. During intubation in the emergency department (ED), patients with head injuries are at great risk of oxygen desaturation.

Objectives: To determine the incidence of hypoxemia during rapid sequence intubation (RSI) of head injured patients in the emergency department setting.

Methods: Data was collected prospectively through a continuous quality improvement (CQI) database on all patients undergoing RSI in an academic emergency department over a 5 year period (2008-2012). Following each intubation, the operator completed a standardized data form, including the patient's demographic information, trauma diagnosis, highest and lowest pulse oximetry reading during the intubation, and number of intubation attempts. Patients who sustained blunt or penetrating trauma with the following written diagnoses were included in the study: closed head injury, traumatic brain injury, intracranial hemorrhage, subdural hematoma, subarachnoid hemorrhage, epidural hematoma, gunshot wound to the head. This subset of patients was categorized into 3 groups based on percent decrease in saturation during intubation: mild (10-19%), moderate (20-29%), and severe (>29%). Within these groups, we determined how many intubations were completed on the first attempt.

Results: There were 435 trauma patients with a diagnosis of head injury that underwent RSI in the five year period. Of these, 350 had oxygen saturations documented. 320 of these cases were a result of blunt trauma, while 30 were a result of penetrating trauma. 20% of patients (n=69) were found to have experienced desaturation of 10% or more. 8.6% had mild desaturation, 4.9% had moderate desaturation, and 6.3% had severe desaturation. 30 out of these 69 patients were intubated on the first attempt.

Conclusion: In this study we found an alarmingly high rate of hypoxemic events during the intubation of head injured patients. Steps to avoid hypoxemia in this patient population are warranted, such as adequate pre-oxygenation prior to intubation, apneic oxygenation during intubation, and the avoidance of prolonged intubation attempts.

Or-002

Airway 1

CRITICAL INCIDENTS DURING AIRWAY MANAGEMENT IN PREHOSPITAL EMERGENCY MEDICINE - AN ANALYSIS OF THE DATABASE "CIRS-NOTFALLMEDIZIN" IN GERMANY

Thomas Fleischmann (1), Christian Hohenstein (2), Peter Rupp (3), Kerstin Schultheis (4), Johannes Winning (5), Ronald Wirthwein (2)

1. Emergency Medicine, Salzgitter Hospital, Salzgitter, Germany

2. Emergency Medicine, University Hospital Jena, Jena, Germany

3. Emergency Medicine, Salem Hospital, Bern, Switzerland

4. Internal Medicine, University Hospital Gießen, Gießen, Germany

5. Dpt. of Anaesthesiology, university hospital jena, Jena, Germany

Corresponding author: christian.hohenstein@med.uni-jena.de

Keywords: Critical Incident Reporting, Airway Management, Error Prevention

Background: Many patients are victims of disastrous incidents during medical intervention. It is one of the physicians obligations to identify these incidents, and consecutively develop preventive strategies in order to prevent future events. Airwaymanagement in prehospital emergency medicine is of particular interest, since both categories frequently show very dynamic action. Incidents in this particular area can lead to serious harm, at the same time it has never been analyzed what kind of incidents might harm patients during prehospital airwaymanagemet.

Methods: The german website www.cirs-notfallmedizin.de ist offers anonymous reporting of critical incidents in prehospital emergency medicine. We screened all incidents between 2005-2012 to identify those who deal with airwaymanagement. Four experts in this area analyzed the incidents and performed a root cause analysis.

Results: The database contained 845 reports. The authors considered 144 reports as airwaymanagement related and identified 10 root causes: Indication for intubation, no intubation performed (n=8), no indication for intubation, intubation attempt performed (n=7), wrong medication (n=25), insufficient practical skills (n=46), no use of alternative airwaymanagement (n=7), insufficient handling before or after intubation (n=27), defect equipment (n=31), other (n=18), factors that cannot be influenced (n=12).

Conclusions: The incidents, that are reported via the website www.cirs-notfallmedizin.de and that occur during airwaymanagement in prehospital emergency medicine, can be prevented in most of the cases. Practical airwaymanagement skills, use of capnography, alternative airwaymanagement equipment stored together with intubation equipment, are the most important preventive strategies as far as we reckon.

Or-003

Airway 1

THE DIFFICULT AIRWAY IN THE ED: COMPARISON OF VIDEO LARYNGOSCOPY TO DIRECT LARYNGOSCOPY

John Sakles (1), Asad Patanwala (2), John Dicken (3), Jarrod Mosier (4), Ivo Abraham (2), Mari Cosentino (1)

1. Emergency Medicine, University of Arizona College of Medicine, Tucson, United States
2. College of Pharmacy, University of Arizona, Tucson, United States
3. College of Medicine, University of Arizona, Tucson, United States
4. Emergency Medicine, University of Arizona, Tucson, United States

Corresponding author: sakles@aemrc.arizona.edu

Keywords: Difficult Airway, Intubation, Video Laryngoscopy

Objective: To compare the efficacy of video laryngoscopy (VL) to direct laryngoscopy (DL) to for intubation of emergency department (ED) patients with difficult airways. **Methods:** Between 2007 and 2012, emergency physicians recorded all consecutive intubations performed in the emergency department. The database included patient demographics and detailed information about each intubation such as number of attempts, devices used and difficult airway parameters (DAPs). In this study, adult patients with one or more DAPs who underwent rapid sequence intubation (RSI) were included. DAPs included blood in the airway, vomit in the airway, short neck, cervical spine collar, small mandible, obesity, airway edema, facial trauma, and large tongue. The videolaryngoscopes used were the C-MAC and GlideScope. First attempt intubation success was compared between the VL and DL groups stratified by the number of DAPs. The Chi-squared test was used to make these comparisons. A multivariate logistic regression analysis was conducted to adjust for potential confounders.

Results: A total of 1124 intubations were included in the final cohort. The mean age of patients was 45 and 47 years in the VL and DL groups, respectively ($p=0.165$). The proportion of males was 68% in both groups. First attempt success by the number of DAPs was as follows in the VL and DL groups, respectively: one DAP (86% vs. 71%, respectively; $p<0.001$); two DAPs (84% vs. 66%, respectively; $p=0.001$); three DAPs (77% vs. 64%, respectively; $p=0.048$); four or more DAPs (60% vs. 32%, respectively; $p=0.002$). After adjusting for potential confounders VL was associated with a higher odds of first pass success for patients with one (OR 3.2, 95% CI 1.9-5.2, $p<0.001$), two (OR 3.1, 95% CI 1.6-5.9, $p=0.001$), three (OR 2.0, 95% CI 1.0-3.9, $p=0.040$) and four or more DAPs (OR 4.4, 95% CI 1.8-11.0, $p=0.001$).

Conclusions: In adult patients with difficult airway characteristics who undergo RSI in the emergency department, VL is associated with a greater first pass success than DL.

Or-004

Airway 1

RAPID SEQUENCE INTUBATION COMPARED TO SEDATION ONLY FOR OUT-OF-OR INTUBATIONS USING VIDEO LARYNGOSCOPY

River Bouska (1), John Sakles (1), Uwe Stolz (1), Jarrod Mosier (1,2)

1. Emergency Medicine, University of Arizona, Tucson, United States
2. Critical Care Medicine, University of Arizona, Tucson, United States

Corresponding author: jmosier@aemrc.arizona.edu

Keywords: Rapid Sequence Intubation, Video laryngoscopy, Intubation

Background: Rapid Sequence Intubation (RSI) has been the preferred technique for out-of-OR intubations due to the improved grade of glottic view and overall intubating conditions when using direct laryngoscopy. Given the design of video laryngoscopes (VL), the benefit of RSI may not be as significant, as the view of the glottic inlet is from a camera positioned on the distal undersurface of the blade. To date, no literature exists evaluating the effect of RSI with video laryngoscopy.

Objective: To determine the effect of RSI vs. sedation only/no medications (noRSI) on the success rate of intubation of patients intubated in the emergency department (ED) and intensive care unit (ICU).

Methods: All intubations performed in the ED or ICU over a 12-month period at an academic medical center with a Level 1 trauma center and training programs in Emergency Medicine, Pulmonary, and Critical Care Medicine were included. The intubator completed a standardized data form, which included patient demographics and detailed patient and procedure related information pertinent to the intubation such as number and outcome of each attempt, devices used, medications used and difficult airway predictors (DAPs). All adult patients intubated with VL (CMAC or GlideScope) were included in this analysis. The primary outcome was first attempt success. A multivariate logistic regression analysis was performed to adjust for potential confounders.

Results: 443 intubations were performed in the ED and ICU using VL during the study period. 238 (54%) were performed in the ED, 205 (46%) were performed in the ICU ($p=ns$). 360 (81%) were intubated with RSI while 83 (19%) were intubated without a paralytic. 200 patients (45%) were intubated with a GlideScope, 243 (55%) with a CMAC ($p=ns$). There was no significant overall difference in first attempt success rate between devices (CMAC 78%, GlideScope 78%, $p=ns$). There was no significant difference between RSI and noRSI groups in terms of age (RSI mean 55, IQR 45-66, noRSI mean 55, IQR 41-71, $p=ns$). 202 (85%) in the ED were intubated with RSI, compared to 158 (77%) of patients intubated in the ICU ($p=0.02$). The noRSI group averaged more DAPs (mean 0.92 95%CI 0.61-1.24) than the RSI group (mean 0.57 95%CI 0.46-0.68)($p=0.01$). RSI had a

higher first attempt success rate than noRSI (82% vs. 63%)($p=0.<001$). A multivariate regression model controlling for difficult airway predictors and level of training of the intubator shows improved odds of success with RSI vs. noRSI (adjusted OR 3.01 95%CI 1.71-5.23).

Conclusions: Our data for out-of-OR intubations suggest that RSI has improved odds of successful first attempt intubation compared to noRSI, even when controlled for difficult airway predictors and level of training of the intubator.

Or-005

Airway 1

DETERMINATION OF ACCURACY IN EMERGENCY DEPARTMENT DOSING FOR RAPID SEQUENCE INTUBATION

Heidi Ashbaugh (1), Leslie Simon (1), Colleen Kalynych (1), Steven Chadwick (1), Carmen Smotherman (1), Dale Kraemer (1)

1. Emergency Medicine, University of Florida COM Jacksonville, Jacksonville, United States

Corresponding author: Colleen.Kalynych@jax.ufl.edu

Keywords: RSI Dosing, Weight Based Dosing RSI, Physician accuracy RSI Dosing in ED

Study Objectives: Rapid Sequence Intubations (RSIs), which are dosed based on weight, occur in emergency departments (ED) every day. Since patients often cannot be weighed in the ED prior to RSI, medications are administered according to presumed or guessed weights by emergency physicians. Studies have shown that underdosing patients may cause difficulties with intubation, prolong the intubation or require redosing of medications. This retrospective study aimed to determine how often physicians underdose RSIs and factors that may be associated with failed attempts at intubation.

Methods: As part of the department's quality improvement (QI) project to monitor intubation cases, EM physicians were asked to complete QI forms to review intubation cases. After IRB approval, we utilized this database to identify patients >18 yrs of age intubated in the ED and subsequently admitted into the hospital between January 1, 2012 and August 30, 2012. Through the QI forms and completion of a retrospective chart review, 195 patients' data were collected to include RSI drug utilized, dose of medications, estimated weight by MD, number of attempts at intubation and level of training of physician intubating, reason for intubation (medical vs. trauma), recorded ICU height and weight, and whether the MD felt the patient presented as a difficult airway. We compared the dosage of medications to set guidelines as defined as: succinylcholine 1.5mg/kg (Actual Body Weight) and rocuronium 1mg/kg (Ideal Body Weight calculated as [men]= $50 + 2.3$ (Height (inches)-60) and [women]= $45.5 + 2.3$ (Height (inches)-60). Twenty-six patients' data were incomplete and 2 were

duplicates, 13 did not receive paralytics, leaving 154 for analysis. Patients underdosed by >10% were compared to those not and factors associated with failure attempts between groups were assessed: age, gender, suspected difficult airway by MD, year of training or attending. The differences between groups were assessed using Chi-square or Fisher's Exact tests for categorical variables, and using non-parametric Wilcoxon Rank Sum tests for continuous variables. The significance level was .05.

Results: Of the 154 patients, 65 (42%) received rocuronium and 89 (58%) received succinylcholine. Twenty-nine patients were underdosed vs. 125 who were not; 28 (97%) received succinylcholine vs. 1 (3%) received rocuronium ($p<.0001$). Although not statistically significant, only 14% of patients who were underdosed had a first attempt failure by the provider vs. 8% who were not underdosed ($p=.286$). Age of the patient, gender, race, year of training or attending, and prediction of a difficult airway by the physician or reason for intubation (medical vs. trauma) were not significantly associated with first attempt intubation failures.

Conclusion: This study suggests that we significantly underdose the paralytic succinylcholine in the ED, which could lead to increased difficulty in intubation, increased number of intubation attempts and possible complications. While it is often impractical to weigh patients prior to intubation, we hope with education we can improve dosing and improve outcome of these critically ill patients. Of note, rocuronium was almost never underdosed, this can likely be attributed to the physician dosing on guessed actual weight, not ideal body weight. In our patient population, this will almost always lead to giving more paralytic than needed.

Or-006

Airway 1

ARE ADULT PATIENTS WHO NEEDED ENDOTRACHEAL INTUBATION IN THE PRE-HOSPITAL SETTING ADEQUATELY VENTILATED AND OXYGENATED DURING THEIR TRANSPORT TO THE EMERGENCY DEPARTMENT?

Marie Muyldermans (1), Tom Schmitz (1), Inge Roggen (1), Ives Hubloue (1)

1. Research Group on Emergency and Disaster Medicine, Vrije Universiteit Brussel, Brussel, Belgium

Corresponding author: inge.roggen@uzbrussel.be

Keywords: ventilation, intubation, prehospital

Background: Ensuring quality in pre-hospital airway management and ventilation is challenging because the out-of-hospital setting is an unpredictable environment. In literature, controlled studies in pre-hospital airway management and ventilation are scarce. This study was carried out to evaluate the adequacy of ventilation and

oxygenation of pre-hospital intubated patients during transport to the emergency department (ED).

Methods: With a retrospective cohort study, we analyzed all medical files of all patients who needed endotracheal intubation in the pre-hospital setting and who were ventilated and oxygenated during transport to the ED of a university teaching hospital between 1/1/2010 and 31/10/2012. Patients under the age of 18 were excluded.

Results: Files of 137 consecutive patients were analyzed. The most important reason for intubation was found to be a Glasgow Coma Scale below 8 (n=93). The most common reason of admission to the ED was resuscitation (n=61), followed by cerebral pathologies (n=34). In 47 patients (34%), imposed tidal volume, frequency, FiO2 and PEEP were tracked in the patient's file. In 17 of these 47 patients these parameters were adjusted to the patient needs. In 52 out of 73 patients an FiO2 of 100% was administered during transport while they had an O2 saturation of 95% and up. After arrival at the ED, arterial blood gases (ABG) were drawn in 69% of patients (95 out of 137). The median door-to-ABG time was 48 minutes (range 2-221 minutes). The results of the 27 ABG drawn within 30 minutes after arrival at the ED revealed a respiratory acidosis with a mean pH of 7.26 ± 0.16 and a mean pCO2 of 47 ± 12 mmHg. The average pO2 in those patients was 255 ± 119 mmHg. End tidal CO2 (EtCO2) was monitored in 22 patients (16%).

Conclusions: This study revealed not only that patients who needed endotracheal intubation in the pre-hospital setting were not adequately ventilated and oxygenated during subsequent transport to the ED, but also that only in a small share of the patients, the impact of the ventilation was adequately monitored. Ventilation and oxygenation must be adjusted to the patient's individual needs and must be guided by close measurements of O2 saturation and EtCO2. This policy has to be continued after immediate arrival at the ED with adjunctive ABG measurements.

Or-007

Airway 1

FAILED FIRST ATTEMPT INTUBATIONS IN THE EMERGENCY DEPARTMENT (ED): EFFICACY OF VIDEO LARYNGOSCOPY (VL) AS RESCUE DEVICE

John Sakles (1), Parisa Javedani (2), Asad Patanwala (3), Jarrod Mosier (2), John Dicken (4)

1. *Emergency Medicine, University of Arizona College of Medicine, Tucson, United States*

2. *Emergency Medicine, University of Arizona, Tucson, United States*

3. *College of Pharmacy, University of Arizona, Tucson, United States*

4. *College of Medicine, University of Arizona, Tucson, United States*

Corresponding author: sakles@aemrc.arizona.edu

Keywords: Intubation, Failed Airway, Videolaryngoscopy

Background:

It has been well established that VL is superior to direct laryngoscopy (DL) for first pass intubation attempts.

However, it is unknown which device has higher success as a rescue device on the second attempt following a failed first attempt. The purpose of this investigation is to determine the efficacy of DL vs. VL (C-MAC or GlideScope) as a rescue device in cases of a failed first intubation attempts.

Methods:

Prospectively collected continuous quality improvement (CQI) data for tracheal intubations performed in an academic ED over a 6-year period were retrospectively analyzed. Following each intubation, the emergency physician (EP) completed a data form addressing multiple aspects of the intubation including the device(s) utilized for each attempt, number of attempts, and outcome of each attempt. Only patients in whom intubation was attempted by an EP using DL or VL as the initial device were included in the analysis. After a first failed attempt, cases were excluded if there was a change in operator or a rescue device other than DL or VL was used.

Results:

2,856 patients underwent intubation by an EP using DL or VL, and 2,082 patients were successfully intubated on the first attempt (76.4%). There were 643 failed first attempts, and the same operator performed the second intubation attempt in 552 patients. DL was used as a rescue device for the second attempt in 216 patients and VL was used as a rescue device in 336 patients. On the second intubation attempt, DL was successful in 63.0% (136/216) patients, and VL was successful in 73.2% (246/336) patients (p=0.014).

Conclusions:

In this study, we found the vast majority of patients were successfully intubated on the first attempt regardless the initial device utilized. When the first attempt was unsuccessful, second attempt success was higher if operators used VL. This suggests VL should be used as a rescue device after a failed first intubation attempt in the ED.

Or-008

Airway 1

COMPARING THE GLIDESCOPE WITH DIRECT LARYNGOSCOPY WITH THE MACINTOSH BLADE IN AIRWAY MANAGEMENT – DATA FROM AN AIRWAY REGISTRY.

Evelyn Wong (1), Khoy Kheng Ho (2)

1. *Emergency Department, Singapore General Hospital, Singapore, Singapore*

2. *Alexander Hospital, Singapore, Singapore*

Corresponding author: evelyn.wong@sgh.com.sg

Keywords: Airway, Glidescope, Laryngoscopy

Introduction:

Previous studies have compared the success rates of intubation with videolaryngoscopy versus conventional

intubation with the curved Macintosh blade using manikin studies. Our institution is a tertiary care, level one trauma centre in South-East Asia. We have an emergency department airway registry from September 2008. The aim of this study is to compare the usefulness of the Glidescope with direct laryngoscopy with the Macintosh blade with clinical data.

Methods:

This is a prospective observational study of all intubations presenting to our Emergency Department from 1 September 2008 to 31 September 2012.

Results:

There were 1426 airway interventions recorded, of which 174 (12.2%) were trauma related. There were 956 (67%) men. The most common method of intubation was via rapid sequence intubation (52.2%). Most intubations were completed after one attempt (84.3%) while 95% were completed after two attempts. Eleven percent (157) of intubations were thought to be difficult while the failed intubation rate was 0.6% (8 out of 1422). Of 1325 intubations attempted by direct laryngoscopy with a curved Macintosh blade, 1272 (96%) were successful. Ninety-eight out of 100 (98%) intubations by glidescope were successful. In only 61 times was the glidescope used as the first intubating device. The most common rescue devices were the glidescope (39 times), bougie (21 times), laryngoscopy with the straight Miller blade (19 times).

Conclusions:

The glidescope appears to have a higher overall success rate for intubations (98%) and a success rate of 95% as a rescue device. It is hence an important rescue device consider having in the airway armamentarium.

Or-009

Airway 1

ACUTE UVULITIS IN ADULTS

Mohammad Ansari (1), Shakeeb Khan (1)

1. Emergency Medicine, George Eliot Hospital, Nuneaton, United Kingdom

Corresponding author: zransari@gmail.com

Keywords: Uvulitis, Supraglottitis, Airway obstruction

Introduction

Uvulitis refers to the inflammation of the Uvula. It can either occur in isolation or along with supraglottitis. Supraglottitis consists of inflammation of the epiglottis and supraglottic structures including the pharynx, uvula, base of tongue and aryepiglottic folds. The annual incidence of supraglottitis in adults is described at 0.97 to 1.8 per 100,000. It is important to diagnose the condition early because of the risk of airway compromise.

Methods

We reviewed the medical records of 15 patients who suffered with supraglottitis in the last 10 years. Five of these patients had isolated uvulitis.

Results

The age groups of the patients was between 25 and 38 years old. Nine were male and six female patients were identified. One patient developed uvulitis following inhalation of cannabis and two following use of marijuana. Three patients were diagnosed to be suffering with bacterial infection. All these patients were treated with steroids, inhaled adrenaline was used to reduce the swelling of the uvula and supraglottic structures. Those suffering with bacterial uvulitis required antibiotics.

Discussion:

The uvula is the posterior most part of the soft palate. Isolated Uvulitis due to Marijuana use was first reported in 1988. ²It is known that Cannabis and Marijuana products burn at a higher temperature than tobacco and is therefore more irritating to the mucous membranes. The exclusive swelling of the uvula and soft palate and not of the hard palate in cases of smoking Cannabis can be explained by the internal structure of the uvula and the hard palate. The soft palate is a thick fold of mucosa which encloses an aponeurosis and muscular tissue. On the other hand, in the hard palate the mucosa is tightly adhered to the underlying periosteum (Grey's Anatomy 39th Edition) and thus there is no space for the production of tissue oedema in cases of hard palate.

Many causes of uvulitis have been described in the literature which could either be infective, in the form of Streptococcus, Haemophilus influenza,^{3,4} Candida Albicans⁵ and Prevotella intermedia infections or it could be non-infective in nature because of Cannabis inhalation, dry heat like Sauna or even Manifestation of Kawasaki disease⁶ and it could be traumatic following Endoscopy.⁷ The diagnosis can usually be made by clinical examination.⁸ Investigations are usually unnecessary however direct laryngoscopy remains the preferred method of definitive diagnosis.

Due to the potential of airway compromise, cases of uvulitis should be treated as a matter of urgency. The various modalities of treatment which have been used are corticosteroids which act as membrane stabilising agents and reduce tissue oedema. Topical Adrenalin⁹ applied with a cotton tip applicator has been tried in the past with good results and antihistamines do not seem to be very effective. Antibiotics are only required for the cases which occur because of infections.

Conclusions:

Acute uvulitis is an uncommon problem but appears to occur because of use of Marijuana as well as Cannabis. It is important to make sure that the airway is protected in the management of acute uvular oedema. The management depends on the cause of the uvular swelling. If it is due to inhalation of the Marijuana or Cannabis then the patients appear to improve very quickly by giving nebulised Adrenalin.

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Or-010

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

NR2 ANTIBODY AS A PREDICTOR FOR NEUROLOGICAL RECOVERY IN POST-CARDIOPULMONARY RESUSCITATION PATIENTS

Ali Bidari (1), Samira Vaziri (1), Sahar Farahmand (1), Elham Talachian (2)

1. *Emergency Department, Iran University of Medical Sciences, Tehran, Iran, Islamic Republic of*
2. *Pediatric gastroenterology, Iran University of Medical Sciences, Tehran, Iran, Islamic Republic of*

Corresponding author: emdaxb@yahoo.com

Keywords: NR2 antibody, Cardiopulmonary resuscitation, biomarker

Background: Full neurological recovery is the benchmark of any successful cardiac resuscitation effort. Nevertheless, in early post-CPR state, neurological compromise is very common and does not necessarily mean a poor outcome. Recently, NR2 antibody (NR2-ab) has been introduced as a sensitive biomarker to define high risk transient ischemic attack. This antibody reacts with NR2 peptide of N-Methyl-D-Aspartate (NMDA) receptor which has a wide distribution in brain tissue. Irreversible brain ischemia releases NR2 peptide and prompts antibody synthesis. Considering the analogy of irreversible brain ischemia in cerebrovascular accidents and cardiac arrest, this study was conducted to evaluate whether the NR2-ab is of value in predicting neurological recovery in post-CPR patients.

Methods: Adults with non-traumatic cardiac arrest presented to emergency department of two teaching hospitals who resuscitated successfully to return of spontaneous circulation (ROSC) were recruited between December 2011 and November 2012. To be eligible the ROSC should last for at least 60 minutes with no intervening resuscitation effort. Venous samples were obtained 1hr after ROSC and serum extracted to be assessed for NR2-ab

assay. Survival status of the patients as well as the GCS score at 6, 24, and 72 hours after ROSC were evaluated and patients were followed until death or hospital discharge.

Results: Forty-nine patients, 24 male and 25 female, were included. Twenty-seven survived enough to be discharged from hospital, 13 of them in good to excellent neurological status. In total, 12 (24.5%) had positive NR2-ab, none of them survived to discharge; whilst of 37 victims with negative NR2-ab, 27 (73%) were discharged alive ($p < 0.0001$). By 6 hours after ROSC, 1 of NR2-ab positive patients and 2 in the other group died ($p = 0.587$). By 24 hours this figure raised to 8 and 6 ($p < 0.002$) and by 72 hours to 12 and 6 ($p < 0.000$) for NR2-ab positive and negative groups, respectively. GCS was significantly lower in survived NR2-ab positive patients at 1hr ($p < 0.02$), 6hr ($p < 0.0001$), and 24hr ($p < 0.0001$) after ROSC. In our sample, NR2-ab was 54% sensitive and 100% specific to indicate the fatal outcome over hospital stay.

Conclusion: Detection of NR2-ab in resuscitated patients may be a strong predictor of death and poor neurological outcome despite ROSC.

Or-011

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

CD146 INTEREST FOR ACUTE HEART FAILURE DIAGNOSIS IN PATIENTS WITH DYSPNEA

Said Laribi (1), Etienne Gayat (2), Alexandre Mebazaa (2)

1. *Emergency Department, APHP, Hôpital Lariboisière, Paris, France*
2. *Anesthesiology, APHP, Hôpital Lariboisière, Paris, France*

Corresponding author: said.laribi@lrb.aphp.fr

Keywords: Biomarkers, Dyspnea, Emergencies

Introduction: CD146 is a factor involved in endothelial angiogenesis cohesion. A proteomic analysis without a priori identified CD146 as a discriminating factor between acute forms and chronic forms of heart failure. In addition, the diagnosis of acute heart failure in patients with dyspnea in the emergency department (ED) is today based on clinical judgment associated with a dosage of natriuretic peptides (NP), however, the NP are sometimes failing, especially for values in the "grey zone". The objective of this study was to compare CD146 performance to those of NT-proBNP to the diagnosis of acute dyspnea.

Materials and Methods: One hundred ninety to seven patients presenting to the Lariboisière hospital ED with acute dyspnea were prospectively included in the study (CEERB nOIRB00006477, NCT01374880). Following the hospitalization of patients a panel of three experts adjudicated cause of acute dyspnea and separated the patients into two groups "Acute Heart failure" (AHF) and "non-cardiac dyspnea" (NCD). NT-proBNP and CD146 were measured at admission for all subjects from a biological collection, according to a électrochimoluminescence method for NT-proBNP (2010 Elecys Analyzer, Roche

Diagnostics, Rotkreutz, SE, USA) and by a ELISA method for CD146 (manual kit Biosite, Marseille) The area under the ROC curve of the two biomarkers to discriminate AHF patients group from NCD group was calculated for the entire cohort and for the subgroup of patients being in the "grey zone" (corresponding to a rate of NT proBNP from 300 to 1800 pg / ml)

Results: The cohort included 76 women (39%) and the median age [IQR] was 74 years [62-81], the median rate [IQR] NT-proBNP in the AHF group (n = 110, 56%) was 5912 pg / ml [2430-11570] and the NCD group (n = 87, 44%) of 385 pg / ml [109-981], p <0.0001, the corresponding values were 603 CD146 ng / ml [500-756] vs. 354 ng / ml [302-452], p <0.0001. For the entire cohort the AUC of the ROC curves were: 0.917 [0,874 - 0,918] for NT-proBNP and 0.870 [0,819 - 0,871]for CD146. When we select only the patients with an NT-proBNP in the "grey zone" AUC of the ROC curves were 0.549 [0,386 - 0,552] for NT-proBNP and 0.710 [0,564 - 0,712] for CD146.

Discussion: CD146, a marker of vascular dysfunction, can detect cardiac acute dyspnea with a similar discriminating power than NT-proBNP. Moreover, CD146 seems to have a better discriminating power than NT-proBNP for patients lying in the "grey zone"

Or-012

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

LOSS OF INDEPENDENCE: AN IMPORTANT GLOBAL MARKER OF ILLNESS

Mikkel Brabrand (1), Jesper Hallas (2), Annmarie Lassen (3), Torben Knudsen (1)

1. Department of Medicine, Sydvestjysk Sygehus Esbjerg, Esbjerg, Denmark
2. Research Unit for Clinical Pharmacology, Odense University Hospital, Odense, Denmark
3. Emergency Department, Odense University Hospital, Odense, Denmark

Corresponding author: mikkel.brabrand1@rsyd.dk

Keywords: Loss of independence, Mortality, Sensitivity

Background

As part of the assessment of all medical patients, vital signs are registered. However, each vital sign on its own (e.g. blood pressure, respiratory rate, pulse or peripheral oxygen saturation) only provide parts of the picture and are not global markers of illness. Loss of independence (LOI) (e.g. ability to stand, get into bed or out of a chair unaided) has been proposed as a global marker of illness. The present study present data on the association between LOI and short-term mortality in acutely admitted medical patients.

Methods

This was a prospective observational study of three independent cohorts. Acutely admitted adult medical patients over two three month periods at the medical admission unit at Sydvestjysk Sygehus Esbjerg (first and second cohorts) and one three month period at the medical

admission unit at Odense University Hospital (third cohort) were included. Upon arrival a nurse registered vital signs and LOI (defined as the ability to get into bed unaided). After inclusion of all patients, survival status was extracted from the Danish Civil Register. The association between LOI and death on the same or following day was assessed using both univariable analysis (Chi-squared test) and multivariable logistic regression analysis controlling for the vital signs, age and sex. Data will be presented as median (inter quartile range) or proportions.

Results

A total of 3046 patients (age 66 [50-77], 47.9 % female) were included in the first cohort, 2848 (age 64 [48-76], 52.3 % female) in the second and 2561 (age 67 [49-80], 53.9 % female) in the third. Twenty-six (0.9 %), 20 (0.7 %) and 26 (1.0 %) patients met the endpoint in each cohort. LOI was reported on 81.7 %, 90.4 % and 95.3 % respectively.

Patients who had LOI had a significantly higher short-term mortality, 2.5-3.9 % vs. 0.0-0.1 %, p < 0.001. While all patients in the first cohort who died had LOI, Odds Ratio (OR) was 53.4 (95 % confidence interval [CI] 7.0-405.3) in the second cohort and 38.6 (95 % CI 5.2-285.7) in the third. In multivariable logistic regression analysis controlling for age, sex, systolic blood pressure, pulse, temperature, respiratory rate and peripheral oxygen saturation, LOI had an OR of 12.6 (95% CI 1.5-107.6) in the second cohort and 12.2 (95 % CI 1.6-95.9) in the third.

LOI had a sensitivity for short term mortality of 93.8-100.0 %, a specificity of 61.7-78.1 %, positive predictive value of 2.5-3.9 % and a negative predictive value of 99.9-100.0 %.

Conclusions

LOI is a powerful marker of short-term mortality of acutely admitted medical patients with a very high negative predictive value.

Or-013

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

ULTRASONOGRAPHY IN RAPID DETECTION OF PNEUMOTHORAX IN PATIENTS WITH MULTIPLE TRAUMA IN THE EMERGENCY DEPARTMENT.

Srihari Cattamanchi (1), Abraham John Elamatha (2), Ramakrishnan Venkatakrishnan Trichur (2)

1. Harvard Affiliated Fellowship in Disaster Medicine / Emergency Management, Harvard Medical School, Boston, United States
2. Dept. of Accident & Emergency Medicine, Sri Ramachandra Medical College Research Institute, Chennai, India

Corresponding author: c.srihari@gmail.com

Keywords: Pneumothorax, Ultrasonography, Emergency Department

Introduction:

Early detection of pneumothorax in multiple trauma patients is critically important. It can be argued that efficacy of ultrasonography (US) for detection of pneumothorax is

enhanced if it is performed and interpreted directly by emergency physician in charge of the patient.

Aims & Objectives:

The aim of this study was to assess the ability of emergency physicians to perform bedside US to detect and assess the size of the pneumothorax in patients with multiple trauma.

Methods:

A prospective observational study done over 9 month's period, between April to December 2009, in ED of tertiary care level I trauma centre. Patients with multiple traumas treated in ED were enrolled. Bedside USG was performed by emergency physicians in charge of patient. Portable supine chest radiography (CXR) was obtained within 30 minutes and computed tomography (CT) was obtained within three hours. Using CT and chest drain as gold standard, diagnostic efficacy of US and CXR for detection of pneumothorax, defined as rapidity and accuracy were compared using SPSS software Ver. 15.0.

Results:

Of 55 patients included in study, 44 were male and 26 patients belonged to 15 – 29 years of age. The time needed for diagnosis of pneumothorax was significantly shorter with US compared to CXR (8.5 ± 3.0 versus 33.4 ± 15.2 minutes, $p < 0.001$). CT and chest drain confirmed 19 cases of pneumothorax (34.5%). The diagnostic sensitivity and specificity for US and radiography were 98.2% versus 27.6% ($p < 0.001$), 58.2% versus 82.6% respectively. Area under ROC curve was 0.798. Among them 29 patients were admitted in ICU and 11 patients went AMA.

Conclusion:

Bedside clinician-performed US provides a reliable tool and has advantages of being simple and rapid and having higher sensitivity compared to chest radiography for detection of pneumothorax in patients with multiple trauma.

Or-014

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

ACUTE PULMONARY EMBOLISM: PROGNOSTIC ROLE OF CT SCANNER

Nicolas Dublanchet (1), Lucie Cassagnes (2), Fares Moustafa (1), Nicolas Vincent (1), Julien Raconnat (1), Pascal Chabrot (2), Louis Boyer (2), Jeannot Schmidt (1)

1. Emergency department, CHU Gabriel Montpied, CLERMONT-FERRAND, France

2. Visceral and Vascular Imaging Department, CHU Gabriel Montpied, CLERMONT-FERRAND, France

Corresponding author: ndublanchet@chu-clermontferrand.fr

Keywords: Acute Pulmonary Embolism, Prognosis, Computed Tomography

Objectives

In acute pulmonary embolism (PE), right ventricular (RV) dysfunction, estimated on initial chest computed tomography (CT), is known as a powerful and independent

predictor of one-month death, but its role as a predictor of 3-months, 6-months and one-year death is unknown.

Diameter of the main pulmonary artery (PA) and his ratio with aorta (Ao) diameters could be interesting for predicting death in patients with acute PE.

Methods

We evaluated 228 consecutive patients with acute PE confirmed by chest CT. Ratio between right ventricle and left ventricle (RV/LVax, with a 0.9 cut-off value), PA diameter (cut-off value of 30 mm) and PA/Ao ratio (cut-off value of 1) has been used to evaluate their pronostic value.

Results

Mean age was 66.9 +/- 21.2 years. RV/LVax > 0.9 was correlated with an increased mortality rate at 3 months ($p=0.037$), 6 months ($p=0.046$) and 1 year ($p=0.027$). PA>30mm showed a higher mortality at 6-months ($p=0.038$) and one-year ($p=0.038$). No correlation between PA/Ao>1 and mortality rates has been found.

Conclusion

In patients presenting acute PE, RV/LVax > 0.9 is a powerful predictor of death from 3 months to one year of follow-up.

Or-015

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

ULTRASONOGRAPHIC OPTIC NERVE SHEATH DIAMETER TO DETECT ELEVATED INTRACRANIAL PRESSURE IN THE HYPERTENSIVE PATIENT

Mehmet Ergin (1), Cesareddin Dikmetas (1), Cigdem Savas (2), Basar Cander (1), Mehmet Gul (1), Abdullah Sadik Girisgin (1), Sedat Kocak (1), Kena Yavuz (1), Tarik Acar (1), Mehmet Kocabiyik (1)

1. Emergency Department, NEU Meram Medicine School, Konya, Turkey.

2. Public HHealth Department, NEU Meram MEDicine School, Konya, Turkey.

Corresponding author: drmehmetergin@gmail.com

Keywords: Emergency ultrasonography, optic nerve sheath diameter, hypertension

Purpose: In this study we've purposed to identify any increasing in intracranial pressure in patients with hypertension and any affects in the diameter of the optic nerve sheath while treatment by measuring the diameter of the optic nerve sheath with USG.

Material and method: This is a prospective observational study.149 patients involving 54 hypertensive-symptomatic patient (group 1), 45 hypertensive-asymptomatic patient (group 2) and 50 healthy volunteers (control) presenting to Necmettin Erbakan University Meram Medical Faculty Hospital Emergency Department were enrolled. The blood pressure of patients were measured from right and left upper extremity after minimum 5 minutes break, with the same sphygmomanometer, and the arhythmic average of these measurement was noted. the diameter of the optic nerve sheath was measured in both eyes as the axial and

sagittal planes referred to in the current literature. The arithmetical average of these 4 measurements was noted. Measurements after 30 minutes following antihypertensive treatment in group 1 were noted again. Examination and treatment was all free from researcher. These all were done by the doctor of emergency doctor following the patient.

Results: The study was about 149 people, 77 of these were women (%51,7). There were 50 full healthy people in control group, 45 people in group 2 and 54 people in group 1. In the study, significant difference of age between control group and hypertensive groups was identified ($p < 0.05$). However this difference wasn't seen in hypertensive groups ($p > 0.05$). The first measured systolic blood pressure average of the study was $111,70 \pm 9,77$ mmHg in control group, $165,66 \pm 18,19$ mmHg in group 2 and $177,12 \pm 22,58$ mmHg in group 1. According to these results significant differences between control and group 2 ($p = 0,000$), between control and group 1 ($p = 0,000$), between group 2 and group 1 ($p = 0,009$) were identified. The first measured diastolic blood pressure average of the study was $76,35 \pm 7,71$ mmHg in control group, $93,66 \pm 10,73$ mmHg in group 2, $100,32 \pm 11,79$ mmHg in group 1. According to these results significant differences between control and group 2 ($p = 0,000$), between control and group 1 ($p = 0,000$), between group 2 and group 1 ($p = 0,005$) were identified. The first diameter of the optic nerve sheath average was $0,442 \pm 0,0386$ cm in control group, $0,523 \pm 0,0570$ cm in group 2 and $0,527 \pm 0,0652$ cm in group 1. According to these results despite there were differences between control and group 2 or group 1 ($p = 0,000$, $p = 0,000$), no differences were identified between group 1 and group 2 ($p = 0,254$). In all groups mid-top level correlation between the first measured systolic blood pressure average and diameter of the optic nerve sheath average ($\rho = 0,629$) was identified, as between the first diastolic blood pressure average and diameter of the optic nerve sheath average ($\rho = 0,561$). These correlations were significant statistically (respectively: $p = 0,000$, $p = 0,000$). In hypertensive groups (group 1+group 2) significant correlation between the first measured systolic blood pressure average and diameter of the optic nerve sheath average ($\rho = 0,382$) was identified, as between the first diastolic blood pressure average and diameter of the optic nerve sheath average ($\rho = 0,280$). These correlations were significant statistically (respectively: $p = 0,000$, $p = 0,005$). In 40 patients getting antihypertensive treatment of group 1, statistically significant differences between systolic-diastolic blood pressure average before and after treatment were identified (respectively: $p = 0,000$, $p = 0,000$). In 40 patients getting antihypertensive treatment in emergency department of group 1, diameter of the optic nerve sheath average before treatment was $0,528 \pm 0,072$ cm, and after treatment was $0,461 \pm 0,058$ cm. Between these, statistically significant differences were identified ($p = 0,000$).

Conclusions: In hypertensive patients, measuring diameter of the optic nerve sheath with USG showed increase in intracranial pressure. And also with the same method, decrease in intracranial pressure after antihypertensive treatment was identified.

According to these results, measuring diameter of the optic nerve sheath with USG can be used for follow-up of the response to treatment, making decision for advanced imaging, like clinical watch and measuring blood pressure.

Or-016

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

A SIMPLIFIED LUNG SCORING SYSTEM TO ASSESS LUNG INJURY SEVERITY IN SEPTIC PATIENTS ADMITTED IN AN EMERGENCY UNIT

Thiago Martins Santos (1), Diego Lima Ribeiro (1), Daniel Franci (1), Marcelo Schweller (1), José Roberto Matos Souza (2), Marco Antonio Carvalho Filho (1)

1. Emergency Department, Hospital de Clínicas da Unicamp, Campinas, Brazil

2. Cardiology Department, Hospital de Clínicas da Unicamp, Campinas, Brazil

Corresponding author: thiago.uti@gmail.com

Keywords: lung ultrasound, sepsis, acute respiratory distress syndrome (ARDS)

Objective

This study was designed to assess whether a Simplified Lung Edema Scoring System (SLESS) is a good predictor of severity of disease in patients with sepsis, severe sepsis and septic shock.

Materials and Methods

This was a prospective observational study. Fifty septic patients were evaluated within the first hour of admission in the emergency department. All examinations were performed with a 2-5 MHz curvilinear transducer using a standard abdominal preset, since there is no specific preset for thorax.

Patients were placed in the supine or near-to-supine position. The lung ultrasound examination consisted of bilateral scanning of the anterior and lateral chest walls. The lung scanning was performed in the intercostal spaces. Each hemithorax was divided in three zones: (1) parasternal line, in the topography of the first and second intercostal spaces; (2) anterior axillary line, third and fourth intercostal spaces; (3) posterior axillary line, in the corresponding topography of the diaphragm. Therefore, six scans were performed for each patient. The scans lasted for at last 10 seconds.

The SLESS was developed in order to attribute a number of points to each lung scan. Three ultrasound aeration patterns were defined: A- normal aeration (presence of lung sliding with A lines or fewer than two isolated B lines): 1 point; B- moderate loss of lung aeration (multiple well-defined B lines): 2 points; C- severe loss of lung aeration (multiple coalescent B lines): 3 points.

Therefore, the SLESS ranged from 6 (normal lung aeration) to 18 (diffuse severe lung edema). Three scoring systems

(MEDS, SAPS3 and SOFA) were adopted in order to compare the severity of sepsis with the SLESS.

The SLESS was also compared with the PaO₂/FiO₂ ratio.

Results

Feasibility of the exam was good, and we considered it as an easy-to-use tool. Moreover, it did not delay the specific sepsis treatment.

The SLESS correlated with sepsis severity in both MEDS (0,45; p=0,07) and SAPS3 (0,49; p=0,009) scores. The weakest correlation was with the Sofa score (0,20; p=0,03).

When compared to the PaO₂/FiO₂ ratio, the SLESS showed a negative correlation (-0,43, p=0,001).

Conclusions

The SLESS is an easy and useful tool to predict disease severity in patients with sepsis.

Or-017

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

THE EMERGENCY ULTRASOUND IN ACUTE MANAGEMENT OF HYPOTENSION: REVIEW OF FATE PROTOCOL.

Julio Armas Castro (1), Blas Giménez (2), Santiago Dieguez (2), Encarna Valero Burgos (3), Juan Carlos Real López (2), Sussette Angell Valdes (4)

1. Emergency department, Hospital del Vinalopo, Alicante, Spain
2. Emergency Department, Hospital del Vinalopo, Alicante, Spain
3. Emergency Department, Hospital dle Vinalopo, Alicante, Spain
4. Primary Health Care, Hospital del Vinalopo, Alicante, Spain

Corresponding author: jarmas@vinaloposalud.com

Keywords: ultrasound, non-traumatic hypotension, critical care

Background: The ultrasound “point of care” can permit rapid, accurate, and noninvasive diagnosis of a broad range of acute critical situations in emergencies.

Focused-Assessed Transthoracic Echocardiography (FATE) is a point-of-care ultrasound protocol allowing the fast evaluation of the cardio-pulmonary status in non-traumatic patients. The organ-oriented diagnoses can combined with ultrasonographic hypothesis of the cause of hemodynamic instability.

Objectives: The primary goal is to determine sensitivity, specificity and other operating characteristics of bedside ultrasound for the evaluating of non-traumatic hypotension in our emergency department.

Patients and Methods: The cross-sectional study at Emergency Department of Hospital del Vinalopo prospectively evaluated 135 patients between April 2011 and April 2013 complaining of non-traumatic symptomatic hypotension. The attending physician of emergency medicine evaluated the patients through FATE protocol. Finally, data were compared and quantitative and categorical variables were worked out along with other statistical analysis through estimated indicators.

Results: The FATE examination performed during initial assessment detected free pericardial fluid in 30% (P=0.005) of those examined with initial symptoms of taponade. In 45% detected hypovolemic shock and non-compressive inferior cava vein (ICV). Compared with the advanced transesophageal echocardiography (ETE) the FATE examination had a sensitivity of 90.1% (95% CI, 90.1-92.4), specificity of 98.6% and negative predictive value of 72.1% (95% CI). By eliminating the 25 cases where the final clinical diagnosis was not agreement with initial findings the concordance between organ-oriented diagnosis and cause of hemodynamic instability increased to Kappa 0.932 (95% CI, 0.912-1.000), p=0.0001.

Conclusions: This study demonstrates that FATE protocol may be useful for the diagnosis of causes in non-traumatic hypotension in patients with hemodynamic instability. The integration of FATE protocol in algorithm of management in critical patients has great potential in to decrease mortality.

Or-018

Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

SONOGRAPHIC ASSESSMENT OF THE VENOUS EXCAVATION (SAVE) PROTOCOL.

Minsu Jo (1), Seungchul Lee (1)

1. Emergency medicine, Dongguk University International Hospital, Goyang-si, Korea, (South) Republic of

Corresponding author: superindra85@gmail.com

Keywords: Ultrasound guided central venous catheterization, Ultrasound guided catheterization of the internal jugular vein, Sonographic assessment of the venous excavation

Introduction

Central venous cannulation (CVC) plays several important roles in treating critically ill patients. Despite ultrasound decreased CVC related complications marvelously, adverse events still occur. For that reason we usually check the chest x-ray for confirmation. The purpose of this study was to evaluate the usefulness of peri-CVC ultrasound exam - sonographic assessment of venous excavation (SAVE) - of internal jugular vein (IJV) compared with chest x-ray.

Methods

The authors assembled a prospective observational cohort of emergency department (ED) patients undergoing CVC via IJV. Among the enrolled patients, 97 underwent SAVE examination. The SAVE protocol consisted of 1) pre-CVC lung ultrasound (LUS), 2) ultrasound guided puncture of central vein, 3) sonographic detection of guidewire before dilation, 4) post-CVC LUS. The primary outcome of interest was a estimated time of the SAVE exam. The whole process of patient’s care was recorded by video for the purpose of time analysis. And physicians described anatomical site, reason for cannulation, and acute mechanical complications including hematoma, arterial puncture, pneumothorax, and unsuccessful placement.

Result

In all subjects, guidewires were visible within the lumen of the IJV. Average access time, from insertion to the detection of guidewire in IJV via ultrasound, was 20±6.4 seconds. After the central venous catheter was inserted, post-CVC LUS was completed within 67±11.2 seconds on average. It took more than 5 minutes to identify chest x-ray image (average response time was 493±173.5 seconds). Acute mechanical complications, happened to 3 patients : pneumothorax, dissecting IJV, hematoma formation from arterial puncture, were detected immediately by SAVE exam.

Conclusion

The SAVE protocol may provide more safety during central venous catheterization by detection of CVC related complication more properly, without delay.

Or-019

Airway 2, Ventilation, and Simulation

VIDEOLARYNGOSCOPY FOR PRE-HOSPITAL USE: A PROSPECTIVE MULTICENTER COMPARISON OF GLIDESCOPE, MCGRATH, AND D-BLADE DURING EMERGENCY INTUBATION

Andreas Callies (1), Erol Cavus (2), Volker Doerges (3), Matthias Helm (4), Peer Knacke (5)

1. Klinik für Anästhesiologie und Intensivmedizin, Klinikum Links der Weser, Bremen, Germany
2. Department of Anaesthesiology and Intensive Care Medicine, University Hospital Schleswig-Holstein, Kiel, Germany
3. Klinik für Anästhesiologie und Operative Intensivmedizin, Universitätsklinikum Schleswig-Holstein, Kiel, Germany
4. Klinik für Anästhesiologie und Intensivmedizin, Bundeswehrkrankenhaus Ulm, Ulm, Germany
5. Anästhesieabteilung, Sana Kliniken Lübeck Ostholstein, Eutin, Germany

Corresponding author: doerges@uksh.de

Keywords: videolaryngoscopy, pre-hospital use, obligate indirect view

Study objectives: In this preliminary prospective study at four air rescue centers we compared the efficacy of three videolaryngoscopes (VLS) for obligate indirect laryngoscopy during pre-hospital emergency endotracheal intubations.

Methods: The study was approved by the institutional review board that waived requirement for written informed consent. 39 patients with the need for pre-hospital emergency intubation that were treated by a physician introduced in the specific VLS were intubated by the GlideScope Ranger (GS, Verathon Medical, Bothell, USA [1]; n=14, age: median [range]: 60 [25-74]; 3 female), the McGrath Series 5 (MG, Aircraft Medical, Edinburgh, UK [2]; n=11, age: median [range]: 55 [22-81]; 3 female), and the C-MAC D-Blade (DB, Karl Storz, Tut-tingen, Germany [3], n=14; age: median [range]: 66 [28-83]; 3 female).

Results: Indication for pre-hospital intubation was trauma in 11 cases (GS 4, MG 4, DB 3), cardiopulmonary resuscitation in 6 cases (GS 3, MG 3, DB 0), and unconsciousness of neuro-logical etiology and cardiogenic

dyspnea in 22 cases (GS 7, MG 4, DB 11), respectively. Median time to successful intubation was 25 [min-max: 7-300] seconds in the GS, 38 [min-max: 14-200] seconds in the MG, and 40 [min-max: 8-150] seconds in the DB group. Intubation on the first attempt was possible in 9 patients in the GS, 3 in the MG, and 10 in the DB groups. Two and four patients of the GS and MG groups, respectively, could not be intubated by VLS due to problems such as fogging, and were intubated with a conventional Macintosh laryngoscope.

Conclusion: Our preliminary data suggest that obligate indirect (video)laryngoscopes perform differently in the prehospital emergency setting. Out-of-hospital, obligate indirect (vid-eo)laryngoscopes must be used with the option for conventional direct laryngoscopy as a backup procedure.

Reference: [1] Cooper RM. Can J Anaesth. 2003;50:611-3, [2] Shippey B, et al. Can J Anaesth. 2007;54:307-13, [3] Cavus E et al., Anesth Analg. 2011;112:382-5.

Or-020

Airway 2, Ventilation, and Simulation

RAPID SEQUENCE INDUCTION IN THE EMERGENCY DEPARTMENT - A RETROSPECTIVE ANALYSIS

Ranjna Basra (1), Melanie Sahni (2)

1. Emergency Department, City Hospital Birmingham, Sandwell and West Birmingham Hospitals NHS Trust, Birmingham, United Kingdom
2. General Internal Medicine, University Hospital Birmingham, Birmingham, United Kingdom

Corresponding author: Ranjna@doctors.org.uk

Keywords: Rapid Sequence Induction, Emergency Department, Complications

INTRODUCTION

The accepted gold standard of emergency airway management includes Rapid Sequence Induction (RSI), a skill particularly important in the Emergency Department (ED). Complication rates in this environment have been documented to be higher, with ten times more difficult intubations being encountered.

In the UK, CEM has clearly outlined that every emergency physician (EP) should be trained to manage the patient's airway independently. Within the ED setting, it is common practice that RSIs are undertaken by both, EPs and anaesthetists. In most UK EDs, RSIs will still predominantly be performed by anaesthetists, despite recent UK studies highlighting similar success rates between both specialities, provided adequate training has been given. Interestingly, a recent study investigating RSIs in a Scottish DGH showed comparable success, as well as complication rates of tracheal intubations performed by EP and anaesthetic staff, with a high rate of senior supervision. This could be attributed to early recognition of the critically ill patient. The Difficult Airway Society (DAS) issued guidance in 2004 for RSIs, highlighting the importance of verification of tube

placement by direct visualisation, capnography and the use of an oesophageal detector. Additionally, the NAP 4 audit in 2011 found mortality of out-of theatre RSIs were directly associated with a lack of capnography being used.

This audit aims to specifically investigate and characterise RSIs in the ED setting of an urban teaching hospital. It establishes the success and complication rates through comparison of EM and Anaesthetic practice, whilst analysing adherence to guidance set out by DAS and NAP4.

METHOD

Royal Wolverhampton Trust serves an urban population in the UK with an average annual census of 100 000 patients. A single centre, retrospective, cross-sectional audit was conducted between 1st September 2010 and 31st March 2012 (18 months) in the ED of this trust.

Appropriate case notes were reviewed by RB at the end of the collection period. Data collected included patient's age, sex, the indication for intubation, anaesthetic agents used, speciality and seniority of operator and supervisor, number and details of each attempt at intubation, success rate and associated short term complications.

RSI was defined as the simultaneous administration of an induction agent with a rapidly acting neuromuscular blocking agent.

Complications were defined as trauma, leaks, bronchial intubation, aspiration or oesophageal intubation.

Any necessary re-intubation or re-attempt at visualisation of the larynx was taken as an additional attempt.

RESULTS

107 RSIs were undertaken during the 18 months. After excluding intubations without an anaesthetic agent; intubations as part of pre-hospital management or in the context of cardiac arrest management; 77 true RSI's were identified. One patient who required RSI with and induction agent as part of his cardiac arrest management was included in the analysis.

Most RSIs (47.4%) were undertaken in patients between 16 – 49 years of age with 32.1% of all RSIs having no clear outcome documented. 62.8% of ED RSIs were performed by ITU doctors and 29.5% by EPs. Furthermore, the majority of RSIs were done by Specialist Registrar grades (73%) with 51.3% having no supervising senior doctor present.

In only 21.8% the use of capnography was clearly recorded in the ED notes. 10% of all RSIs were complicated by leaks, oesophageal or bronchial intubation and trauma. Worryingly, 1/3 of all RSIs were associated with poorly recorded anaesthetic agents.

Majority of all RSIs were successful after the first attempt (53.8%). In only 5% of all recorded cases 2 attempts were needed, and 3%, 3 attempts needed in securing successful intubation.

DISCUSSION

We found that RSIs were predominately performed by anaesthetists in our ED, unlike previous reports showing equal ratios. This is the first audit evaluating tracheal intubations in our ED, after the latest DAS guidelines highlighted the importance of capnography. Despite clear instructions, only 22% of patients had explicit documentation as to which measures were used to verify tube position. Half of all RSIs were unsupervised by a senior doctor and a complication rate of 10% was recorded.

In conclusion, poor use of capnography and poor documentation of RSIs in the ED need to be addressed in order to achieve safe practice.

Or-021

Airway 2, Ventilation, and Simulation

HOW MANY HOURS I HAVE TO VENTILATE? IS THERE ANY EARLY PREDICTOR OF OUTCOME IN PATIENTS TREATED WITH NIV FOR ARF?

Rodolfo Ferrari, Roberto Lazzari, Fabrizio Giostra, Domenico Rizzoli, Mario Cavazza

Emergency Department, Policlinico Sant'Orsola - Malpighi, Bologna, Italy

Corresponding author: dr.robertolazzari@gmail.com

Keywords: NIV, CPAP, predictor

Introduction:

Acute Respiratory Failure (ARF) is a common cause of referral to the ED. Treatment of ARF includes oxygen, drugs and in some cases Mechanical Ventilation. In the last years Non Invasive Ventilation (NIV) with continuous or intermittent positive pressures (CPAP/NIPPV) played an important role in the treatment of ARF. These techniques have to be used in well defined areas (in and out of the ED) with medium-high intensity of care, because they need specific devices and training of the caregivers to be applied safely and successfully. The aim of this retrospective observational study is to look for any early predictor of hours of ventilation needed by the patient to overtake the acute phase, in order to help the Emergency Physician (EP) to choose the right place to admit.

Methods:

We enrolled consecutive patients that referred to our ED (Policlinico S. Orsola – Malpighi, Bologna, Italy) for ARF and were treated with NIV between October, 10th 2011 and January, 10th 2012 (92 days). Criteria for the application and discontinuation of NIV were established by an internal protocol based on the best evidence, whereas the choice between CPAP and NIPPV and the pressure settings were decided by the EP. For every patient we collected anamnestic data, vitals, Arterial Blood Gases (ABG), labs, drugs administered, type of NIV and pressure used and finally the time for resolution of the crisis. This last parameter was defined by the time (minutes) of ventilation needed until we can stop it for at least 48 hours. We analysed our data dividing patients in 5 groups based on anamnestic data (chronic broncho pneumopathy – CBP, cardiomyopathy, valvular disease, CRF, diabetes), 6 groups based on ABG values (pH <= 7.34, pH 7.35 to 7.45, pH >= 7.46, CO2 <= 34, CO2 35 to 45, CO2 >= 46 mmHg) and 4 groups based on the etiology of ARF as suspected by the EP (cardiogenic, hypercapnic CBP related non-cardiogenic, hypercapnic CBP and cardiogenic, other).

Results:

We enrolled 149 patients. Patients with history of CBP, history of cardiomyopathy, history of valvular disease, history of CRF, history of diabetes could stop NIV on average time of 1101, 634, 396, 772 and 636 minutes respectively.

Patients with low pH could stop NIV on average time of 954 minutes, versus 486 minutes for patients with normal pH and 224 for patients with high pH. Patients with high CO₂ levels could stop on average time of 1007 minutes, versus 397 minutes for patients with normal CO₂ and 341 minutes for patients with low CO₂.

Average time to resolution in patients admitted for cardiogenic ARF, hypercapnic CBP related non cardiogenic ARF, hypercapnic CBP and cardiogenic ARF and other causes of ARF was respectively 299, 1469, 1136 and 715 minutes.

Patients with BPC admitted for cardiogenic ARF resolved in 379 minutes; patients with low pH admitted for cardiogenic ARF resolved in 274 minutes; patients with high CO₂ admitted for cardiogenic ARF resolved in 333 minutes.

Discussion and conclusion:

In our study, patients treated for hypercapnic CBP related ARF, patients with low pH and/or high CO₂ levels at ABG and patients with history of CBP needed more than 16 hours of NIV to resolve the crisis. This technique is not usually applied for more than 8 consecutive hours (because of poor tolerance and complications that can occur, particularly facial skin necrosis), so this time strongly underestimate the length of stay in a medium-high intensity of care area: this kind of patients cannot be treated only in the ED.

On the contrary, we've noted that patients affected by cardiogenic ARF, patients with high pH and/or low CO₂ levels at ABG that needed NIV could stop it on average of less of 6 hours. Though, average time to resolution of the crisis of patients with history of CBP treated for cardiogenic ARF was much shorter than of all patients with history of CBP. Average time to resolution of the crisis of patients with low pH treated for cardiogenic ARF was much shorter than of all patients with low pH. Average time to resolution of the crisis of patients with high CO₂ levels treated for cardiogenic ARF was much shorter than of all patients with high CO₂ levels. In this three subgroups the average time to resolution of the crisis was similar to the time founded in the cardiogenic ARF group.

In our opinion, it's reasonable to treat this kind of patients in the ED with NIV and then safely admit to a General Ward at suspension.

Or-022

Airway 2, Ventilation, and Simulation

MATHEMATICALLY ARTERIALIZED VENOUS VS. ARTERIAL BLOOD GAS VALUES IN NON-INVASIVE VENTILATION

Anne-maree Kelly (1), Sharon Klim (1), Stephen Rees (2)

1. Joseph Epstein Centre for Emergency Medicine Research, Western Health, Australia, St Albans, Australia

2. Center for Model-Based Medical Decision Support, Institute for Health Science and Technology, Aalborg University, Aalborg, Denmark

Corresponding author: anne-maree.kelly@wh.org.au

Keywords: blood gas, non-invasive ventilation, modelling

Background: Blood gas analysis is important for assessment of ventilatory function. Traditionally, arterial analysis has been used. A method for mathematically arterializing venous blood gas values has been developed. Our aim was to validate this method in patients undergoing non-invasive ventilation (NIV) in an emergency department (ED).

Materials and Methods: This unplanned sub-study of a prospective cohort study included adult patients undergoing NIV for acute respiratory compromise. When arterial blood gas analysis was required for clinical purposes, a venous sample was also drawn. Mathematically arterialized values were calculated independent of arterial values. Primary outcome of interest was agreement between mathematically arterialized venous and arterial values for pH and pCO₂. Bland-Altman bias plot analysis was used.

Results: 82 sample-pairs (60 patients) were studied. Mean difference for arterial pH (actual-calculated) was 0.01 pH units (95% limits of agreement: -0.04, 0.06). Mean difference for pCO₂ (actual-calculated) was -0.06kPa (95% limits of agreement: -1.34, 1.22).

Conclusion: For patients undergoing NIV in an ED, agreement between mathematically arterialized venous values and arterial values was close for pH and moderate for pCO₂ with reasonably narrow limits of agreement. This method may be a clinically useful alternative to arterial blood gas analysis in the ED.

Or-023

Airway 2, Ventilation, and Simulation

THE IMPACT OF STRESS ON MEDICAL STUDENTS IN MANAGING MASS CASUALTY EVENTS DURING VIRTUAL REALITY SIMULATION SCENARIOS.

Pier Luigi Ingrassia, Luca Ragazzoni, Fabio Maccapani, Marina Padoan, Federico Barra, Francesco Della Corte
CRIMEDIM - Research Center in Emergency and Disaster Medicine, Università del Piemonte Orientale, Novara, Italy

Corresponding author: luca.ragazzoni@med.unipmn.it

Keywords: disaster simulation, stress response, triage performance

Background

Several studies assessed the effects of training and teaching in disaster medicine using simulation systems on medical skills. Virtual Reality (VR) simulation has been demonstrated to be feasible for training healthcare personnel in handling major events and in performing triage. Even though substantial research demonstrates that

the stressors accompanying the first responder working can lead to mental health concerns, stress responses in a simulated scenario and the effects of stress on health care personnel ability to manage mass casualty incidents and to perform triage have been rarely studied. The aim of this study is to assess medical students' acute stress responses and performance during VR mass casualty incident high-stress scenario compared to low-stress scenario. It is hypothesized that an highly stressful scenario would lead to increased stress responses, as measured by modification of heart activity, blood pressure and respiratory rate. It is also hypothesized that performance in performing triage would be impaired in an highly stressful scenario.

Methods

A prospective randomized controlled longitudinal study was conducted. Ninety-six medical students in their sixth year of study, attending the emergency medicine curricular course at the Università del Piemonte Orientale, were enrolled. The students were randomized in two groups, respectively called group A (GA) and group B (GB), each one composed of 48 participants. Each group was divided in 12 subgroups of 4 students. The same scenario, centered on a car accident resulting in 30 casualties, was identically developed both on VR high-stress simulation and on VR low-stress simulation. The stressor factors in VR high-stress simulation were: low light, auditory noise, bad climate conditions, pre-determined radio calls from dispatch center at time T5min and T10min and the arrival of a reporter with camera from local news stations asking for news at time T7min. The 12 subgroups of group A was exposed to VR high-stress scenario and the 12 subgroups of group B was exposed to VR low-stress scenario aiming at managing the scene and at triage 30 victims in a limited period of time (20 min). A 10-minute orientation seminar was carried out before the VR scenarios to allow familiarization with the VR software XVR. The students entered four at a time in the scenario and, before the entrance, a scenario description allowed students to completely understand their role in the simulation. The goal of the simulation was to assess and to manage the scene, and perform a primary triage and eventually lifesaving treatments of all victims. Heart rate, blood pressure and respiratory rate were recorded just before and after the simulations. Four outcomes were measured for each scenario: triage correctness, time to triage the first victim, time to evacuate the first patient and total triaged victims. Triage correctness was measured as accuracy of assigned versus expected triage code.

Results

Regarding physiological stress parameters there were no significant improvements in heart rate and blood pressure after the simulations in the two groups. Interestingly, respiratory rate showed a marked increase after the scenario in GA ($p < 0.01$). The triage accuracy was 83% in GA and 85% in GB. The average time to triage the first victim was 4'33" and 4'83" in GA and in GB, respectively. There were no statistical differences between the two groups. The average time to evacuate the first patient was 15'00" in GA and 13'6" in GB. While the 25% of victims were not triaged after 20 min in GA, the percentage of not triaged victims in GB was only 14% with a statistical difference between the two groups ($p < 0.01$).

Conclusion

This study would seem to reveal that the VR high-stress scenario had no influence on students' physiological response to acute stress. However, the study demonstrated that the medical students exposed to VR high-stress scenario, compared to those exposed to low-stress scenario, showed impairments in performing triage as revealed by a decrease in speed to evacuate the first victim and to complete triage.

Or-024

Airway 2, Ventilation, and Simulation

USE OF THE KERNEL SUPPORT VECTOR MACHINE FOR PREDICTION OF NEED FOR ADMISSION AND TIME FOR DISPOSITION AMONG SIMULATED EMERGENCY DEPARTMENT PATIENTS DURING DISASTER EXERCISES

Jeffrey Franc (1), Manuela Verde (2)

1. *Emergency Medicine / Disaster Medicine, University of Alberta / University of the Eastern Piemonte, Novara, Edmonton, Canada*
2. *Critical Care, University of the Eastern Piemonte, Novara, Novara, Italy*

Corresponding author: jeffrey.franc@gmail.com

Keywords: kernel support vector machine, disaster medicine, emergency department

INTRODUCTION: In times of increased patient numbers, such as mass casualty incidents or other disasters, hospital emergency departments often need to increase their surge capacity. Predicting the need for surge capacity is difficult, and more accurate predictions of which patients will need admission to hospital and how long they will spend in the department may be helpful. Traditionally, predictions of patient flow are often based on the patient's triage score; this method of prediction is often rudimentary. Computerized machine learning may offer a more accurate prediction rule. Using a large dataset of simulated patients, the present study investigates the use of the Kernel Support Vector Machine as a more accurate predictor of patient flow.

METHODS: The present study investigates methods to predict two response variables: (1) need for admission and (2) time for disposition for simulated disaster patients. Two decision tools are compared for predicting the need for admission: a simple classifier based on triage score and a Kernel Support Vector Classifier. For prediction of time to disposition, again two tools are compared: a simple model based on triage score, and a Kernel Support Vector Regression. The null hypothesis that simple decision tools are equal to Kernel based tools was tested against the alternative hypothesis that the methods are not equal. The data was obtained from 65 individual simulations of the SurgeSim emergency department surge capacity simulator (SurgeSim, Edmonton, Alberta, Canada). The original SurgeSim dataset contains 6887 observations (rows) and 266 predictors (columns). Unfortunately, the dataset is

complicated. It contains of observations of integers, numeric, character, text, and image references and has a complex dependency structure. As such, we limited the study to 66 columns that are most likely to contain information that is both available during a disaster situation and likely to influence the response variables. The dataset was divided into a training and test set by randomly selecting 1000 observations for the test set and leaving the remaining in the training set. Modeling used the `ksvm` function from the `kernlab` package of the R statistical computing language (R foundation for statistical computing, Vienna, Austria).

RESULTS: Using a simple triage code based prediction rule for admission gave an overall accuracy of 0.325 and a recall of 0.25. Use of the simple triage code based predictor for time to disposition was unsuccessful, as Pearson's product-moment correlation fails to show significant correlation between the observed and predicted values of time to disposition (Correlation Coefficient=0.169, 95% CI -0.05 to 0.37, $p=0.13$). Conversely, overall accuracy for the kernel support vector machine predictor of need for admission was 0.725, and recall was 0.6. Likewise, the kernel support vector machine predictor of time to disposition showed significant correlation by Pearson's product-moment correlation (Correlation coefficient 0.25, 95% confidence interval 0.03 to 0.044, $p=0.02$).

CONCLUSIONS: Prediction rules for need for admission and time to disposition decision based on the kernel support vector machine appear to be superior to simple decision rules based on triage code. These prediction rules may be valuable in timea when emergency departments require increased surge capacity. Although the present model is complex, it is based on freely available statistics software and could potentially be implemented in a computerized patient tracking system.

Or-025

Airway 2, Ventilation, and Simulation

TESTING & REFINING A PRE-HOSPITAL CARE CLINICAL PRACTICE GUIDELINE USING SIMULATION METHODS

Guillaume ALINIER (1,2), C. CAMPBELL (1), J. MEYER (1), L.A.H. AL SHAIK (1), R. Pap (1)

1. Ambulance Service, Hamad Medical Corporation, Doha, Qatar
2. University of Hertfordshire, Hatfield, UK

Corresponding author: g.alinier@herts.ac.uk

Keywords: Algorithm, simulation scenario, mental modelling

Aim: The study aim was to test and refine a newly developed pre-hospital trauma clinical practice guideline (CPG) in an innovative manner and obtain feedback with regards to the perceived usefulness and ease of use of the proposed CPG and the approach used.

Methods: Rather than simply imposing an updated guideline, the team decided to involve a variety of frontline staff to test the CPG in various contexts (Rural/Urban) and

through 2 different simulation approaches to ensure the CPG was clear and implementable, but also to make the necessary revisions as per their suggestions before submitting it for approval by the institutional Guidelines and Standards Committee. Over a 4-week period, 4 Ambulance Paramedic (AP) and Critical Care Paramedic (CCP) teams were invited to familiarise themselves with an updated trauma CPG and asked to complete a baseline demographic questionnaire. The individual teams (3APs+1CCP) received training on the use of new pieces of equipment, blood products, and Tranexamic Acid but not the algorithm itself. Using a cross-over design the teams took part in mental modelling (MM; Table top scenario) and full-scale simulation (FSS; With a Laerdal 3G patient simulator) sessions to apply the CPG indifferent scenarios in both simulation modalities. The MM and FSS sessions were each followed by a focus group (FG) discussion to appraise the use of the CPG based on their experience of the 2 scenarios and to suggest changes. After their second and final simulation session, a questionnaire derived from a validated tool (Davis, 1989) was used to obtain quantitative feedback about participants' perceived usefulness and ease of use of the proposed CPG and that of both simulation modalities they experienced. The CPG algorithm was updated using the feedback collected and given back to the participants for review with a questionnaire so they could evaluate the changes and make other suggestions. In addition to basic demographic data, all questionnaires made use of open ended questions and included items with a 7-point Likert scale.

Results: The study recruited 16 participants: 4 CCPs and 12 APs (15 male). This included 2 APs and 2 CCP HEMS crew members. All participants completed all the questionnaires but 2 CCPs missed the MM session and 1 AP missed the FSS session. On average participants were 32.2 y/o (SD=5.0), had 10.0 years of clinical experience (SD=4.6) and 7.4 years of pre-hospital care experience (SD=4.6), and 80% of participants attended to over 21 patients with significant haemorrhage. The baseline value of their familiarity with the current trauma CPG was 2.4 (1=Extremely familiar, 7=Extremely unfamiliar) (SD=1.4) and their level of comfort in treating a patient with significant haemorrhage was 1.7 (SD=0.7). Following MM and FSS implementation of the proposed CPG, they rated over 6 items its overall usefulness as 1.7 (1=Positive, 7=Negative) (SD=0.9) and ease of use as 1.5 (SD=0.6). Points raised during the FG included misinterpretation of RSI criteria, timing confusion, fluid management, drug therapy, colour coding of algorithm frames, and management of polytrauma patients. From a testing/refinement point of view, the usefulness and ease of use of the MM and FSS were respectively rated as 2.5 (SD=1.1) and 2.1 (SD=1.1), and 1.7 (SD=0.8) and 1.6 (SD=0.7), showing a slight preference for the hands-on simulation experience. The ease of interpretation and implementation of the refined CPG were rated as 1.6 (SD=0.6) and 1.5 (SD=0.5) (1=highly positive, 7=highly negative). 3 participants suggested other changes to the CPG algorithm.

Conclusions: Participants were very receptive to the overall process and appreciative of having been involved as AP/CCP teams. The MM, FSS, and FG discussions proved useful in

identifying confusing aspects of the updated CPG that may not have been noticed until actual implementation with real patients. The very low-tech and low-cost MM exercise helped participants put in context the new CPG without stress. They suggested it should be done prior to the FSS which is totally hands-on, more stressful, but perceived more useful to test a new CPG. As a few other changes were suggested another round of MM and FSS with other participants will be organised.

Acknowledgements: The authors thank all participants and staff who supported this study.

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Or-026

Airway 2, Ventilation, and Simulation

SHOULD EVERY NEW DEVICE BE TESTED BY MEANS ADVANCED SIMULATION BEFORE ITS INTRODUCTION IN CLINICAL PRACTICE? THE CASE OF A VIDEOLARYNGOSCOPE AND CARDIOPULMONARY RESUSCITATION

Antonio Rodriguez-nunez (1), Antonio Casal Sanchez (2), Antonio Iglesias (3), Sanchez Luis (4), Ignacio Oulego-erroz (5)

1. Pediatrics. Intensive Care Unit, Clinical University Hospital, Santiago, Spain
2. emergencias, public emergency healthcare system of Galicia, Santiago, Spain
3. Director, Public Emergency Care System 061 Galicia - Spain, Santiago, Spain
4. Teaching and Research, Public Emergency Care System 061 Galicia - Spain, Santiago, Spain
5. Pediatrics. Cardiology, Leon Clinical Hospital, Leon, Spain

Corresponding author: luis.sanchez.santos@sergas.es

Keywords: patient's safety, advanced airway management, testing devices

Introduction

Pediatric cardiopulmonary resuscitation (CPR) guidelines recommend performing chest compressions (CC) as continuously as possible. Recently, a number of new videolaryngoscopes and other devices designed to facilitate tracheal intubation (TI) in standard and difficult airway conditions have been released. These devices could offer significant advantages in terms of efficacy and safety when compared with standard laryngoscopes but evidences are lacking to define their role in practice. Advanced simulation could offer a preliminary tool to test new devices before their trial in real patients. Our objective was to test the ability of pediatric residents for TI in infant and child manikins during continuous CC by means an indirect videolaryngoscope (Glidescope).

Methods

Twenty-three residents who were trained to intubate infant (SimBaby, Laerdal) and child (Megacode Junior[®], Laerdal)

manikins were eligible for the study. They were asked to perform TI in the manikins assisted by both standard laryngoscopy and Glidescope while a colleague delivered continuous CC. The sequence of use of devices was randomized. Primary endpoints were the rate of successful placement of the tube in the trachea and the duration of the TI in seconds. Total intubation time (TTI) was defined as the time since the operator picked up the laryngoscope until the tube was deemed to be correctly positioned (by means of observation of clear thorax rising when insufflation with bag was done). A visual analogue scale (from 0 to 10) was used to know the participants' opinion about the difficulty of the procedure.

Results

In the infant scenario, the median (IQR) TTI was significantly shorter with the Miller laryngoscope [28.2 (20.4-34.4) seconds] than with Glidescope [38.0 (25.3-50.5) seconds] ($p=0.021$). The number of participants who needed more than 30 seconds to intubate the infant manikin was also significantly higher with Glidescope ($n=13$) than with Miller ($n=7$) ($p=0.01$). In the child scenario, the TTI [20.2 (18.6-25.1) vs. 22.3 (19.8-28.6) seconds] and number of intubation failures (3 vs. 4) were similar with Macintosh and Glidescope[®] laryngoscopes. The participants' opinion about the difficulty of the procedure was similar for standard laryngoscopes and videolaryngoscope.

Conclusions

In a simulated infant CPR scenario with continuous CC, the videolaryngoscope Glidescope increases the TTI when compared with standard direct laryngoscope and nearly doubles the number of participants who would need more than 30 seconds to perform the procedure. In a child scenario the results with this device and a standard laryngoscope are similar. Additional studies are needed to know the potential role of new devices to manage the pediatric airway in different settings and clinical conditions. We suggest that testing by means of advanced simulation should be the first step in the assessment of new medical devices.

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Or-027

Airway 2, Ventilation, and Simulation

BRIDGING THE GAP BETWEEN KNOWLEDGE AND PERFORMANCE. THE CASE OF ANAPHYLACTIC SHOCK

Eva Civantos-fuentes (1), Manuel Fernandez-sanmartin (2), Antonio Iglesias (3), Sanchez Luis (4), Jose Moure-gonzalez (2), Antonio Rodriguez-nunez (2)

1. *pediatrics, primary health care public system. canarias, santa cruz de tenerife, Spain*
2. *Pediatrics. Intensive Care Unit, Clinical University Hospital, santiago, Spain*
3. *Director, Public Emergency Care System 061 Galicia - Spain, santiago, Spain*
4. *Teaching and Research, Public Emergency Care System 061 Galicia - Spain, santiago, Spain*

Corresponding author: luis.sanchez.santos@sergas.es

Keywords: ANAPHYLAXIS, EPINEPHRINE, SYSTEMATIC TRAINING

Introduction

Anaphylaxis is a potentially lethal event that can occur at any moment or place. Primary care pediatricians (PCP) must be able to immediately recognize and treat it. Our objective was to assess the attitudes and performance of PCP when faced to a simulated scenario of anaphylactic shock, in order to know the weak points that should be reinforced in future theoretical and practical courses.

Methods

An anaphylactic shock scenario based on a real case (a 10 month-old baby treated by one of the authors) was implemented in the SimBaby (Laerdal, Norway) advanced simulation system. The scenario was run as part of the program of the mobile advanced simulation courses for PCP carried out by the Spanish Society of Pediatric Primary Care along several cities in Spain through 2008 to 2012. The mean duration of the scenario was 20 minutes; the patient's evolution was modified by the instructors according to the participants' actions. We have analyzed the performance of 80 groups of 4 PCP who were exposed to the scenario. The assessment was made by one of the authors who systematically reviewed the scenario's video records and registered a number of items including: diagnosis, identification of the severity of case, times to monitoring and administration of treatments (oxygen, epinephrine, fluids, corticosteroids), dosages, contact with the emergency medical system and transfer to the referral center.

Results

All groups immediately recognized the clinical problem and its potential severity. However, most of them did not apply correctly the management recommended by international guidelines. Oxygen was provided in 90% of scenarios (by means of different methods) and the pulse oximeter was placed on the first 2 minutes, while only 50% proceeded to the manual opening of the airway. In 97% of cases, epinephrine was administered as the initial treatment in a time range from 1 to 10 minutes, but its route of administration was subcutaneous in 93%. During the scenario, 90% of groups administered 2 doses of epinephrine, 60% three and 30%, four. Participants obtained an intravenous access in 80% and an intravenous access in 20% of cases. Fluid replacement (normal saline boluses at doses of 20 ml/kg) was provided to the 97% of patients. Corticosteroids were administered to 80% of patients.

Conclusions

Systematic assessment of the clinical performance during advanced simulation scenarios may be useful to detect the

strengths and weaknesses of PCP to manage rare but life threatening reactions like severe anaphylaxis. Although PCP were able to immediately detect the problem, they lack abilities to manage the patient following the ABCDE approach and to administer epinephrine by the appropriate intramuscular route. Future training programs about anaphylaxis should benefit from a reinforcement of the step-by-step evidence based management of the patient; advanced simulation should play a main role in this training process.

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Additional info

Authors declare having no conflict of interest.

Or-028

Imaging/Ultrasound II and Telemedicine

ULTRASOUND AS TRIAGE TOOL IN EMERGENCY DEPARTMENT

Adela Golea (1), Raed Arafat (1), Mihaiela Pasc (2), Catalin Ilea (2)

1. *University of Medicine and Pharmacy, Emergency Discipline, Cluj Napoca, Romania*

2. *Emergency Department, County University Emergency Hospital, Cluj Napoca, Romania*

Corresponding author: adela_golea@yahoo.com

Keywords: ultrasound, triage, tool

Standard emergency triage is intended to identify the most seriously ill patients first and to assure that they receive rapid care. Triage is a brief clinical assessment that determines the time and sequence in which patients should be seen in the ED or the speed of transport to the operating room and change of hospital destination. In this context, we have to establish the role of ultrasound examination in triage protocol.

The main goals of the ultrasound hospital triage are: 1. To establish the level of emergency and correct diagnosis of immediately life-threatening injuries. 2. To choose the proper therapy in the shortest time. 3. To elect the transfer of the patients to the trauma center or other specialty departments according with lesions.

Material and methods: 1452 patients presented in ED between December 2005 – April 2006, who were examined using ultrasound devices in the first hour after admission.

Results: renal emergency: 240 patients; US positive 167, surgical 5; biliary emergency: 567 patients; US positive

473, surgical 137; trauma:111 patients; US positive 18, surgical 7; vascular: 37 patients; US positive 27; ; digestive emergency: 497 patients; US positive 285, surgical 107.

Conclusion: 1. Ultrasound offer time-sensitive clinical information, diagnosis life threatening injuries with high speed and accuracy. 2. It is dangerous to waste time and delay ultrasound triage because we can lose patients. 3. The patients flow in Emergency Department is high, so the physician need ultrasound to make a rapidly and accuracy diagnosis and to improve time of treated and discharged patient from the emergency. 4. In all the Emergency Department triage is a part of the routine daily operation, but is a high risk medical activity. 5. A major problem of the large hospital is the pressure of medical triage which may cause mistakes in perceived subtle signs of high-risk disease.

Or-029

Imaging/Ultrasound II and Telemedicine

COULD ULTRASOUND HELP THE MANAGEMENT OF PATIENTS WITH ACUTE DYSPNEA IN EMERGENCY DEPARTMENT (ED)

Raed Arafat (1), Adela Golea (1), Catalin Ilea (2)

1. University of Medicine and Pharmacy, Emergency Discipline, Cluj Napoca, Romania

2. Emergency Department, County University Emergency Hospital, Cluj Napoca, Romania

Corresponding author: adela_golea@yahoo.com

Keywords: ultrasound, dyspnea, emergency

Dyspnea is a subjective sensation of short of breath associated with breathlessness. Approach to emergency differential diagnosis based on the analysis of various clinical parameters varied, the biological markers of pulmonary and cardiac ultrasound examination of "Point of Care" followed in cases of type complex CT imaging examinations, angioCT.

Material and method: we include in study 37 patients presented in ED with acute dyspnea. In the first hour after presentation we perform un pulmonary ultrasound exam and look after: sliding sign, collection, pulmonary parenchyma aspects (wet, atelectasis). The results were compared with SpO₂, PaO₂, pulmonary radiological results (bedside examination).

Results: 7 patients were diagnosed with pleural effusion using ultrasound exam, but radiological exam result was negative for collection. The ultrasound examination observed more parenchyma changes compared with radiological exam.

Conclusion: 1. ultrasound exam is more accurate to diagnose pleural effusion in case of bedside examination compared with radiological exam. 2. Ultrasonography permite a dynamic pulmonary exam.

Or-030

Imaging/Ultrasound II and Telemedicine

ASSESSMENT OF LEFT VENTRICULAR EJECTION FRACTION BY THE EMERGENCY PHYSICIAN VERSUS THE CARDIOLOGIST: A CONCORDANCE STUDY ABOUT 52 CASES.

Mehdi Ben Lassoued (1), Karima Taamallah (2), Makrem Baatour (1), Olfa Djebbi (1), Mekki Ben Salah (1), Imed Bennouri (1), Wafa Fehri (2), Habib Haouala (2), Khaled Lamine (1)

1. Emergency department, Military Hospital, Tunis, Tunisia

2. Cardiology department, Military Hospital, Tunis, Tunisia

Corresponding author: mehdi.benlassoued@gmail.com

Keywords: left ventricular ejection fraction, emergency physician, cardiologist

Introduction : Transthoracic echocardiographic examination (TTE) that is performed at the patient's bedside in emergency departments has several recognized important indications.

Objective: The purpose of our study is to evaluate the agreement of the estimates of left ventricular ejection fraction (LVEF) obtained by emergency physicians with the findings obtained by cardiologists in patients admitted to emergency departments.

Material and methods: This randomized prospective study was carried out in the emergency department of the military hospital of Tunis (Tunisia) over a period of 6 months going from September 2012 through February 2013, and involving patients aged > 16 years whose condition required an emergency TTE.

The patients included in the study had to undergo a double echocardiographic examination: An initial investigation that was performed in the emergency department by an emergency physician who had previously received a three-month training in Doppler echocardiography.

A subsequent echocardiographic examination that was performed by an echo-Doppler proficient cardiologist.

Left ventricular ejection fraction was evaluated by both readers using the following methods: the global visual estimation (GVE) method, Teicholtz's method in time movement mode (TM) and Simpson Biplan method (SB).

We excluded from the study patients with segmental kinetic disorders or with hearts out of alignment. The findings thus obtained were compared using the inter-class concordance coefficient of Cronbach's alpha.

Results : Fifty-two patients were involved in the study. Mean age was 55 + 11 years; sex-ratio was 7 males/4 females.

For the GVE method, the findings obtained by the emergency physician were similar to those obtained by the cardiologist: alpha = 0.72 (IC 95% = [0.68-0.78]; p<10⁻³).

The findings obtained by both operators by Teicholtz's method were as follows: alpha = 0.94 (IC 95% = [0.80-0.95]; p<10⁻³).

The concordance of the findings obtained by the emergency physician and of those obtained by the cardiologist for their assessment of LVEF by SB method was shown by $\alpha=0.91$ (IC95% = [0.80 – 0.98]; $p<10^{-3}$).

Conclusion : Global visual estimation of LVEF can be performed similarly by an emergency physician or by a cardiologist provided they are sufficiently experienced. The results yielded by both other methods (Teicholtz's method and SB method) were very similar indicating an excellent concordance independently of the degree of deterioration of the left ventricle contractility. Biplan Simpson's method is, however, a time-consuming procedure.

Or-031

Imaging/Ultrasound II and Telemedicine

ULTRASONOGRAPHY AS A FIRST CHOICE IMAGING METHOD IN THE DIAGNOSIS OF BILIOPANCREATIC EMERGENCIES

Adela Golea (1), Mihaiela Pasc (2), Catalin Ilea (2)

1. University of Medicine and Pharmacy, Emergency Discipline, Cluj Napoca, Romania

2. Emergency Department, County University Emergency Hospital, Cluj Napoca, Romania

Corresponding author: adela_golea@yahoo.com

Keywords: ultrasound, diagnosis, billiary

Purpose: the observational prospective study evaluates the role of ultrasonography as a first investigation of biliopancreatic emergency.

Material and Methods: Between 6th of December 2005 and 30th of December 2006 was evaluated 759 patients who were presented with acute biliopancreatic symptoms in the E.D. The ultrasonographic exam (US) was performed within the first 2 hours after admission.

Results: A significant prevalence of acute biliopancreatic pathology was noted after 20 years old (17.92%) that doubled among the 40 - 59 age group (34.26%). The overall prevalence in both genders, in urban areas, is significantly higher than in rural areas (χ^2 , $p < 0.000013$). In case of biliary colic presentation, 85.96% of the patients had gall stones. Complications of cholelithiasis were revealed in 56.22% of the subjects. The complication that was most frequently encountered was acute cholecystitis (34.66%). Ultrasonographic aspects that raised the suspicion of acute pancreatitis in 27% of the patients were size and structure changes. An increased risk for developing a complication of lithiasis (OR=19.1) that could be depicted by ultrasonography and that needed surgical treatment (OR=109.32) was discovered in patients with biliary colic signs at admission. An analysis of the value of ultrasonography in diagnosing gall stones proved to have 91.35 % sensitivity. The positive predictive value of the method was 93.87%. The analysis of ultrasonography's diagnostic value, using Likelihood ratio (positive of 2.03 and negative of 0.17), revealed a good power of the diagnostic method in the positive prediction of the diagnosed

pathologies, with a decreased risk of ultrasonographically underestimate the present changes.

Conclusions: 1. The patients enrolled in the studies were predominantly coming from urban areas, an aspect that raises the issue of risk factors or that of reduced access of the rural population to emergency services. 2. The statistical analysis of the performance demonstrated by the ultrasonographic exam proved it to be an easy and absolutely necessary method in assisting biliopancreatic emergencies: high sensitivity of gall stone diagnosis (91.35%); detection of immediate surgery necessity (OR=109.32- biliary colic subgroup).

Or-032

Imaging/Ultrasound II and Telemedicine

IMPORTANCE OF TRANSTHORACIC ECHOCARDIOGRAPHY PRACTISED IN EMERGENCY DEPARTMENTS BY THE EMERGENCY PHYSICIAN IN THE MANAGEMENT OF PATIENTS AND THEIR REFERRAL TO SPECIALISED DEPARTMENTS.

Mehdi Ben Lassoued (1), Houaida Mahfoudhi (2), Mounir Haggui (1), Makrem Baatour (1), Imed Bennouri (1), Olfa Djebbi (1), Mekki Ben Salah (1), Wafa Fehri (2), Habib Haouala (2), Khaled Lamine (1)

1. Emergency department, Military Hospital, Tunis, Tunisia

2. Cardiology department, Military Hospital, Tunis, Tunisia

Corresponding author: mehdi.benlassoued@gmail.com

Keywords: transthoracic echocardiography, emergency physician, management of patients

Objective: The aim of this study is to assess the importance of transthoracic echocardiographic examination (TTE) to the emergency physician in the management of patients admitted to emergency departments and in their subsequent referral to specialised centres.

Material and methods: This randomized prospective study was carried out in the emergency department of the military hospital of Tunis (Tunisia) over the period of 3 months going from January 2013 to March 2013 inclusive, involving patients presenting with acute chest pain or severe dyspnea or a state of non-traumatic shock. All patients had the benefit of echocardiography performed by a previously trained emergency physician in Doppler echocardiography. As evaluation criteria, we adopted in the first place the changes that had to be made after echocardiographic examination on the level of diagnosis, therapeutic approach and referral of patients to concerned departments. As a secondary criterion, we chose the agreement of the diagnosis made in the emergency department with the final diagnosis.

Results : We realised 64 transthoracic echocardiographic examinations. As a result the diagnosis had to be changed in 30% of cases, the therapeutic approach was corrected in 41% of cases and the patient had to be referred to a different department in 19% of cases.

The findings were in accordance with the final diagnosis made in hospital (based on the hospitalisation report) in 92% of inpatients. Thus, we obtained a sensitivity of 87%, a specificity of 95%, a positive predictive value of 97% and a negative predictive value of 87% of TTE against the initial diagnosis made.

Conclusion : Transthoracic echocardiography can be a useful and reliable tool in the hands of emergency physicians. It should be an integral part of the investigations procedures used in emergency departments, but should by no means replace a detailed physical examination and the other routine special investigations undertaken in emergency departments.

Or-033

Imaging/Ultrasound II and Telemedicine

PERFORMANCE OF A SIMPLIFIED WALL MOTION SCORE INDEX METHOD FOR EMERGENCY PHYSICIANS TO ASSESS LEFT VENTRICULAR EJECTION FRACTION : PROSPECTIVE STUDY ABOUT 65 CASES.

Mehdi Ben Lassoued (1), Karima Taamallah (2), Houaida Mahfoudhi (2), Nissaf Ben Alaya Bouafif (3), Imed Bennouri (1), Mekki Ben Salah (1), Olfa Djebbi (1), Makrem Baatour (1), Mounir Haggui (1), Wafa Fehri (2), Khaled Lamine (1), Habib Haouala (2)

1. Emergency department, Military Hospital, Tunis, Tunisia

2. Cardiology department, Military Hospital, Tunis, Tunisia

3. National Observatory of New and Emerging Diseases, Ministry of Public Health, Tunis, Tunisia

Corresponding author: mehdi.benlassoued@gmail.com

Keywords: emergency physicians, assessment, left ventricular ejection fraction

Objective : The purpose of our study is to evaluate a simple and rapid method for the assessment of left ventricular ejection fraction (LVEF), that can be used by emergency physicians, namely the Simplified Wall Motion Score index method (SWMSI). The score is derived from the 17 segment-model that is based on evaluation of regional contractility of the left ventricle obtained from a left short axis parasternal view and an apical view.

Method : This randomized prospective study was carried out in the cardiology department of the military hospital of Tunis over a period of one month involving patients aged > 16 years who had to undergo a transthoracic echocardiography examination (TTE). The patients had a double Doppler echocardiography examinations.

- An initial echocardiographic investigation was done by an emergency physician who had received a three-month training in Doppler echocardiography. This examination

comprised an estimate of LVEF by the SWMSI method following by a global visual estimation (GVE)

- The second echocardiographic examination was performed by an echo-proficient reader. This investigation comprised an estimate of LVEF by successively SWMSI, GVE and by the biplane Simpson's method BS which constituted our reference method. The concordance of SWMSI estimate with the GVE and BS estimates were calculated in both readers by the inter-class concordance coefficient of Cronbach's alpha.

Results : Sixty-five patients were involved in the study. Mean age was 56 + 14 years; sex ratio was 9 males/4 females. The patients were included independently of the degree of alteration of the left ventricle contractility.

- For the emergency physician, the concordance of SWMSI obtained from a left short axis parasternal view and by the biplane simpson's method was 0,74 (IC 95% = [0,70

- 0,78]; p<10-3) and the concordance of SWMSI obtained from an apical view and by

the biplane Simpson's method was 0,72 (IC 95% = [0,70 - 0,75]; p<10-3) and the

concordance of GVE and that obtained by the biplane Simpson's method were 0,95

(IC 95% = [0,50 - 0,59]; p<10-3).

- For the cardiologist, the concordance of SWMSI obtained from a left short axis

parasternal view and that from an apical view and the concordance of GVE and that

obtained by the biplane Simpson's method were 0,95 (IC 95% = [0,92 - 0,98]; p<10-

3).

Conclusion : Assessment of LVEF was better performed among emergency physicians with the SWMSI method than with the GVE method independently of the degree of alteration of the left ventricle contractility. The semi-quantitative method should be adopted by emergency physicians for LVEF estimated. Nevertheless, a minimum of three-month training in Doppler echocardiography would be necessary.

Or-034

Imaging/Ultrasound II and Telemedicine

TRANSTHORACIC ECHOCARDIOGRAPHY PERFORMED AT THE PATIENT'S BEDSIDE BY THE EMERGENCY PHYSICIAN VERSUS THE CARDIOLOGIST: A CONCORDANCE STUDY ABOUT 44 CASES.

Mehdi Ben Lassoued (1), Houaida Mahfoudhi (2), Imed Bennouri (1), Mekki Ben Salah (1), Makrem

Baatour (1), Olfa Djebbi (1), Mounir Haggui (1), Wafa Fehri (2), Habib Haouala (2), Khaled Lamine (1)

1. Emergency department, Military Hospital, Tunis, Tunisia
2. Cardiology department, Military Hospital, Tunis, Tunisia

Corresponding author: mehdi.benlassoued@gmail.com

Keywords: Transthoracic echocardiography, emergency physician, cardiologist

Introduction: Transthoracic echocardiography (TTE) is practised in emergency departments by emergency physicians at the patient's bedside as a routine special investigation procedure following a detailed physical examination. The purpose of our study is to evaluate the performance of TTE in emergency departments by emergency physicians by comparing the finding obtained to those given by an echoDoppler proficient cardiologist.

Material and methods: This randomised prospective study was carried out in the emergency department of the military hospital of Tunis (Tunisia) during the period going from October 2012 to December 2012 inclusive. It included all patients aged > 16 years in whom there was an urgent need to practice a TTE. The patients in the study had to undergo a double echocardiographic examination: an initial echocardiographic investigation carried out by an emergency physician who had previously received a three-month training in Doppler echocardiography, followed by a subsequent investigation performed by an echo-Doppler proficient cardiologist.

The concordance of the findings obtained by both readers was evaluated by Kappa concordance test. The evaluation considered the global visual estimation of the left ventricular ejection fraction (LVEF), the presence or absence of pericardial effusion (independently of the site), and the diameter and compliance of the inferior vena cava (IVC).

Results: Forty-four patients were involved in the study. Mean age was 52 + 13 years, sex ratio 5 males/7 females.

The concordance of the findings obtained by the emergency physician and the cardiologist for the visual estimation of the LVEF was Kappa = 0.82 [95% IC 0.63-1] with an agreement = 0.90 [95% IC 0.74-0.99].

The concordance for measurement of the diameter of the IVC was Kappa = 0.95 [95% IC 0.63-1] with an agreement = 0.95 [95 % IC 0.64-0.99] and for assessment of its compliance it was Kappa=1 with an agreement = 1.

The concordance of the findings obtained for the diagnosis of pericardial effusion was Kappa=0.86 [95% IC 0.71-1] with an agreement = 0.92 [95% IC 0.64-0.99] and the concordance for the detection of echocardiographic signs of compressive effusion was Kappa = 1 with an agreement =1.

Conclusion: The concordance of the findings obtained by both operators was excellent. Emergency physicians should then be encouraged to practise TTE at the patient's bedside. A prior training of 3 months in Doppler echocardiography is nevertheless necessary.

Or-035

Imaging/Ultrasound II and Telemedicine

LEARNING CURVE OF TRANSCRANIAL DOPPLER USED BY EMERGENCY PHYSICIANS

Mélanie Corre (2), David Sapir (2), François Xavier Laborne (2), Arnaud Gauthier (3), Eric Cesareo (3), Nicolas Briole (2), Karim Tazarourte (1)

1. Emergency Departement, Hopital Melun, Melun, France
2. Emergency department, Hopital Sud Francilien, Evry, France
3. Emergency department, Hopital Melun, Melun, France

Corresponding author: karim.tazarourte@ch-melun.fr

Keywords: transcranial doppler, learning curve, emergency medicine

Introduction: The aim of the traumatic brain injury management is to prevent cerebral ischemic lesion. The first hours are important, but without intracranial pressure device, it's impossible to estimate the cerebral pressure perfusion (CPP). The transcranial Doppler (TCD) has been described like tool for indirectly evaluate the cerebral blood flow and can permit an early goal-therapy (1, 2). However, the learning curve of TCD hasn't been described prior.

Material and method: After a quick description of the tool, twenty-two young doctors perform each one, ten TCD in voluntary and healthy colleague. Each TCD include a bilateral assessment of systolic and diastolic velocity and pulsatility index (PI) measure. Three separate delays (minutes) has been considering: First, the spending time for the detection of middle cerebral artery by ultrasonography, second, the visualization of velocity value and third the value of PI. The TCD used is an M-Turbo (Sonosite®). Friedman test has been used for compared the delays. P< 0,005 has been considering.

Results: After six bilateral measures, the young doctor was capable to obtain velocity and PI measure less 1, 35 minutes for each side. Figure 1.

Conclusion : TCD is a easy tool for assess velocity and PI MCA. The learning was most easay than other ultrasonography device. Further studies must do explored with a large cohort, our results.

Conclusion : TCD is a easy tool for assess velocity and PI MCA. The learning was most easay than other ultrasonography device. Further studies must do explored with a large cohort, our results.

Or-037

Shock, and Respiratory

PREMATURE DEATH AFTER HOSPITAL ADMISSION

Alice Hutin (1), Aline Santin (1), Bertrand Renaud (1)

1. Emergency Department, University Hospital Cochin and Hôtel-Dieu, Paris, France

Corresponding author: bertrand.renaud@cch.aphp.fr

Keywords: premature death, expected/unexpected death, intensive care

Introduction: Deaths occurring within 2 days of presentation are mostly related to patients' conditions and complaints at initial emergency department (ED) visit. Until now, few reports have been reported concerning the occurrence of premature deaths after hospital admission. A better knowledge of those potential lethal underlying conditions would certainly allow to improve ED screening procedure and patient care.

Objective: To identify early mortality risk factors in patients hospitalized after ED presentation.

Material and methods:

We conducted a retrospective study of inpatients that initially presented to our university affiliated ED. We defined early mortality as death occurring within 48 hours of presentation to the ED. Data collected were: age, sex, comorbid conditions, clinical signs and severity signs at presentation to the ED, hospital disposition following ED visit (ED hospitalization unit, medical department, intensive care unit), and main cause of death. We compared patients according to whether or not the occurrence of death was expected at presentation to the ED. Quantitative characteristics were described using mean and standard deviation while for categorical characteristics we reported the number of cases and corresponding proportion. We compared patient characteristics between the 2 study groups using Student t test or Fisher exact test and Pearson's chi 2 test when appropriate.

Results:

50 patients died over the first 3 month-study period; among them, occurrence of early death was expected in 25 patients (group A); for remaining patients, occurrence of death was unexpected (group B). Overall, mean population age was high, and did not differ between both study groups (83 vs 80 years, $p=0.23$), neither did sex ratio. Similarly, main comorbid conditions were similar, including neoplastic disease 12(48%) patients in group A vs 9 (36%) patients in group B, $p=0.39$). In spite of a non-significant difference, neurological status was more deteriorated in group A (11 vs 6 patients) however results were not significant. Respiratory and circulatory failure were similarly prevalent in both study groups. A critical care physician advice was sought in 11 (44%) patients in group A versus 15 (60%) patients in group B ($p=0.26$). Hospital disposition decision indicated that a majority of 84% of the patients for whom death was expected within 48h (group A) died at the ED hospitalization unit while 40% in group B. The main cause of death did not significantly differ between the 2 groups, but severe sepsis (36% of patients in group A and 44% in group B) was the main underlying cause of death.

Discussion:

Our findings suggest that there is little difference between patients for whom death is expected upon arrival and for whom death is not initially expected. Interestingly, a majority of patients (40%) died of septic causes. Surprisingly, most patients with unexpected death were not admitted to the ICU. This fact might reveal inappropriate screening of severity or suboptimal treatment decision for patients presenting with life-threatening conditions. Otherwise, a vast majority of patients in group B were maintained into the ED hospitalization unit. Of note, ED

hospitalization unit is a site of care which seems quite inappropriate to offer high quality standard end of life care. Since, the number of patients of our study is still limited our findings deserve to be completed by additional observations collected on larger period of time and from other hospitals.

Conclusion:

Unexpected early deaths following patient's presentation to the ED is a common event. Our preliminary findings suggest that patients who died within 48 hours of their admission do not dramatically differ whether their death was expected or not. The large proportion of patients with unexpected death that were not admitted to the ICU suggests that improvements of care during early hospital stay are possible, particularly regarding severe sepsis which was the main underlying cause of early death. In contrast, many patients whose death was expected died in the ED hospitalization unit, this suggests inadequate use or offer of palliative care.

Or-038

Shock, and Respiratory

ACCURACY OF INFERIOR VENA CAVA ULTRASONOGRAPHY IN DETERMINING CENTRAL VENOUS PRESSURE

Akram Zolfaghari Sadrabad (2), Hojjat Derakhshanfar (1), Reza Farahmand Rad (2), Hamid Kariman (1)

1. Emergency department, Imam Hosseien Hospital Research Center, tehran, Iran, Islamic Republic of

2. Emergency department, shahid sadooghi hospital, tehran, Iran, Islamic Republic of

Corresponding author: azolfaghari88@yahoo.com

Keywords: inferior vena cava, ultrasonography, central venous pressure

Introduction: Clinical ultrasonography may be provides a quick and non-invasive hemodynamic monitoring method of assessing volume status. With this study we have aimed to analyze comparatively the accuracy of inferior vena cava (IVC) ultrasonography and central venous catheterization in determine central venous pressure (CVP). an observational, diagnostic and comparative study
Method and materials: The patients were undergoing central venous catheterization, have been enrolled in an observational, diagnostic and comparative study. IVC diameters were measured by 2- dimensional bedside ultrasonography during 1 respiratory cycle and the caval index was calculated.

The correlation of CVP and caval index was calculated. In addition, the sensitivity, specificity, positive and negative predictive values of caval index was estimated.

Results: All 114 patients were classified in three groups: 59% of patients had $CVP < 8$, 19% had $8 \leq CVP \leq 12$ and 22% had $CVP > 12$. The correlation between caval index and CVP was -0.75. The results of this study showed that the caval index $\geq 50\%$ can predict the $CVP < 8$ with 91% sensitivity, 94% specificity, 94% positive predictive value, and 89.5% negative predictive value. In addition, the caval index $\leq 28\%$ can predict a $CVP > 12$ with 96% sensitivity, 94.5% specificity, 83% positive predictive value and 98.8% negative predictive value.

Discussion: Our results in this study showed a significant correlation between caval index $\geq 50\%$ and $CVP < 8$ or caval index $\leq 28\%$ and $CVP > 12$.

Conclusion: Ultrasound assessment of IVC dimensions may provide a quick and non-invasive hemodynamic monitoring method of assessing volume status and can be performed by trained operators or medical students.

Or-039

Shock, and Respiratory

POTASSIUM CHANNEL VOLTAGE DEPENDENT (PCVD) INHIBITION COMBINED WITH BLOCKADE OF NO-SYNTASE (NOS) BLOCKS ANAPHYLACTIC SHOCK (AC) AND IMPROVE SURVIVAL IN A MODEL OF WISTAR RAT SENSITISED TO OVALBUMIN (OVA).

Sylvia Giese (1), Dhanasekaran Subramanian (2), Abderrahim Nemmar (3), Moufida Bellou (4), Abdelouahab Bellou (1)

1. Emergency Department, University Hospital, Faculty of Medicine, Rennes, France

2. Pharmacology, Faculty of Medicine and Health Science, Al Ain, United Arab Emirates

3. Physiology, Faculty of Medicine and Health Science, Al Ain, United Arab Emirates

4. Nephrology, Clinique Gentilly, Nancy, French Southern Territories - TF

Corresponding author: abdel.bellou@voila.fr

Keywords: Anaphylactic shock, Rat, Potassium channels

Introduction: Mechanisms of AC are still unclear. Vasodilation induced after the mast cells activation releasing mediators is involved in the onset of shock. The aim of this experiment study was to demonstrate that the PCVD blockade combined with the inhibition of NOS blocks the occurrence of AC and improve survival.

Method: Wistar rats (n=6 per group) were sensitised to OVA (1 mg, subcutaneous) at day 1 and day 14 and randomised into: naive group (non allergic rats), control group (allergic rats), group of rats treated by glybenclamide (blocker of ATP-dependent potassium channel, 40mg/kg), group treated by 4-aminopyridine (4 AMP, blocker of PCVD, 1mg/kg), group treated by LNAME (inhibitor of NOS, 100mg/kg), group treated by combination of potassium

channel blockers and inhibition of NOS. At day 21, rats were anaesthetised with pentobarbital intubated via tracheotomy and ventilated. Monitoring of mean blood pressure (MAP) was done by a carotid catheter (every minute during one hour). Drugs were administered by bolus in jugular vein 1 minute after OVA injection. Three factors ANOVA (group, time, pre and post treatment) was used to find significant difference ($p < 0.05$).

Results:

MAP decreased brutally after OVA iv bolus administration in allergic rats from the first minute (118.3 ± 4.5 mmHg) ($p = 0.0001$). None control rats were alive at 60 minutes. MAP was unchanged in non allergic rats. LNAME and potassium channel blockers alone did not block induction of shock. Combination of 4 AMP and LNAME blocked induction of shock and MAP was at the same level than non allergic rats. The difference between treated rats and controls was significant ($p = 0.0001$). Survival time was 23 minutes in allergic rats and 60 minutes in LNAME + 4 AMP treated rats ($p = 0.0001$).

Conclusion: The results of this study demonstrate that blockade of NO production and PCVD prevents AC and improves survival. The pathophysiology of vasodilatation-induced by allergen must be revisited and new therapeutic approach should be proposed.

Or-040

Shock, and Respiratory

PROGNOSTIC VALUE OF THE SHOCK INDEX TO PREDICT TYPE OF SERVICE OUTCOME OF PATIENTS IN A TEACHING HOSPITAL EMERGENCY DEPARTMENT

Nicolas Segal, Jennifer Truchot, Roxana Stavila, Cecile Durand-Stocco, Anthony Chauvin, Nora Ouled, Patrick Plaisance

Emergency Department, Hôpital Lariboisière, Paris, France

Corresponding author: dr.nicolas.segal@gmail.com

Keywords: shock index, triage, prognosis

Introduction

Blood pressure and heart rate are classical parameters used to do triage when patients arrive to an emergency department. However, those parameters are sometime deficient to detect shock. To facilitate triage, the shock index was developed. The SI is defined as the ratio between systolic blood pressure and heart rate ($SI = SBP/HR$). The physiological value of the SI found in most studies is between 0.5 and 0.9. The aim of this study is to see if the SI can be used to predict the type of service the patient will go after his visit to the emergency department.

Material and Methods

This single center study was realised in a Teaching Hospital (Lariboisière Hospital, Paris, France) between January the 1st and February the 28th 2013. Approximately 100 patients were included in each of the 4 defined groups, according the department where the patients went when

they leave the emergency department: Home, Medical ward, Surgery, Intensive Care Unit (ICU). Ages (years), sex, SBP (mmHg), HR (BPM) were anonymously recorded. No approval by an ethic committee was necessary. Statistical comparisons were performed by Kolmogorov-Smirnov test, Kruskal Wallis and Man Whitney Rank test. Results are reported as median (25, 75 percentile).

Results

407 patients were included, median age was 52 (35, 71) with 57% of men. No statistical difference was found between HR, SBP and SI when you compare the 4 groups. However, by performing a subgroup analysis separating the surgical and medical ICU versus neurovascular and cardiac ICU the Kruskal Wallis comparing all groups found a difference ($p < 0.001$). SI was 0.75 (0.67, 1.05) for surgical and medical ICU, 0.6 (0.48, 0.69) for neurovascular and cardiac ICU, 0.67 (0.56, 0.74) for surgery, 0.67 (0.52, 0.79) for medicine, 0.62 (0.71, 0.52) for home respectively. The Man Whitney tests comparing the SI for the surgical and medical ICU group versus the other groups was higher ($p < 0.001$ versus home, neurovascular and cardiac ICU or all combine, $p = 0.001$ versus surgery, $p = 0.003$ versus medicine). The SI for neurovascular and cardiac ICU was lower than the one for surgery or medicine. No difference was found for the SI between medicine versus surgery or home, neurovascular and cardiac ICU versus home. SBP was 122 (102, 140) for surgical and medical ICU, 142 (122, 176) for neurovascular and cardiac ICU, 132 (120, 147) for surgery, 117 (137, 150) for medicine, 0.62 (136 (120, 148) for home respectively ($p = 0.006$). HR was 96 (77, 115) for surgical and medical ICU, 88 (72, 97) for neurovascular and cardiac ICU, 88 (77, 98) for surgery, 88 (74, 102) for medicine, 81 (73, 95) for home respectively ($p = 0.006$).

Discussion

Our results show that SI can help to know where the patient will go after leaving the emergency department. It can help to know which patient will go to medical or a surgical ICU. However, it cannot determine if patient will go to cardiological ICU, neurovascular ICU, a medical ward, surgery or home. This results is consistent with the fact that patient in shock should go to services able of taking care of the more instable patients. Furthermore cardiological ICU takes mostly patient with ST segment elevation myocardial infarction (STEMI), non STEMI and arrhythmia, while neurovascular ICU take strokes. Usually those types of patient, even if they have sever conditions, are not in shock.

This is to our knowledge the first study using the SI to predict the outcome department of a patient after the emergency department. The shock index has been studied mainly in specific contexts such as trauma, acute coronary syndrome and, septic shock.

Based on the SI, an early warning of the surgical and medical ICU can be done for patient whom just arrived to the emergency department improving the flow of patients in the emergency room.

This study has several limits. It is a single center study, with a relatively small number of patients. It may have a bias of selection.

Conclusion

The shock index, from the emergency department reception, is capable of identify patients who will be hospitalized in a medical or surgical Intensive Care Unit.

Or-041

Shock, and Respiratory

TYPE OF FLUID AND SHOCK REVERSAL IN AN PIGLET MODEL OF CONTROLLED HEMORRHAGE.

Lucie Goret (1), Jean-yves Lefrant (2), Benjamin Louart (2), Nicolas Molinari (3), Laurent Muller (2), Eva Nouvellon (4), Claire Roger (5)

1. Laboratory animal research unit, Nîmes University Hospital, Nîmes, France
2. Department of Anesthesiology, Emergency and Critical Care Medicine, Nîmes University Hospital, Nîmes, France
3. Department of Biostatistics, montpellier university hospital, montpellier, France
4. Haematology Laboratory, Nîmes University Hospital, Nîmes, France
5. Department of Anesthesiology, Emergency and Critical Care Medicine, Nîmes University Hospital, Nîmes, France

Corresponding author: bouart@yahoo.fr

Keywords: hemorrhage, shock reversal, animal model

Objective: The optimal fluid resuscitation for the early treatment of severely bleeding patients remains highly debated. The objective of this experimental study was to compare the rapidity of shock reversal with lactated Ringer (LR) or hydroxyethyl starch (HES) 130/0.4 at the early phase of controlled hemorrhagic shock. In order to assess the influence of vascular permeability in this model, we measured plasma vascular endothelial growth factor (VEGF) levels during the experiment.

Design: Experimental animal investigation.

Setting: University-affiliated research laboratory, EA 2992, Nîmes, France.

Subjects: Thirty-six anesthetized and mechanically ventilated piglets.

Interventions: Piglets were bled (30 ml.kg⁻¹) to hold mean arterial blood pressure at 40 mmHg over 30 minutes and were resuscitated in two randomized groups: LR (n=14) or HES (n=14) at 1 ml.kg⁻¹.min⁻¹ until MAP reached its baseline value $\pm 10\%$. MAP was maintained at its baseline value for one hour with the previously allocated fluid. Two additional groups were studied: blood group (n=4) and control group (n=4). Time and fluid volume necessary to restore the baseline MAP value were measured. Hemodynamics, biological variables, plasma VEGF concentrations were monitored at baseline, after 30 min of hemorrhage and after 60 min of fluid resuscitation.

Measurements and Main Results: Time to restore the baseline MAP value $\pm 10\%$ was significantly lower in the HES group (11 ± 4 vs 41 ± 25 min, $p < 0.001$). During the initial resuscitation phase, the infused volume was 279 ± 119 ml in HES group vs 1011 ± 561 ml in LR group ($p < 0.0001$). During the stabilization phase, the infused volume

was 119 ± 124 ml HES vs 541 ± 506 ml LR. Biological data and plasma VEGF levels were similar between groups. Conclusion: HES was 4-fold faster than LR to restore MAP at the early phase of controlled hemorrhagic shock. At this phase, fluid efficacy is not affected by increased vascular permeability.

Or-042

Shock, and Respiratory

EFFECT OF DIFFERENT PATIENT POSITIONS ON NON-INVASIVE HAEMODYNAMIC MEASUREMENT

Pui-Ling Cheung (1), Cangel Pui-Yee Chan (2), Mandy Man Tse (2), Nandini Agarwal (2), Sangeeta Narain (2), Stewart Siu-Wa Chan (2), Brendan E. Smith (3), Colin A. Graham (2), Timothy H. Rainer (2)

1. Accident and Emergency Department, Princess Margaret Hospital, Hong Kong SAR

2. Accident and Emergency Medicine Academic Unit, Prince of Wales Hospital, The Chinese University of Hong Kong, Hong Kong SAR

3. School of Biomedical Science, Charles Sturt University, Bathurst, New South Wales, Australia. Intensive Care Unit, Bathurst Base Hospital, Bathurst, New South Wales, Australia

Corresponding author: polly.plcheung@yahoo.com.hk

Keywords: Haemodynamic, Patient positions, Ultrasonic

Objective: Early recognition of shock and evaluation of fluid resuscitation are very important in emergency settings. Ultrasonic Cardiac Output Monitor (USCOM) is a non-invasive measurement of haemodynamic parameters. Proper alignment of ultrasonic beam to aortic or pulmonary outflow tracts is the key to acquire optimal Doppler signals. This study aimed to investigate the effects of different patient positions on USCOM measurements.

Design: This was a prospective observational crossover study.

Method: Chinese adults aged 18-60 were recruited. Using aortic and pulmonary approaches, two operators performed USCOM measurements on each subjects in supine, sitting, semirecumbent, passive leg raising (PLR) 20° and PLR 60° positions. All Doppler profile flow images were assessed by two independent assessors using Fremantle criteria and PWH criteria. Time required to obtain optimal Doppler signal was also recorded.

Results: A total of 60 subjects were recruited. Aortic stroke volume indexes (SVIs) and cardiac indexes (CIs) in sitting and semirecumbent positions were lower than those in other positions while pulmonary CIs were comparable to those in supine position. In sitting position, aortic Doppler signal scores were lower than those in other positions and time to obtain pulmonary Doppler signals was also prolonged. Using pulmonary approach, the signal quality and time to obtain optimal Doppler signals in semirecumbent position were similar to those in other positions. Time required to obtain optimal Doppler signals using pulmonary approach was longer than that using aortic approach among all positions.

Conclusion: Aortic approach requires less time and is therefore recommended for USCOM measurements. However, it is not suggested to use aortic approach in both sitting and semirecumbent positions as the measurements are not sufficiently reliable. For patients unable to maintain supine, operators can perform USCOM measurements using pulmonary approach in semirecumbent position.

Or-043

Shock, and Respiratory

IMPORTANCE OF THE LEFT VENTRICULAR EJECTION FRACTION AND OF SUBAORTIC INTEGRAL TIME VELOCITY ASSESSMENT IN THE MANAGEMENT OF HEMODYNAMIC SHOCK IN EMERGENCY PATIENTS

Mehdi Ben Lassoued (1), Karima Taamallah (2), Olfa Djebbi (1), Makrem Baatour (1), Mounir Haggui (1), Imed Bennouri (1), Mekki Ben Salah (1), Wafa Fehri (2), Habib Haouala (2), Khaled Lamine (1)

1. Emergency department, Military Hospital, Tunis, Tunisia

2. Cardiology department, Military Hospital, Tunis, Tunisia

Corresponding author: mehdi.benlassoued@gmail.com

Keywords: left ventricular ejection fraction, subaortic integral time velocity, hemodynamic shock

Introduction: Clinical approach is not often sufficient to determine the hemodynamic etiology of shock treated in emergency departments. Transthoracic echocardiography (TTE) in nowadays more and more used by emergency physicians to determine the hemodynamic origin of shock in patients rushed to emergency departments.

Objective : To assess the importance of a simplified approach of hemodynamic assessment of patients in shock by TTE practised by an emergency physician to evaluate semi-quantitatively the left ventricular ejection fraction (LVEF) and to measure the subaortic integral time velocity (ITV).

Material and methods: This prospective study was carried out in the emergency department of the military hospital of Tunis (Tunisia) over the period going from September 2012 to February 2013 inclusive. It included all patients presenting with systolic blood pressure (bp) < 90 mmHg or mean bp < 60 mmHg and/or peripheral circulatory insufficiency associated with organ dysfunction. All patients underwent TTE practised by a previously trained emergency physician in doppler echocardiography.

Clinical diagnosis and initial treatment were compared to the findings provided by TTE concerning the following criteria : echogenicity of patient, LVEF assessed by a global visual estimation, subaortic ITV measurement by planimetry of aortic flow using pulsed-reflected doppler echography (doppler sample just above the sigmoid valves of aorta) and existence of pericardial effusion.

Results: The study involved 15 patients aged 65.8 ± 10 years on average. Seventy per cent of them were males. Of the patients included in the study, 40% were hypertensives,

45% were diabetics, and 30% were suffering from atrial fibrillation.

Echogenicity was poor in 25% of cases. LVEF was assessable in 90% of cases and ITV was measurable in 85% of cases. Pericardial effusion was noted in 25% of cases with signs of compression in one of them. In 30% of cases the findings provided by TTE led to alterations to the etiologic diagnosis of shock and to the therapeutic approach in 20% of cases. Based on the above mentioned criteria, positive diagnosis was not, however, possible in 5% of cases. Note that 45% of TTE were performed prior to treatment.

Conclusion: Left ventricular ejection fraction and subaortic integral time velocity are useful for a hemodynamic assessment of patients in shock in emergency departments. They may, in some cases, make it possible to rectify a diagnosis but they are not sufficient in complex hemodynamic situations.

Or-044

Shock, and Respiratory

PREDICTORS OF BIPHASIC ANAPHYLAXIS IN EMERGENCY DEPARTMENT PATIENTS

Venkatesh R Bellamkonda (1), Maria Fernanda Bellolio Avaria (1), Ronna Campbell (2), Erik Hess (3), Sangil Lee (1), David Nestler (1)

1. Emergency medicine, Mayo clinic, Rochester, United States
2. Emergency medicine, Mayo clinic, Rochester, United States
3. Emergency department, Mayo clinic, Rochester, United States

Corresponding author: Lee.Sangil@mayo.edu

Keywords: anaphylaxis, biphasic reaction, steroid

Background: Biphasic anaphylactic reactions are uncommon and unpredictable. A biphasic reaction is the recurrence of anaphylaxis symptoms within 72 hours of the initial anaphylactic event, without re-exposure to the trigger. Risk factors for biphasic reactions are poorly understood.

Objective: Our aim was to identify predictors of biphasic anaphylactic reactions in Emergency Department (ED) patients.

Methods: ED patients who met anaphylaxis diagnostic criteria from April 2008 to July 2011 at an academic medical center with 73,000 annual patient visits were consecutively included. We collected data on patient characteristics, suspected triggers, signs and symptoms, ED management, and disposition. Univariate analyses were performed to estimate the association between candidate predictor variables and biphasic reactions. We report associations as odds ratios (ORs) and corresponding 95% CIs with p-values.

Results: Among 541 patients with anaphylaxis, median age (IQR) was 34.6 (18-52) and 320 (59%) were female. Twenty-one (3.9%) patients had biphasic reactions. Median time between the resolution of initial symptoms and onset of the biphasic reaction was 6 hours (range 1-72 hours). Biphasic reactions were associated with a history of prior

anaphylaxis (OR 2.6, 95%CI 1.1-6.4; p=.029), and symptoms of diarrhea (OR 4.5, 95%CI 1.4-14; p=.024) and wheezing (OR 2.6, 95%CI 1.4-8.9; p=.029). Biphasic reactions were not significantly associated with the allergic trigger, use of steroids, or use of epinephrine as part of the initial management.

Conclusions: Patients with prior anaphylaxis presenting symptoms of wheezing or diarrhea may be at increased risk for a biphasic reaction. There were no significant associations between the allergic trigger and treatment with steroids or epinephrine. To our knowledge, this is the largest study of ED patients with biphasic anaphylactic reactions. Further studies are needed to continue to elucidate predictors of these reactions.

Or-045

Shock, and Respiratory

CAN TRANSCUTANEOUS MEASUREMENT OF CARBON DIOXIDE PRESSURE BE A SURROGATE OF BLOOD GAS SAMPLES IN EMERGENCY ROOM?

Nacera Baarir (1), Sandrine Dautheville (1), Léa Garcia (1), Yann Kieffer (1), Lynda Mzabi (1), Patrick Ray (1), Fayrouz Renai (1), Edwin Rouff (1)

1. Emergency department, Hôpital Tenon, Paris, France

Corresponding author: lea.garcia7@wanadoo.fr

Keywords: transcutaneous carbon dioxide pressure, dyspnea, emergency room

Background: Monitoring of carbon dioxide pressure is a major concern for emergency physicians, dealing with dyspneic patients. Transcutaneous carbon dioxide pressure could be a non invasive alternative to blood gas samples, as suggested in previous studies. Our study evaluated the reliability of this method in emergency room.

Patients and methods:

We prospectively included patients presenting with acute dyspnea in the emergency room, breathing spontaneously or with NIV. We simultaneously performed blood gas samples and measurement of transcutaneous carbon dioxide pressure using the TCM 4 CombiM (Radiometer, Villeurbanne, France). Agreement between PaCO₂ and PtcCO₂ was assessed using the Bland Altman method.

Results: Fifty-three patients were included (mean age 67 years, 53% of men) and 51 measurements of PtcCO₂ (of the 58 realized) were analyzed. Sixteen patients (30%) had pneumoniae; 13 (25%) had acute heart failure; 12 (23%) had exacerbation of chronic obstructive pulmonary disease and 8 (15%) had acute asthma. Mean PaCO₂ was 50.6 mmHg (range 27-103). Mean difference between PaCO₂ and PtcCO₂ was 4.2 mmHg (range -47 to 48) with 95% limits of agreement of - 17.4 mmHg to 25.8 mmHg. Only 49 % of measurement differences were within 5 mmHg.

Conclusion: In our study, transcutaneous carbon dioxide pressure could not replace PaCO₂.

Figure: Bland- Altman representation of concordance between PaCO₂ and PtcCO₂

Or-046

Neurology 1

METOCLOPRAMIDE VERSUS SUMATRIPTAN FOR EMERGENCY DEPARTMENT TREATMENT OF MIGRAINE HEADACHE.

Reza Aziz Khani, Keihan Golshani, Babak Masoumi, Saeed Talebi

Emergency Department, Isfahan University of Medical Science (IUMS), Islamic Republic of Iran

Corresponding author: bamasoumi@yahoo.com

Keywords: Migraine headache, Metoclopramide, Sumatriptan

Abstract:

Background: There are different options to manage benign headache in emergency department. The costs, side effects and efficacies of these drugs are significantly different. The aim of this study was to compare IV metoclopramide with SC sumatriptan to relieve pain in emergency department.

Material and methods: In this randomized, double-blinded clinical trial, after providing informed consent, patients presenting to the emergency department with acute benign headache received 20 mg of metoclopramide intravenously or 6 mg of sumatriptan subcutaneously. Pain intensity was assessed with 10-cm visual analog scale at baseline and 60 minutes after treatment. The primary outcome was change in pain intensity between these two measures. The data were entered SPSS (ver.19) and student's t-test, paired t-test, chi-square test and ANCOVA were used for data analyzing.

Results: One hundred twenty-four subjects entered the trial and data were completed for all of them. Baseline pain score and age means were not similar for metoclopramide and sumatriptan groups (6.7 versus 6.1 cm for pain score and 34.9 versus 26.8 y for age). Paired t-test showed the statistically significant pain reductions in both groups one hour after treatment: in metoclopramide group mean of pain score decreased from 6.7 to .6 cm ($p=.000$) and in sumatriptan from 6.1 to 1.1 ($p=.000$). Comparing these two groups showed more pain reduction in metoclopramide group with .55 (95% CI .25 to .79 cm) mean difference and this difference was statistically significant ($p=.000$).

Conclusion: Intravenous metoclopramide is superior to subcutaneous sumatriptan in the treatment of acute migraine in emergency department.

Or-047

Neurology 1

STROKE CODE. INTRAVENOUS THROMBOLYSIS IN ISCHEMIC STROKE. EXPERIENCE AND RESULTS

Domingo Ribas Seguí (1), Albert Moreno Destruels (1), Jesús Galvez Mora (1), M^a Carmen Boqué Oliva

(1), Anna Pellise Guinjoan (2), Francesc Xavier Avilés Jurado (3), Xavier Ustrell (2)

1. Emergency department, Hospital Joan XXIII, Tarragona, Spain

2. Neurology department, Hospital Joan XXIII, Tarragona, Spain

3. Otorhinolaryngology department, Hospital Joan XXIII, Tarragona, Spain

Corresponding author: minguribas@gmail.com

Keywords: stroke code, thrombolysis, Rankin scale

Objectives: To analyze the performance and clinical outcomes of the implementation of a stroke code protocol in our field.

Method:

Descriptive, observational study where are accounted all patients treated with intravenous thrombolysis with alteplase (rt-PA) over a five years period and analyze the stroke code circuit performance, response time, clinical, neurological (NIHSS) and functional status (modified Rankin scale (mRS)) after treatment and three months later.

Results:

During the 2009-2013 period received treatment 152 patients, 59.74% male and 40.26% female, with a mean age of 67.79 years (SD 12.45). 65.8% were activated by the Emergency Medical Services.

At their arrival the average baseline NIHSS was 13.17 (SD 5.75) with a width range (WR) from 4 to 28. The mean door-to-needle time was 63.28 minutes (SD 25.76).

After 24 hours of treatment, the NIHSS was 8.32 (SD 7.3; WR 0-24). Our patients, after three months, had a modified Rankin scale: 51.9% mRS = <3 (25% mRS 2-3 and 26.9% mRS 0-1).

There is a statistical difference between lower score of NIHSS at the arrival of the patient to the emergency room and the score at 24 hours and 3 months ($p<0.001$)

Conclusions:

Patients receiving alteplase have a functional improvement (NIHSS, mRS) at 24 hours and 3 months later.

Observed door-to-needle time is similar as seen in literature.

We should treat patients with better clinical and functional status as to obtain better results in NIHSS and mRS scores at three months and it's important to decrease door-to-needle time.

Or-048

Neurology 1

IMPACT OF EMERGENCY MEDICAL SERVICE SYSTEM ON FIBRINOLYSIS AMONG PATIENTS WITH ISCHEMIC STROKE IN THE NORTHERN FRENCH ALPS

Cecile Vallot (1), Cecile Ricard (2), Christine Tinchant (1), Olivier Detante (3), Francois Loizzo (4), Sebastien Marcel (5), Thierry Roupioz (1), Wilfried Vadot (6), Loic Belle (2), Francois-xavier Ageron (2)

1. Emergency Department, Centre Hospitalier de la Région d'Annecy, Annecy, France

2. Northern French Alps Emergency Network, Centre Hospitalier de la Région d'Annecy, Annecy, France
3. Stroke unit, Centre Hospitalier Universitaire de Grenoble, Grenoble, France
4. Emergency Department, Centre Hospitalier Universitaire de Grenoble, Grenoble, France
5. Stroke unit, Centre Hospitalier de Chambéry, Chambéry, France
6. Stroke unit, Centre Hospitalier de la Région d'Annecy, Annecy, France

Corresponding author: cvallot@ch-annecy.fr

Keywords: stroke, dispatch center, fibrinolytic therapy

Background :

Stroke represents the leading cause of functional impairment and the third cause of mortality in developed countries. Since the use of fibrinolytic therapy (FT), prehospital time from first clinical symptoms to FT in stroke unit is challenging our healthcare system. When dialed the Emergency Medical Service (EMS) phone number, recognition of stroke and rapid transportation to appropriate facilities could lead to increase the frequency of fibrinolytic therapy and outcome.

The aim of the study was to assess prehospital times and fibrinolytic therapy for patients with ischemic stroke managed by EMS system compared to self-attending patient in emergency department (ED) in the Northern French Alps.

Methods :

Observational prospective study based on patient material collected by the acute stroke registry of the Northern French Alps Emergency Network in 2012. 21 hospitals with ED, 3 EMS dispatch centers and 3 stroke units (1 for each administrative department Isère, Savoie, Haute-Savoie) provide health care for 2 millions of inhabitants in the Northern French Alps.

Inclusion criteria were all patients suspected of acute stroke in who dialed EMS phone number and all patients admitted in stroke unit.

Primary end-point was FT in stroke unit. Secondary end-point was prehospital times and specially time from first clinical symptoms of stroke and arrival in hospital and arrival in stroke unit. If hypothesized that fibrinolytic therapy would be 10% higher in the EMS group, we need 286 patients in each group to provide a power of 90% with an alpha risk 5%. We compared frequency with Chi 2 test and median prehospital times with Mann-Whitney test. The two-sided significance level was $p < .05$.

Unconditional logistic regression was performed to assess association between FT as dependent variable and EMS system, National Institute Health Stroke Scale (NIHSS), age and sex as independent variable.

Results :

3085 patients were included in the registry. 1743 (56%) have been suspected of stroke by the EMS dispatcher, and 1342 (44%) attended themselves in ED. For patient with stroke presumed by EMS dispatcher, 646 (37%) presented a final diagnostic of ischemic stroke, and 330 (19%) (EMS group) had criteria for admission in a stroke unit. For patient attending in ED, 660 (49%) presented a final diagnostic of ischemic stroke and were admitted in a stroke unit (control group).

Patients in the EMS group were older, 73,2 year vs 67,7; $p < .001$. NIHSS was higher in the EMS group, NIHSS median of 8 IIQ[3-16] in the EMS group and 3.5 IIQ[1-8] in the control group; $p < .001$. Median time from first clinical symptoms to arrival in hospital was 1.50 hour IIQ[1,5-3] in the EMS group and 3.39 hours IIQ[1,5-9] in the control group; $p < .001$. Median time from first clinical symptoms to arrival in stroke unit was 3.2 hours IIQ[2,1-7,4] in EMS group and 10.13 hours IIQ[3,6-25,6] in control group; $p < .001$. Median time from clinical symptoms to FT was 2.54 hours IIQ[2,2-3,2] in the EMS group and 3.18 hours IIQ [2,4-4] in the control group; $p < .001$. 131 patients in the EMS group were treated by FT; 39.7%; 95%CI, 34.4-45.2 and 88 in the control group, 13.3%; 95%CI; 10.8-16.2; $p < .001$.

Prehospital management by EMS dispatch center was significantly and independently associated with FT, adjusted odds ratio 3.7; 95%CI, 2.7-5.2; $p < .001$.

Conclusion :

Our results founded that EMS system is effective to provide rapid transportation to the appropriate facilities compared to patients attending themselves in ED. Prehospital triage by EMS dispatch center allowed to increase the frequency of fibrinolytic therapy in this region with many rural area.

Or-049

Neurology 1

DETERMINATION OF NETRIN-1 LEVELS IN PATIENTS THAT APPLIED TO EMERGENCY DEPARTMENT WITH STROKE AND ITS EFFECTS ON SURVIVAL FOR 6 MONTHS

Korhan Ivelik (1), Ramazan Koylu (1), Emine Akinci (1), Basar Cander (1), Zerrin Defne Dundar (1), Oznur Koylu (2), Haluk Gumus (3)

1. Emergency Department, Konya Education and Research Hospital, Konya, Turkey

2. Biochemistry Department, Konya Education and Research Hospital, Konya, Turkey

3. Neurology Department, Konya Education and Research Hospital, Konya, Turkey

Corresponding author: drkoylu@yahoo.com

Keywords: stroke, Netrin-1, survival

Objective: To investigate the serum levels of netrin-1 and its prognostic value in terms of mortality in patients with stroke admitted to emergency department and to determine the serum levels of netrin-1 in different types of stroke

Methods: All patients (18 years of age and older) admitted to the emergency department of Konya Training and Research Hospital with stroke symptoms from 01 August 2012 to 30 November 2012 were enrolled in this prospective study. Patients admitted to emergency department for another reason but without stroke symptoms were enrolled as a control group. The characteristics of patients such as age and gender, NIHSS scores (on admission and at 6th month), blood pressure

levels, and outcomes were recorded. 5 ml venous blood sample was taken from all of the patients for measuring the serum netrin-1 level. The patients were divided into groups as those with hemorrhagic and ischemic stroke. The differences of the serum netrin-1 levels between the groups were compared. The receiver-operating characteristic (ROC) analyses were used to detect the cut-off value of netrin-1.

Results: A total of 182 patients (131 patients in stroke group and 51 patients in control group) were enrolled in the study. The mean age of patients was 69.0±13SD years and 73 (55.7%) of the patients were male. In patient group, 13% of them had hemorrhagic stroke and 87% of them had ischemic stroke. The patients with ischemic stroke and hemorrhagic stroke had significantly lower serum netrin-1 levels compared to the control patients (respectively, $p=0.003$ and $p<0.001$). The area under the ROC curve of netrin-1 that used for distinguishing the differences between the stroke and control groups was statistically meaningful and the result was 0.739 (%95 CI 0.664-0.814). The best cut-off value was calculated as 72.4 pg/ml. Sensitivity was 71.0%, specificity was 68.6%, positive predictive value was 85.3%, negative predictive value was 47.9%, and accuracy was 70.3% with this cut-off value. The patients with hemorrhagic stroke had lower serum netrin-1 levels compared to the patients with ischemic stroke, but the difference was not statistically significant ($p=0.297$). There was no statistically significant difference between survivors and nonsurvivors in terms of the median serum netrin-1 levels ($p=0.782$).

Conclusions: Netrin-1 is an important protein for neurogenesis and angiogenesis. It regulates cell and axon migration in brain during the intrauterine period. In central nervous system, it takes place in migration of neural stem cells to the injured area. In available literature, there are many different biomarker studies in patients with stroke for predicting prognosis and mortality. We found that serum netrin-1 level was lower in stroke patients, but there was no significant difference between the types of stroke. There was no relationship between serum netrin-1 levels and mortality.

Key words: stroke, netrin-1, survival

Or-050

Neurology 1

CAN WE USE SERUM GAMMA-GLUTAMYL TRANSFERASE LEVELS TO PREDICT EARLY MORTALITY IN STROKE?

Emine Akinci (1), Nurettin Ozgur Dogan (2), Haluk Gumus (3), Nazire Belgin Akilli (4), Yunsur Cevik (1)

1. Keçiören training and research hospital, Emergency department, Ankara, Turkey

2. Kocaeli University Medicine Faculty, Emergency department, Kocaeli, Turkey

3. Konya training and research hospital, Neurology, Konya, Turkey

4. Konya training and research hospital, Emergency department, Konya, Turkey

Corresponding author: emineakinci@yahoo.com

Keywords: stroke, GGT, mortality

Introduction

Serum gamma-glutamyl transferase (GGT) is a marker for alcohol consumption and hepatobiliary diseases. There are reports on the prognostic role of GGT in coronary artery diseases and stroke. The aim of our study was to identify the potential differences in GGT levels in different types of stroke, and to evaluate the correlation between GGT and 30-day mortality.

Method

Patients diagnosed with stroke in ER between 01.01.2010 and 30.12.2012 were included in the study. Imaging techniques were used to distinguish between hemorrhagic and ischemic stroke. Ischemic strokes were further classified as either atherosclerotic or embolic. Parameters including age, gender, vital stats (systolic and diastolic blood pressure), comorbid diseases (HT, DM, CAD, smoking and alcohol consumption), used medications, previous history of stroke, NIHSS score at the time of admission to ER, laboratory parameters (glucose, white blood cell count, hemoglobin, platelet, total cholesterol, creatinine) and duration of hospitalization were recorded. Death records were obtained from patients' medical records and polyclinic records.

Findings

One thousand eighty six patients were included in the study. GGT levels were not significantly different between ischemic and hemorrhagic strokes ($p=0.435$). On the other hand, GGT levels in embolic strokes were significantly higher compared to atherosclerotic strokes ($p=0.001$). GGT levels [median 24.50 (16.00-43.00)] in Intensive Care Unit patients were significantly higher compared to GGT level [22.00 (15.00-34.25)] in emergency patients ($p=0.015$). Median GGT level of dead patients was 24.00 (16.00-41.25) and median GGT level of alive patients was 22.00 (15.00-35.00). GGT level of dead patients was significantly higher compared to GGT levels of alive patients ($p=0.048$).

Conclusion

There was no difference in GGT levels between ischemic and hemorrhagic strokes; however, GGT levels in embolic strokes were significantly higher compared to atherosclerotic strokes. High GGT levels are correlated with early mortality in stroke. We believe that GGT may be used as a predictor of mortality in future studies.

Keywords: Stroke, GGT, mortality

Or-051

Neurology 1

STROKE INCIDENCE AND USAGE RATE OF THROMBOLYSIS IN EMERGENCY DEPARTMENT

Hanen Ghazali, Rebeh Daoudi, Sami Souissi, Yosra Yahya, Nayla Mghaieth, Anware Yahmadi, Najla Elheni, Abdelhafidh Raddaoui

Service d'Accueil des Urgences, Hôpital Ben Arous, Tunis, Tunisia

Corresponding author: hanene.ghazali@yahoo.fr

Keywords: cerebral infarct, stroke incidence, thrombolysis

Background: Stroke is one of the leading causes of morbidity and mortality worldwide(1). It is an emergency requiring early and rapid management of the patient in a suitable care pathway. Thrombolysis is currently the treatment of choice for ischemic stroke. It has been proven in terms of efficiency and safety by reducing the rates of morbidity and mortality of stroke.

In Tunisia, the practice of Thrombolysis is still a subject of controversy and its use remains underestimated.

Objective: The purpose of this study was to obtain fundamental information on patients with acute stroke and transient ischemic attack (TIA) in an emergency department and to investigate the rate of thrombolytic therapy in patients with acute ischemic stroke.

Methods: A single-center, prospective, observational study was conducted in the emergency department(ED) of Ben Arous in Tunisia during 1 year. Patients (age \geq 18 years) with a suspicion of recent stroke or transient ischemic attack (TIA) were enrolled. Epidemiological characteristics and the management of those patients were described.

Results: During the 12-month study period, 58 patients were included. The mean age was 68 +/- 15 years old, and females comprised 36 patients (62%).The main comorbidities were: hypertension in 71%, diabetes mellitus in 33%, hypercholesterolemia in 12%, atrial fibrillation in 10% and smoking in 7%.

Overall, 34% of patients arrived at hospital within 3 hours of symptom onset, and 8 % within 6 hours. Only 3% of patient who visited the hospital used an ambulance service. Mean NIHSS score was 9.0 \pm 5.7. A diagnosis of cerebral infarction or intracerebral hemorrhage was confirmed by computed tomography in 47 % of cases. Cerebral infraction was confirmed in 36% of patient and intracerebral hemorrhage in 40% of patient .No patient were treated with thrombolytic agents in acute phase of ischemic stroke. Only 19 % of all patients were treated in stroke care unit or intensive care unit. The modified Rankin Scale score at 30 days of 0 to 2 was observed in 33 % of the patients, 3 to 5 in 10 %, and the mortality rate was 10 %.

Conclusions: Establishment of ideal emergency system and arrangement of stroke units are also awaited for better management and improvement of patients' outcome.

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Or-052

Neurology 1

THE RELATION BETWEEN PLASMA GELSOLIN LEVELS AND PROGNOSIS IN PATIENTS WITH ACUTE ISCHEMIC STROKE UPON ADMISSION TO EMERGENCY DEPARTMENT

Aysegul Bayir (1), Necmettin Tufekci (2), Husamettin Vatanssev (3), Hatice Baran (2), Hasan Kara (2), Seyit Ali Kayis (4)

1. *Emergency Department, Selcuk University Faculty of Medicine, Konya, Turkey*

2. *Emergency Department, Selcuk University Faculty of Medicine, Konya, Turkey*

3. *Biochemisry Department, Selcuk University Faculty of Medicine, Konya, Turkey*

4. *Faculty of Vetarinary, Selcuk University, Konya, Turkey*

Corresponding author: aysegulbayir@hotmail.com

Keywords: gelsolin, acute ischemic stroke, prognosis

Aim: To compare serum gelsolin levels and Glasgow Coma Score Scores (GCS) in patients with acute ischemic stroke and to compare with healty control subjects.

Methods: It was included to this study that first 3 hours after onset of symptoms patients with acute ischemic stroke. Healty volunteers were included to control group. Patients with chronic obstructiv pulmonary diseases, diabetes mellitus, acute coronary syndromes, renal failure, heart failure, trauma, hepatic failure, infection, sepsis, hematologic and oncologic disease were excluded from study. Venous blood samples were obtained from subjects of patients and control group upon admission to emergency. All patients GCS was determined on admission. Plasma samples were stored at -80 oC until evaluate. Patients with stroke followed up for length of hospital stay, length of intensive care unit stay and in hospital mortality. The plasma gelsolin levels were determined by ELISA method. The results of stroke and control groups were compared by Mann Whitney U Test.

Results: The mean plasma gelsolin level of stroke patients (n=37) was significantly lower (19.3 \pm 6.02 mg/L) than control group (n=20) (47.0 \pm 6 mg/L) (p=0.000). Plasma gelsolin levels of stroke patients was correlated with GCS scores (r=0.345, p=0.036). The mean plasma gelsolin level of patients who died (7 patients) in stroke group lower than surviving (30 patients). It was not found a significant relation between plasma gelsolin levels and lengt of hospital stay. There was not a relation between plasma gelsolin level and length of intensive care unit stay in patients with acute ischemic stroke.

Conclusion: Lower plasma gelsolin levels in first tree hours could be an indicator of poor prognosis and mortality in patients with acute ischemic stroke. More compherensive studies with larger patients group are needed in this area.

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Neurology 1

NEUROCOGNITIVE EFFECT OF SIMULATED RESISTANCE AND USE OF FORCE ENCOUNTERS ON STANDARDIZED FIELD SOBRIETY TESTING

Jeffrey Ho (2), Donald Dawes (1), James Miner (2), Johanna Moore (2), Paul Nystrom (2)

1. Emergency Department, Lompoc Valley Medical Center, Lompoc, United States
2. Emergency Medicine, Hennepin County Medical Center, Minneapolis, United States

Corresponding author: jeffrey.ho@hcmcd.org

Keywords: Use of Force, Neurocognitive Ability, Standardized Field Sobriety Testing

Background

Law Enforcement Officers (LEOs) use Conducted Electrical Weapons (CEWs) to restrain violent persons. During an encounter with a potentially intoxicated driver, the suspect may physically resist, run from the LEO, or be subjected to a Use of Force (UOF) tool or tactic. It is not known if these behaviors, tools or tactics can interfere with a person's ability to neurocognitively attend to Standardized Field Sobriety Tests (SFSTs).

Objective

Our objective was to determine if LEO UOF or physical resistance simulations impair a person's neurocognitive ability to be evaluated by SFSTs.

Methods

Eligible subjects were undergoing a law enforcement training class that included; a) 5-second TASER Conducted Electrical Weapon application (CEW), b)100-yard sprint with directional changes (RUN) c)45-second resistive fight against an opponent (RES) d) Hide and bite exercise with a LEO K9 (DOG) e) 10% oleoresin capsicum spray to the face (OCS). Volunteers underwent a baseline SFST (3 part test) from a qualified LEO. They were then randomized for data collection during one of the five exposures.

At 15-minutes post-completion of the task, they received another SFST for comparison. SFST scoring was on a pass/fail basis per certified standards with detailed recording of any parts that were failed. Test performance was compared using Fischer Exact tests.

Results

57 subjects were enrolled (median age 31.9 years, range 19 to 55, 89% male) 13 CEW, 10 RUN, 12 RES, 11 DOG, and 11 OCS. 3 subjects failed the SFST prior to the task exposure, 1 in each of RES, OCS, and RUN groups. All subjects passed the SFST 15 minutes after the exposure. There was no worsening of SFST performance post-task in any of the groups.

Conclusion

LEO UOF or physical resistance simulations do not appear to impair a person's neurocognitive ability as evaluated by SFSTs.

Or-054

Neurology 1

THE UTILITY OF S100 B PROTEIN IN THE DIFFERENTIAL DIAGNOSIS OF VERTIGO IN THE EMERGENCY DEPARTMENT

- Asl? Kartal (1), Serkan Yilmaz (2), Murat Pekdemir (3), Elif Yaka (1), Hasan Tahsin Sarisoy (4), Mustafa Baki Cekmen (5)

1. Emergency Department, Kocaeli University, Kocaeli, Turkey
2. Emergency Department, Kocaeli University, Kocaeli, Turkey
3. Emergency Medicine, Kocaeli University, Kocaeli, Turkey
4. Radiology, Kocaeli University, Kocaeli, Turkey
5. Biochemistry, Kocaeli university, Kocaeli, Turkey

Corresponding author: mdserkan@hotmail.com

Keywords: Vertigo, S100B, Diagnosis

Introduction: Vertigo is a common presenting complaint resulting from central or peripheral etiologies. Since central causes may be life threatening, ascertaining the nature of the vertigo is crucial in the emergency department (ED). In this broad range of potential etiologies, distinguishing central causes from those benign peripheral causes is a diagnostic challenge for emergency physician. There is limited knowledge to guide the emergency physician for risk stratification in this wide diagnostic range. Cranial magnetic resonance imaging (MRI) is the suggested neuroimaging method where clinical findings are ambiguous. However, it is not readily available in many emergency departments. Yet, in busy EDs MRI scanning for each patient with uncertainty in diagnosis may not be efficient in terms of time and cost effectivity. Therefore; to improve ED resource utilization in this subset of patients with vertigo, identifying candidates for MRI is considerable. S100B protein has been shown to be a useful neurobiochemical marker of stroke, subarachnoid hemorrhage and traumatic brain injury.

This study was conducted to evaluate the value of S100B levels for safely discriminating vertigo etiologies to support neuroimaging decisions in emergency departments.

Methods: This prospective, observational study was conducted with adult patients with acute onset vertigo (within 6 hours) in the ED of a teaching hospital in Kocaeli, Turkey. Patients who have nausea or dizziness complaints without previously known vertigo or cranial pathology and agreed to participate in the study were included. Patients with trauma and neurological findings developed concurrent with their symptoms were excluded. Serum levels of S100B were measured with Electrochemiluminescence immunoassay kit (Elecys; Roche Diagnostics, Mannheim, Germany). All patients underwent cranial MRI. Sensitivity and specificity of for S100B levels for positive MRI patients regarding vertigo etiology were calculated with receiver operating characteristic (ROC) curve.

Results: From 82 patients included, 48 (62.2%) were female and mean age was 51. Thirty one (37.8%) patients had positive MRI results regarding their clinics. Mean serum S100B levels were significantly different between MRI negative and positive patients [27.00 (95% CI 18.07-37.40 pg/mL), 60.94 (95% CI 43.34-70.20 pg/mL), respectively. p=0.04]. In the ROC analysis, S100B value of 36 pg/ml predicted the clinical outcome with 80.6% sensitivity, 43% specificity; 53.2% positive predictive value, 82.9% negative predictive value. [Area under the curve = 0.774 (95% CI 0.666-0.881)].

Conclusion: This is the first study to determine the utility of serum S100B levels for the diagnosis of acute onset vertigo of central origin. Importance of patient selection for MRI use in the differential diagnosis of vertigo etiology is obvious in terms of decisionmaking. This research indicates that serum S100B levels may have impact on the selection of candidates for cranial MRI in the differential diagnosis of vertigo etiology.

Or-055

Infectious Disease/Sepsis, and Obstetrics

RESISTANCE OF ESCHERICHIA COLI TO 3RD GENERATION CEPHALOSPORINS AND FLUOROQUINOLONES HAS INCREASED IN THE EMERGENCY DEPARTMENT : A 11-YEAR SURVEY

Emmanuel Montassier (1), Stéphane Corvec (2), Gilles Potel (1), Eric Batard (1)

1. Emergency department, Centre Hospitalier Universitaire de Nantes, Nantes, France

2. Thérapeutiques cliniques et expérimentales des infections, Université de Nantes, Nantes, France

Corresponding author: eric.batard@univ-nantes.fr

Keywords: Escherichia coli, cephalosporins, fluoroquinolones

Background : 3rd generation cephalosporins and fluoroquinolones are the cornerstone of the empiric treatment of pyelonephritis and prostatitis. Rates of resistance to these antibacterial agents have to be closely monitored among ED urinary isolates.

Objective: to assess the rates of resistance of Escherichia coli to fluoroquinolones and ceftriaxone between 2002 and 2012 in the adult ED of an academic hospital in France.

Methods : Retrospective survey of urinary isolates of E. coli sampled in the adult ED of the Centre Hospitalier Universitaire, Nantes, France, between 2002 and 2012 (mean number of patient visits per month, 5049 ± 321). When more than one isolate was cultured from one unique patient in a 30-day period, only the first was retained. Non-susceptibility to quinolones was defined by a minimum inhibitory concentration (MIC) of nalidixic acid >16 mg/l or an inhibition diameter <15 mm. Non-susceptibility to ceftriaxone was defined by a MIC >2 mg/l or inhibition diameter <23 mm.

Results : 6285 isolates were included. Fluoroquinolone resistance increased from 8.1 % (95% CI, 5.9% - 11.1%) in 2002 to 16.4% (95% CI, 13.8% - 19.5%) in 2012. Resistance to ceftriaxone increased from 0.4% (95% CI, 0.1%-1.7%) to 4.1% (95% CI, 2.8% - 5.9%). Meanwhile, resistance to nitrofurantoin decreased from 5.7% (95% CI, 3.9%-8.4%) to 2.1% (1.3%-3.7%).

Conclusion : Resistance of E. coli to fluoroquinolones and 3rd generation cephalosporins increased by respectively 2-fold and 10-fold between 2002 and 2012, thus compromising the empirical treatment of pyelonephritis and prostatitis in the ED. Community and in-hospital antibiotic use is linked with increasing resistance for both

classes. Limitation of prescriptions of cephalosporins and quinolones should be implemented in the ED.

Or-056

Infectious Disease/Sepsis, and Obstetrics

THIRD GENERATION HIV TESTING IS MISDIAGNOSING SIGNIFICANT NUMBERS OF PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT WITH SUSPECTED HIV

Chante Jones (1), Benjamin Lee (2), Lisa Morenowalton (2), Erin Simmers (2)

1. Baccalaureate candidate, Xavier University, New Orleans, United States

2. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, United States

Corresponding author: DoctorMoreno@gmail.com

Keywords: HIV infection, diagnostic testing, acute phase disease

Objective: Patients with undiagnosed Acute HIV infection (AHIV) frequently present to the Emergency Department (ED) with symptoms of viral syndrome. During AHIV, viral load is at its highest and the patient is most infectious. Routine antibody (Ab) based screening methods, commonly used in the ED; usually have a negative result during the window period. Patients are not able to begin appropriate therapy and are sent back into the community without the knowledge that they can be spreading the virus to others.

We hypothesize that a significant number of patients have presented to our ED with symptoms of AHIV and have received a negative HIV screening result.

Methods: Subjects include all patients who tested positive for HIV during a one year period. Charts were retrospectively reviewed to determine the number of patients that presented to the ED with symptoms of an acute viral syndrome and had a negative Oraquick within the 3 months prior to the positive Oraquick and reflex Western blot.

Results: 20/125 subjects who tested positive for HIV in the 12 month study period had documented previous negative test(s). Prior to the visit on which they tested positive, 25% were seen in ED for viral symptoms and had a negative Oraquick and 20% were seen for complaints unrelated to viral syndrome and had a negative Oraquick. Prior to the visit on which they tested positive, 15% had a negative Oraquick followed by an ED visit(s) for viral symptoms and 35% had a negative Oraquick followed by another ED visit for complaints unrelated to viral syndrome. One outlier had no prior ED visits, and tested (+) with complaints of viral symptoms.

Conclusions: 15.2 % of all patients who tested positive for HIV antibodies during the study period had a previous negative HIV antibody test in the months prior to seroconversion. 40% were evaluated in the ED for viral symptoms prior to seroconversion, and so were probably in the AHIV phase.

Discussion: A significant number of patients testing Ab positive sought medical help during AHIV, but were diagnosed as negative. Antigen testing should be made available, especially in high prevalence areas, to insure early treatment and to decrease the spread of acute infection. This study has further implications for the use of home testing kits, which are third generation screening tests, that may mislead patients into a false sense of safety when used prior to sexual intercourse with a new partner.

Or-057

Infectious Disease/Sepsis, and Obstetrics

C-REACTIVE PROTEIN LEVELS IN CHILDREN WITH PRIMARY HERPETIC GINGIVOSTOMATITIS

Alon Nevet (1), Havatzelet Yarden-bilavsky (2), Shai Ashkenazi (2), Gilat Livni (2)

1. Emergency Department, Schneider Children's Medical Center and Tel Aviv University, Petach Tikva, Israel

2. Department A, Schneider Children's Medical Center and Tel Aviv University, Petach Tikva, Israel

Corresponding author: alon.nevet@gmail.com

Keywords: C-reactive protein, primary herpetic gingivostomatitis, infection

Background: C-reactive protein (CRP) is used in differentiating viral from bacterial infections. However, some viral infections may cause CRP levels similar to bacterial infections. The aim of this work was to evaluate the distribution of C-reactive protein levels in children with primary herpetic gingivostomatitis.

Methods: The electronic database of a tertiary pediatric medical center was searched for all inpatients with a diagnosis of primary herpetic gingivostomatitis, without bacterial co-infection, treated from 2004 to 2011. Background and clinical information was collected and C-reactive protein levels were analyzed.

Results: Sixty-six patients aged 8 months to 7.1 years met the study criteria. The mean and SD of C-reactive protein levels were 7.4 (normal, under 0.5 mg/dL) and 7 mg/dL, respectively. More than one-third of patients had a level higher than 7 mg/dL. None had normal CRP.

Conclusions: High values of C-reactive protein are prevalent in patients with primary herpetic gingivostomatitis, similar to some bacterial infections and to adenoviral infections. This should be considered in managing these children.

Or-058

Infectious Disease/Sepsis, and Obstetrics

PURULENT SKIN AND SOFT TISSUE INFECTION CHARACTERISTICS AND THE LIKELIHOOD OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS AS THE CAUSATIVE PATHOGEN

Michael Pulia (1), Brad Hansen (2), Mary Calderone (2)

1. Emergency Medicine, University of Wisconsin School of Medicine and Public Health, Madison, United States

2. Emergency Medicine, Loyola University Stritch School of Medicine, Maywood, United States

Corresponding author: mspulia@medicine.wisc.edu

Keywords: MRSA, Abscess, Antibiotics

Study objective: The management of purulent skin and soft tissue infections (SSTIs) in the Emergency Department (ED) remains controversial. Methicillin-resistant Staphylococcus aureus (MRSA), which now causes approximately half of these infections, is resistant to traditional antibiotics. Wound cultures taken in the ED typically require 48 hours to complete and cannot guide antibiotic therapy. This dilemma often results in suboptimal antibiotic stewardship practices, such as using broad spectrum agents or two antibiotics. These practices increase adverse drug reactions and are linked to the epidemic of multi-drug resistant organisms. Determining wound characteristics that are associated with subsequent MRSA or non-MRSA culture results may enhance clinician's ability to prescribe pathogen specific antibiotics using clinical judgment alone. We evaluated whether the presence of various clinically observed wound characteristics increased the likelihood of MRSA as the causative organism in purulent SSTIs.

Methods: This study was conducted in a tertiary care ED and utilized an observational case control design. Patients presenting with purulent SSTIs were approached for enrollment using convenience sampling during daytime hours over a 16 week period. Two trained research associates determined the presence or absence of the following wound characteristics: cellulitis, spontaneous drainage, induration, and fluctuance. MRSA status was determined using either a polymerase chain reaction (PCR) assay or aerobic culture. Exclusion criteria were age <18 years and antibiotic usage in the previous week. Odds ratios (OR) and 95% CIs for the wound characteristics and MRSA status were determined with the Fisher's exact test, using R (R Foundation for Statistical Computing, Vienna, Austria).

Results: Of the 42 subjects included in this analysis, there were 20 MRSA (48%) and 22 non-MRSA (52%) cases. The only wound characteristic associated with an increased likelihood of non-MRSA status was cellulitis (OR 3.49; CI 0.82-16.90, P=.07). Wound characteristics associated with positive MRSA status were spontaneous drainage (OR 2.70; CI 0.58-14.90, P=.19), induration (OR 2.56; CI 0.64-10.97, P=.22) and fluctuance (OR 1.56; CI 0.22-12.32, P=.69).

Conclusion: For purulent SSTIs, the presence of cellulitis approached significance as a factor which reduces the likelihood of MRSA as the causative organism. Although spontaneous drainage, induration and fluctuance were associated with increased odds ratios for MRSA, their 95% CIs all included 1.00 and none approached statistical significance. Overall, clinical wound characteristics are not reliable predictors of MRSA involvement in purulent SSTIs. As the prevalence of MRSA in our study was approximately 50%, these results may not be applicable to practice

environments with significantly higher rates of MRSA SSTIs. These conclusions are limited by a small sample size which increases the likelihood of type two errors.

Or-059

Infectious Disease/Sepsis, and Obstetrics

RANDOMIZED CONTROLLED FEASIBILITY STUDY ON IMPROVING ANTIBIOTIC STEWARDSHIP IN THE TREATMENT OF ABSCESSES WITH A POLYMERASE CHAIN REACTION METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS ASSAY

Michael Pulia (1), Mary Calderone (2), Brad Hansen (2), Zhanhai Li (3), Mark Cichon (4), Nasia Safdar (5)

1. *Emergency Medicine, University of Wisconsin School of Medicine and Public Health, Madison, United States*
2. *Emergency Medicine, Loyola University Stritch School of Medicine, Maywood, United States*
3. *Department of Biostatistics & Medical Informatics, University of Wisconsin School of Medicine and Public Health, Madison, United States*
4. *Emergency Medicine, Loyola University Medical Center, Maywood, United States*
5. *Infectious Disease, University of Wisconsin School of Medicine and Public Health, Madison, United States*

Corresponding author: mspulia@medicine.wisc.edu

Keywords: MRSA, Abscess, Antibiotic Stewardship

Study objectives: In the era of community-associated methicillin-resistant *Staphylococcus aureus* (MRSA), clinicians face a difficult challenge when selecting antibiotics to treat abscesses. The lack of rapid diagnostics capable of identifying the causative organism often results in suboptimal antibiotic stewardship practices, such as using broad spectrum agents or two antibiotics. These practices increase adverse drug reactions and are linked to the epidemic of multi-drug resistant organisms. Therefore a rapid reliable test to determine if MRSA is the cause of purulent skin and soft tissue infections (SSTI) would assist in optimizing antibiotic therapy. One such system is a rapid PCR, which may be useful in the ED setting (Cepheid's GeneXpert®, San Francisco, CA). This system is capable of detecting MRSA from colonized and infected sites in approximately one hour and has been shown to have a 97.5% agreement between PCR results and traditional laboratory testing by culture. We undertook a feasibility trial to examine the use of this system for optimizing antibiotic use in the ED. Our primary objective was to determine if rapid PCR MRSA colonization and superficial wound swabs improve antibiotic selection compared to a group who received usual care (control group) for treatment of skin and soft tissue abscesses in the ED. Our secondary aim was to analyze turnaround times and impact of the rapid PCR detection protocol on length of stay, a key marker of quality care in the ED.

Methods: The study was designed as a randomized feasibility trial and was conducted at a tertiary care, urban, academic medical center. Patients with a chief complaint

related to a purulent skin or soft tissue infection during daytime hours over a 16 week period in the summer months of 2011 and 2012 were screened for eligibility. After randomization, 21 patients were included in the final analysis (12 PCR, 9 control).

Results: The two groups were similar in terms of demographics, abscess location and MRSA history. Turnaround times in minutes for the PCR swabs were as follows: nasal 73±7, pharyngeal 82±14 and superficial wound 79±17. In both groups, discharge antibiotics were prescribed in 100% of cases. Observed ideal antibiotic selection rates improved by 45% (P=.03) in the PCR group. Length of stay was similar between the two groups. The primary limitation of this feasibility study is our small sample size, which limits the strengths of our conclusions. Also, this study was conducted at a single institution using convenience sampling, during summer months and daytime hours only, which limits external validity.

Conclusion: PCR swabs demonstrated turnaround times effective for use in the ED setting. Utilizing a rapid PCR MRSA detection assay for ED patients with abscesses improves antibiotic selectivity without adversely impacting length of stay. These promising results indicate the need for an adequately powered, multiple site trial to validate this protocol.

Or-060

Infectious Disease/Sepsis, and Obstetrics

SEVERE SEPSIS AND SEPTIC SHOCK IN AN EMERGENCY DEPARTMENT: MICROORGANISMS ISOLATED FROM BLOOD CULTURES, ANTIBIOTIC SUSCEPTIBILITY AND RISK FACTORS FOR ANTIBIOTIC RESISTANCE

Anna Maria Brambilla (1), Rosaria Colombo (2), Anna Grancini (2), Marco Lattuada (3), Donatella Pavanello (1), Riccarda Russo (3), Valeria Savojardo (1), Silvia Serafini (1), Benedetto Visintin (1)

1. *Emergency Medicine, Fondazione IRCCS Ospedale Maggiore Policlinico Mangiagalli Regina Elena Milano, Milano, Italy*
2. *Microbiology Department, Fondazione IRCCS Ospedale Maggiore Policlinico Mangiagalli Regina Elena Milano, Milano, Italy*
3. *Intensive Care Unit, Fondazione IRCCS Ospedale Maggiore Policlinico Mangiagalli Regina Elena Milano, Milano, Italy*

Corresponding author: donatellapavanello@hotmail.com

Keywords: severe sepsis, blood cultures isolates, antibiotic susceptibility

Background: Severe sepsis (ss) and septic shock (SS) carry an elevated mortality and morbidity. Early adequate antibiotic treatment impacts successfully on outcome. To improve the adequacy of the antibiotic treatment, local epidemiology and the prevalence and risk factors for Multi Drug-Resistant microorganisms (MDRO) should be taken into consideration.

Aim of the study was: to identify common microorganisms isolated from blood cultures of patients diagnosed with a

ss/SS in our ED; to check their antibiotic susceptibility and the prevalence of antibiotic resistance; to assess demographic and anamnestic features of the host associated with an MDRO infection

Methods: The retrospective study included all consecutive patients diagnosed with a ss/SS in the ED of Fondazione IRCCS Ospedale Maggiore Policlinico Mangiagalli Regina Elena of Milan over 24 months (from January 2011 to December 2012).

The medical history and the demographic characteristics of the patients were collected.

We considered all the blood cultures performed before antibiotic administration in our ED within the first 48 hours from admission.

Criteria from CDC guidelines were used to assess whether a culture was a "true positive" or a contaminant and to define a MDR microorganism.

Infections were distinguished as Hospital Infections, Healthcare Acquired Infections (HAI) and Community Acquired Infections (CAI) according to CDC definitions.

Results: 198 subjects were diagnosed with a ss/SS in our ED over the 24 months. Blood cultures were collected from 132 of them (67%), 79 of which (59%) were positive. Among the positive cultures, 70 (53% of total BC) were defined as true positive and 9 (6%) as contaminants.

56 patients (80%) were affected with an infection by a non-MDR pathogen. Among the non-MDROs isolated, 67% were Gram-negative. The most frequent pathogen isolated was *Escherichia coli*, obtained in 21 patients, followed by *MSSA* (12 patients) and *Klebsiella pneumoniae* (12 patients). 14 (20%) patients carry a MDRO infection by 15 MDROs (1 co-infection): 5 MRSA; 6 *E. coli* ESBL +; 3 MDR *K. pneumoniae* (sensible to carbapenems) e 1 MDR *Pseudomonas aeruginosa* (sensible to carbapenems).

The hospital setting, the presence of shock on admission to the ED and an history of chronic renal failure showed to be associated with the detection of a MDR pathogen ($p < 0.05$).

Conclusion: 53% of BD were true positive, supporting the usefulness of this simple tool in the diagnosis of severe septic syndromes. 67% of blood cultures isolates were Gram negative pathogens, stressing the increasing role of these microorganisms in the genesis of septic syndromes. 20% of patients carrying a positive BD were infected by a MDRO. The hospital setting and the severity of disease at admission confirmed to be associated with an infection by a MDRO. Among host characteristics, chronic renal failure showed to make the patients more susceptible to MDRO infections. Further prospective studies are needed to better evaluate risk factors for specific causative microbiological agents of SS to guide the best empiric antibiotic choice.

Or-061

Infectious Disease/Sepsis, and Obstetrics

ANTIMICROBIAL AGENTS USE IN THE EMERGENCY DEPARTMENT: A 11-YEAR SURVEY IN AN ACADEMIC HOSPITAL

Emmanuel Montassier (1), Philippe Le Conte (1), Gilles Potel (1), Eric Batard (1)

1. *Emergency department, Centre Hospitalier Universitaire de Nantes, Nantes, France*

Corresponding author: eric.batard@univ-nantes.fr

Keywords: antibacterial agents, 3rd generation cephalosporins, resistance

Objective. Hospital antibiotic use promotes the spread of antimicrobial resistance. There is a major concern for fluoroquinolones and 3rd generation cephalosporins, that select resistance mediated by Extended Spectrum Beta-Lactamases. Temporal trends of antibiotic use in the Emergency Department are poorly known. The aim of the present study was to assess the trends of antibiotic use in the Emergency Department of a french academic hospital.

Methods. Antibiotic use of the adult Emergency Department of Nantes University Hospital (65000 patient visits in 2012) was retrieved from the pharmacy records for years 2002 to 2012. Antibacterial agents were grouped in 18 classes. Data were converted in Defined Daily Doses (DDD) per 1000 patient visits (PV). Temporal trends of antibiotic consumption were assessed using a linear mixed model.

Results. Total antibiotic consumption tended to decrease from 53.0 to 48.5 DDD/1000 PV (estimate decrease for one year, -0.91 ± 0.50 DDD/1000 PV, $P = 0.07$). Use increased significantly for 3 antibiotic classes : 3rd generation cephalosporins (estimate increase per year, 1.2 ± 0.1 % of total antibiotic use, $P < 0.0001$), imidazole derivatives (0.2 ± 0.1 %, $P < 0.0001$), and ticarcillin/piperacillin \pm enzyme inhibitor (0.1 ± 0.0 %, $P < 0.0001$). Use decreased significantly for 6 classes : amoxicillin (estimate decrease per year, -0.3 ± 0.1 % of total antibiotic use, $P < 0.0001$), antipseudomonal cephalosporins (-0.2 ± 0.0 %, $P < 0.0001$), β -lactamase sensitive penicillins (-0.2 ± 0.0 %, $P < 0.0001$), β -lactamase resistant penicillins (-0.2 ± 0.1 %, $P < 0.01$), glycopeptides (-0.1 ± 0.0 %, $P < 0.05$) and non antipseudomonal fluoroquinolones (-0.6 ± 0.2 %, $P < 0.001$).

Conclusion. The largest variation of antibiotic use was the increase of 3rd generation cephalosporins. Considering ecological damages due to 3rd generation cephalosporins, measures should be undertaken to reverse this trend.

Or-062

Infectious Disease/Sepsis, and Obstetrics

SEPSIS ALTERS THE EXTRACELLULAR BACTERIAL KILLING CAPACITY OF NEUTROPHIL

Muhammad Aminul Huq (1) (2), Akihiko Hirakawa (2), Tomonori Hattori (2), Hideki Kano (2), Hiromichi Miyabe (2), Atsutoshi Tomino (2), Hiromitsu Hashiba (2), Takayoshi Gocho (2), Masanori Ando (2), Takashi Nakagawa (1), Naoshi Takeyama (2)

1. *Emergency and Critical Care Medicine Department, Aichi Medical University School of Medicine, Japan*

2. *Emergency and Acute Intensive Care Medicine Department, Fujita Health University School of Medicine, Toyoake, Japan*

Corresponding author: aminulshaheen@yahoo.com

Keywords: Sepsis, Neutrophil, NETs

Background: Sepsis is a deleterious host response to infection leading to organ failure and circulatory shock. Neutrophils are one of the important arms of innate immunity. Neutrophils kill microbial organisms either intracellularly by phagocytosis or extracellularly by neutrophil extracellular traps (NETs). NETs are composed of neutrophil-derived circulating free DNA (cf-DNA), histones and proteases. We compared the characteristics of NETs isolated from septic patients and non-septic patients. **Methods:** Seventeen septic and 14 non-septic patients were included in our study. We isolated neutrophils and phorbol myristate acetate (PMA)-induced NETs forming capacity was examined by ratio of released cf-DNA to total cellular DNA. Extracellular bacterial killing by NETs was determined by co-culture of *E. coli* and neutrophil in the presence of phagocytosis inhibitor. We also quantified the plasma cf-DNA. **Results:** PMA-induced NETs derived from septic neutrophils was 4.08% of their total DNA, whereas from non-septic neutrophils was 29.06%. Non-septic neutrophils killed *E. coli* extracellularly by NETs, but septic neutrophils could not kill ($p < 0.001$). Moreover the plasma levels of cf-DNA/NETs for septic patients and for non-septic patients were 2091.94 ± 852.49 and 1079.14 ± 461.53 ng/ml (mean \pm SD), respectively. **Conclusion:** These results demonstrate that during sepsis the neutrophils cannot generate NETs properly, which in turns affect the bacterial killing capacity of neutrophil. Moreover, the higher concentrations of plasma cf-DNA/NETs of septic patients have made the possibility for it to be a biomarker of sepsis.

Or-063

Infectious Disease/Sepsis, and Obstetrics

EARLY PREGNANCY BLEEDING; IS THERE A ROLE FOR A EMERGENCY DEPARTMENT NURSE LED PATHWAY ?

Inderjeet Chawla (1), Claire Jones (2), Asoka Weerasinghe (3)

1. Emergency Department, Mid Yorkshire NHS Trust, Dewsbury, United Kingdom
2. Emergency Department, Mid Yorkshire NHS Trust, Dewsbury, United Kingdom
3. Emergency Department, Mid Yorkshire NHS trust, Dewsbury, United Kingdom

Corresponding author: inderjeetkaur@doctors.org.uk

Keywords: Early pregnancy bleeding, Nurse led pathway, Emergency department

INTRODUCTION:

Vaginal bleeding occurs in 15%-25% of early pregnancies. Most of these women attend emergency departments. It is a condition with multiple causes ranging from ruptured ectopic pregnancy to threatened miscarriage. Most patients presenting with this distressing condition are

haemodynamically stable and when triaged under the manchester triage system which is widely used in emergency departments in the UK will be allocated to the triage category of standard or non-urgent. So these patients could expect to be seen within 2-4 hours. The end result is often booking patients in for an early pregnancy unit scan and sending them home with advice.

This wait adds to the patient's distress and a sense of disappointment on not getting a scan the same day. Our objective was to design and implement a Emergency Department Nurse led Early Pregnancy Bleeding pathway in our emergency department to select out this patient group and attend to them in a timely manner and to decrease their waiting time.

In doing so we were mindful not to miss out serious conditions like ectopic pregnancy by implementing robust exclusion criteria to the nurse led care pathway.

METHODS:

An audit was carried out prior and after implementing the nurse led pathway. The population audited were patients who presented with early pregnancy bleeding ($< 16/40$) who were followed up by an out patient early pregnancy scan.

RESULTS:

44 patients were audited during August to September 2012 prior to implementing the pathway and 20 patients during November 2012 to February 2013 after implementing the pathway.

Prior to implementing the pathway only 4.54% ($n=2$) of patients were sent home within 60 minutes whereas after implementation of the pathway 50% of patients ($n=10$) were sent home within 60 minutes with appropriate advise and appointment for an early pregnancy scan.

Similarly prior to implementation of the pathway 63.63% ($n=28$) were in the department for more than 2.5 hours compared to only 5% ($n=1$) after the pathway was used.

None of the patients who were discharged by the nurses under the early pregnancy bleeding pathway had ectopic pregnancies in the follow up scan.

DISCUSSION:

To the best of our knowledge this is the first time that an Emergency Department Nurse led Early Pregnancy Bleeding Pathway has been implemented.

Implementation of the Nurse led Early Pregnancy Bleeding pathway in the emergency department has decreased patient waiting times drastically without compromising safety. This strategy could be further explored in other areas of practice to decrease waiting times, improve patient experience and to use the emergency physician's time more efficiently in the emergency department.

Or-064

Neurology 2, Geriatrics, Orthopedics, and Endocrine

ASSOCIATION OF SERUM RDW (RED BLOOD CELL DISTRIBUTION WIDTH) LEVELS WITH EARLY MORTALITY IN PATIENTS REFERRED TO EMERGENCY SERVICE FOR ACUTE STROKE

Emine Akinci (1), Nurettin Ozgur Dogan (2), Haluk Gumus (3), Nazire Belgin Akilli (4), Yunsur Cevik (1)

1. Keçiören training and research hospital, Emergency department, Ankara, Turkey
2. Kocaeli University Medicine Faculty, Emergency department, Kocaeli, Turkey
3. Konya training and research hospital, neurology Konya, Turkey
4. Konya training and research hospital, Emergency department, Konya, Turkey

Corresponding author: emineakinci@yahoo.com

Keywords: RDW, acute stroke, mortality

Introduction

In this study, we aimed to assess the effects of serum RDW levels at the time of hospital referral on early mortality in patients aged ≥ 65 who referred to emergency service for acute ischemic stroke.

Method

Patients diagnosed with stroke in emergency service were included in the study between 1 January 2012 and 30 January 2013. Differentiation between hemorrhagic stroke and ischemic stroke was made using the imaging methods. Ischemic strokes were divided into two groups as atherosclerotic and embolic. Age, gender, vital signs (systolic and diastolic blood pressures), comorbid diseases (HT, DM, CAD, history of smoking and alcohol consumption), used drugs, prior stroke status, National Institutes of Health Stroke Scale scores at the time of referral to emergency service, laboratory parameters (glucose, white blood cell, haemoglobin, platelet, total cholesterol, creatinine) of the patients were recorded by searching the medical records. Death records were obtained from the patient files and outpatient clinic records.

Results

A total of 692 patients were included in the study and of these, 506 (73.1%) were atherosclerotic and 186 (27.9%) were cardioembolic.

There were RDW differences between genders ($p=0.047$). No statistically significant difference was detected in RDW between patients with and without history of stroke ($p=0.547$). Likewise, there were no significant differences in RDW between patients with cardioembolic and atherosclerotic stroke ($p=0.663$). Poor positive correlation with NIHSS scores ($r=0.346$, $p<0.001$), very poor positive correlation with age ($r=-0.194$, $p<0.001$) and negative correlation with EF values ($r=0.177$, $p<0.001$) were detected for RDW values.

Median RDW values of patients who died were 14.0 (13.3-14.9), median RDW values of patients who are alive were 15.5 (14.3-16.8) and GGT values of patients who died were statistically significantly higher than those of patients who are alive ($p<0.001$).

Conclusion

RDW levels do not vary depending on the stroke type. Higher RDW values are associated with early mortality in stroke. We think that RDW, which is a simple, easy-to-use, cost-effective laboratory test, may be used as a predictor in estimation of mortality in acute ischemic stroke.

Or-065

Neurology 2, Geriatrics, Orthopedics, and Endocrine

CEREBRAL VENOUS SINUS THROMBOSIS: DESCRIPTION OF 912 CASES.

Elisa Saleme (1), Adriana Ron (1), Karla Hernandez (1), Hector Montiel (1)

1. Emergency department, ABC Medical Center Methodist Hospital Network, Mexico City, Mexico

Corresponding author: elisa.saleme.md@gmail.com

Keywords: Cerebral venous thrombosis, Acute neurological deficit, Diagnosis in the emergency department

Introduction. First cases of cerebral venous thrombosis (CVT) were published by Ribes and Abercrombie in the nineteenth century, including one associated to postpartum.

In autopsy series the incidence of CVT is estimated in 3 to 4 cases per million in adults whereas in clinical series the incidence is 10 times higher. CVT involves less than 1% of all strokes. CVT have particular interest in third world countries by their frequency, associated with postpartum. For many decades CVT was mainly associated to septic processes. However, from the widespread use of antibiotics, the infectious etiology of CVT has decreased considerably. Today the aseptic CVT is the most common form.

CTV is characterized by a neurological polymorphism making a difficult diagnosis and diversity of etiologies make it an entity of variable prognosis.

Due to the wide spectrum of clinical presentation, the CVT is often confused initially with other diseases so the prognosis of these patients may be influenced negatively. That is an important consideration especially in first-contact physicians who are mainly emergency medical.

Material and methods: We made a cross retrolective and prolective description of all patients admitted to the ABC Medical Center during the period January 2002 to September 2012, with diagnosis of CVT. Patients were classified according to the list of ICD-10 (180.2). We excluded pediatric age and those with an incomplete file.

We recorded epidemiological variables, clinical characteristics, comorbidities, and survival. The results were compared with the literature. Statistical analysis was performed using the chi-square test determined sensitivity, specificity, positive predictive value and negative predictive value. We associated symptoms and morbidity according to their final state. We considered statistically significant $p = 0.05$.

Results. Patients had an age range between 17-97 (mean 68.72 years) as shown that is normal distribution, with predominant male patients (58.3%). We found 72 deaths being the most frequent comorbidities malignant hypertension and infection (septic shock, pneumonia, endocarditis). The most common symptom of income was headache (68%), associated or not with loss of consciousness and seizures that were statistically significant.

The diagnosis was made mostly by magnetic resonance (MR) 81.7%, however, the initial study was computerized axial tomography (35.9%).

The anatomical region most frequently affected was the transverse sinus (63%).

Discussion. The CVT is a devastating disease whose early recognition and prompt treatment improves the prognosis. In the cerebrovascular accidents the CVT has an incidence of 1-2%, although it is known that is underdiagnosed, in our population we reach a 0.46%.

CVT is typically multifactorial, which means that the we have to rule out a risk factor, a large percentage of cases are idiopathic and they were clarified months later.

Risk factors associated in the literature are: pregnancy and postpartum, thrombophilia and meningeal infections. We found that 87% of our patients had an identifiable prothrombotic risk factor, but studies to detect any thrombophilia were performed immediately and thus lack adequate sensitivity and specificity.

In our population the use of oral contraceptives was around 12%, however this appears to be the strongest risk factor associated with the CVT. Case-control studies show that the use of these is presented up to 45% of patients with CVT.

The CVT may present with a broad spectrum of signs and symptoms that simulate different neurological diseases, however, we can identify four classic patterns of presentation: intracranial hypertension, focal syndrome, cavernous sinus syndrome and subacute encephalopathy. Headache as only symptom has been described recently and make the suspicion and clinical diagnosis more difficult. Conclusions. The age and sex of presentation of CVT in our population was different from the reported literature, with a greater predominance of male and higher age average. The most frequently comorbidity in patients with worse prognosis was malignant hypertension, infections and cerebral hemorrhage. The association with contraceptive intake showed no predominance in our population.

The symptoms that occur more frequently in the CVT is the headache associated with seizures and altered mental status. Suspect the diagnosis from the ED improve the prognosis of these patients.

Or-066

Neurology 2, Geriatrics, Orthopedics, and Endocrine

THE INCIDENCE OF HIGH LEVEL OF TROPONIN IN ACUTE STROKE

Sedat Kocak (1), Hanifi Arslan (1), Izzettin Ertas (1), Mehmet Ergin (1), Basar Cander (1)

1. Emergency department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

Corresponding author: skocak@konya.edu.tr

Keywords: stroke, troponin, biomarker

Objective: Emergency physicians have difficulties in diagnosing Acute Coronary Syndromes and Ischemic Strokes which have similar frequency, risk factors and also

come about together frequently. It becomes more difficult when we consider that troponin being an important marker in diagnosis of acute myocardial infarcts have a potential for increment in case of stroke. We investigated incidence of high level of troponin in acute ischemic stroke.

Method: We included patients diagnosed with Acute ischemic stroke at our ED between 1 January to 31 December 2012. The diagnosis was made with clinical signs and findings reported with diffusion weighted MR imaging. The patient who had suspicious of ACS due to history, physical signs, clinical and ECG findings and troponin testings were considered and the incidence of high level of troponin-I was found.

Results: There had been 389 patients with prediagnosis of AIS, 190 (48.8%) of whom were man. The mean age was 64.9 years (median value: 66 years). There were 173 (44.5%) patients with diffusion restricted on MRI. There were 232 (59.6%) patients with troponin-I testing. The mean value of troponin-I was 0.96 ng/mL (0.05-7.26 ng/mL). We found 35 (20.2%) patients who was diagnosed with AIS had high level of troponin-I although they didn't have any specific ECG changes related with cardiac ischemia.

Conclusion: In the literature, it is noted that 20% of patients with AIS have high level of troponin-I. So that our results are compatible with up to date data. There is need for further trials to explain the relation of troponin-I with AIS in terms of diagnostic and clinical importance and prognosis.

Or-067

Neurology 2, Geriatrics, Orthopedics, and Endocrine

STRESS HYPERGLYCEMIA IN THE EMERGENCY DEPARTMENT IS A STRONG PREDICTOR OF MORTALITY

Edin Zelihic (1), Thorsten Siegmund (2), Boris Poneleit (1), Christoph Dodt (1)

1. Department of Emergency Medicine, Bogenhausen Academic Teaching Hospital, Technical University of Munich, Munich, Germany

2. Department of Endocrinology Diabetes and Vascular Medicine, Bogenhausen Academic Teaching Hospital, Technical University of Munich, Munich, Germany

Corresponding author: e.zelihic@yahoo.com

Keywords: Stress hyperglycemia, In-hospital risk factor, Early Management

Background:

While stress hyperglycemia (SHG) is associated with adverse outcome in intensive care patients (1) its role for the in-hospital outcome of patients admitted through the Emergency Department (ED) has not been determined.

Objectives: The GLUCEMERGE-Studies (Glucose blood levels in the Emergency Department; GES) aimed to determine the prevalence and clinical consequences of elevated blood glucose levels in ED-patients and analyzed the effects of early intervention by a specific treatment bundle. The present subgroup analyses focused on those patients who

presented with stress hyperglycemia which was defined as an admission blood glucose level (BGL) \geq 180 mg/dl (10 mmol/l), no previous diabetes, normoglycemic BGL before hospital-discharge and, if available, a HbA1C $<$ 6.5 g/dl (1).

Methods:

The initial retrospective study (GES) was followed by GES II-prospective study including all adult patients admitted from the interdisciplinary ED to the City Hospital of Bogenhausen, Munich in a three-month-period in 2010 (GES) and 2011 (GES II).

No active intervention took place in the GES concerning hyperglycemic patients. In the GES II we initiated a bundle of measures for all patients presenting a blood glucose level (BGL) \geq 180 mg/dl including the demand for a daily blood sugar profile and a consultation by a diabetologist within the first 48 hours after hospitalization. Additionally, we recommended an insulin-administration during patient's ED-stay according to a predefined protocol regardless of the patient's diabetic status or underlying diagnosis in order to maintain blood glucose levels between 140-180 mg/dl. Glycemic control continued until ED discharge and an insulin protocol for the first 48h of hospitalization was communicated to the normal wards physician.

In both studies we compared patients with SHG to normoglycemic patients and regressive multivariate analysis was used to analyze hospital mortality (primary endpoint), length of hospital stay (LOS) and Intensive care unit (ICU)-admission. Finally, the results of the GES and GES II-study were compared to each other.

Results:

Prevalence of SHG among hyperglycemic patients was high in GES (9.7%; n=82) and GES II (6.5%; n=51).

GES: SHG-patients showed a significant increase of mortality-risk vs. NG (OR 7.4; $p < 0.001$). Interestingly, mortality-risk in normal wards-patients was higher than in ICU-patients (OR 7.4 vs. 2.7). The risk for ICU-admission (OR 5.10; $p < 0.001$) was significantly increased vs. NG and LOS was significantly prolonged (+2.3d; $p < 0.01$).

GES II: The active intervention in patients with SHG led to an improved glycemic control vs. GES. We could not observe any significant differences comparing patients with SHG and normoglycemic BGL in LOS or in-hospital mortality risk on normal wards. Mortality-risk for patients with ED-SHG and subsequent treatment on ICU was only slightly increased (OR 0.4; $p < 0.01$).

Conclusions:

Prevalence of SHG in hospitalized hyperglycemic ED patients is high and reveals to be an independent risk factor for mortality, length of hospital stay and ICU-admission. An early and systematic intervention inside the ED regardless of the patient's diagnosis seems to impact on further prognosis and should be evaluated in further randomized studies.

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Or-068

Neurology 2, Geriatrics, Orthopedics, and Endocrine

INTEGRATION OF A SPECIALIST GERIATRIC REGISTRAR WITHIN THE EMERGENCY DEPARTMENT OF A DISTRICT GENERAL HOSPITAL

Ewan Barron, Suzie Key

Emergency Medicine, East Midlands Healthcare Workforce Deanery, Nottingham, United Kingdom

Corresponding author: ewan.barron@doctors.org.uk

Keywords: Geriatrics, Integration, Service

Introduction

The population of the UK in March 2011, was 63.2 million; the largest it has ever been. It is well documented that the population age distribution is shifting towards a high weighting of elderly patients. It is estimated that 16.5% of the population is over the age of 65, with approximately 4.7% over the age of 80.

The emergency department (ED) is the gateway to the hospital, and first point of access to healthcare for many patients. There were approximately 18.1 million UK ED attendances in 2012; of these, 3.7 million (20.8%) resulted in admission to hospital for inpatient treatment.

The average length of stay for a patient over the age of 65 is approximately 10 days; hence consideration for service development within the area of Geriatric Emergency Medicine is a priority.

Aims

A four-week pilot project was developed to look at the feasibility and impact of integrating a specialist geriatrics registrar within the ED. The aims were to assess if this service would reduce geriatric admissions to acute medical wards.

Methods

The pilot hospital has a single point of access system, where patients referred by general practitioners are seen in the ED.

The geriatric registrar was based within the ED, working eight hour shifts during the day. The pilot ran for four weeks, giving a total of 20 working days. Patients over the age of 65, who were considered appropriate for acute medical admission by the ED team could be referred to the geriatric registrar.

The geriatric registrar could also identify waiting patients that may be suitable for assessment. This registrar would briefly screen patients to see if specialist geriatric input may enable the patient to be discharged. If deemed appropriate, the registrar would then fully review each patient.

Results

In total, 173 patients were referred for assessment during this time, with 147 being reviewed by the geriatric registrar. In total, 15 reviewed patients were successfully discharged from the emergency department (10.2%).

Discussion

The pilot seems to have been successful in reducing the number of patients that are admitted to the acute medicine wards, with an estimated reduction of 10% in a specific population group. The group identified was influenced by many factors. These include the emergency department

doctor's opinion on suitability for referral, the registrar's opinion during patient screening, and the registrar's capacity to review patients. It is important to note that some patient who may have been eligible for review were admitted due to capacity.

Knowledge regarding specific outpatient pathways, and community services was described as being vital to the successful discharge of many patients. This suggests that improving the accessibility and knowledge of these pathways within the emergency department is a key learning point from this exercise.

No cost benefit analysis was performed however the registrar involved said that integration of this post within higher specialist training would be a valuable learning experience. Improving knowledge of outpatient pathways and then repeating the pilot may be beneficial in assessing the impact of this intervention.

Conclusions

This pilot has identified one possible strategy for reduction in acute admissions in the elderly population. The creation of a specific post for a geriatrician to be based within the emergency department may be beneficial in rapid assessment and discharge of suitable patients. Increasing education and knowledge of outpatient services, within the emergency department workforce may also contribute to a reduction in admissions in this age group.

Or-069

Neurology 2, Geriatrics, Orthopedics, and Endocrine

CENTENARIANS : AN INCREASING POPULATION WITH SPECIFIC NEEDS IN EMERGENCY DEPARTMENT

Caroline Zanker (1), Anne-laure Feral-pierssens (1), Sophie Jumel (1), Pauline Moreau Aelion (1), Philippe Juvin (1)

1. Emergency Department, European Georges Pompidou Hospital, Paris, France

Corresponding author: anne-laure.feral-pierssens@egp.aphp.fr

Keywords: Frail elderly, Centenarians, Patient care management

Context

The massive ageing population phenomenon is reflected in the patients consulting in the emergency departments (ED). Centenarians, initially uncommon have their proportion that is increasing constantly. These patients are often polypathological and present with complex care problematic for which our emergency doctors have small experience. Then, it seems relevant to describe this population in order to know better their care pathways and their medical needs.

Method

We did a monocentric retrospective study over 5 years of all centenarians consulting in an ED of a university-hospital. We collected medical and social data and specificities of their care management.

Results

There is n=140 visits over 5

years concerning 80 patients (0.1% of all ED visits). Mean age is 101 years old and 9 months. 45% are demented patients. 53% live in nursing homes. Most of the demented are the one leaving in nursing homes. 60% are consulting for medical reasons (18% for dyspnea, 10% for global deterioration). 4.2% don't have any medication. The mean number of medications per patient is 4.8. 89.3% need further examination. 60% are discharged and go back home or back to their nursing home (through a short stay in a post-ED department or directly from the ED).

Conclusion

Centenarians have specific medical needs. They are often polymedicated, half of them are demented and are those living in nursing homes. Consultation motives are well parted between traumatology and medicine. They most always need further examination but a majority of them are discharged without any hospitalization and go back to their home or structure. Then, it appears that we must train our doctors to elders' care management and to their specific problematic. However, the ED is an important structure to complete examination if needed but medical nets need to be created or reinforced in order to manage appropriately this population.

Or-070

Neurology 2, Geriatrics, Orthopedics, and Endocrine

A RARE ANKLE FRACTURE TYPE: ISOLATED POSTERIOR MALLEOLUS FRACTURE

Yusuf Erdem (1), Yusuf Emrah Eyi (2), Bulent Karslioglu (3)

1. Orthopaedics and Traumatology Clinic, Gulhane Military Medical Academy, Ankara, Turkey

2. Emergency Medicine, Hakkari Military Hospital, Hakkari, Turkey

3. Orthopaedics and Traumatology Clinic, Hakkari Military Hospital, Hakkari, Turkey

Corresponding author: bukars@gmail.com

Keywords: isolated posterior malleolus, rare, fracture

Ankle is one of the most frequently injured joints during sports activities. Although the most of injuries are ligament injury, ankle fractures are also relatively common. Ankle fracture incidence is 1-2/1000 yearly. Posterior malleolus fractures may be associated with other bone or ligament lesions frequently. But isolated posterior malleolus fractures are very seldom. Diagnosis of isolated posterior malleolus fractures can be easily overlooked due to its uncommon nature at emergency rooms.

CASE REPORT

23 year old male patient admitted to our emergency department with the complaint of right foot pain that occurred after a fall from a height of 2-3 meters during military training. As he said he dropped on heels and then seated over his foot. On physical examination we didn't detect ankle swelling or deformity. Ottawa ankle rules revealed no evidence of any of the injury when examining tenderness on the medial / lateral malleolus, pain on

palpation of foot bones, or pain with stretching deltoid or lateral collateral ligaments. Fibular compression test that shows injury at proximal fibula was negative.

After examining ankle X-rays we detected posterior malleolus fracture that is less than 25% of the articular surface of the posterior malleolus. Computed tomography were taken to reveal out the accompanying other injuries. The fracture thought to be stable because of absence of associated injuries and presence of the fracture that is less than %25 of articular surface of posterior malleolus. Below knee cast was applied. After 6 weeks, patient was encouraged to gradually mobilized and progressive weight bearing. Two months later radiographic fracture healing was diagnosed.

RESULT

Due to special occurrence mechanism (compression and/or plantar flexion) isolated posterior malleolus fractures are rare type of ankle fractures. It can easily be overlooked by emergency medicine specialist who doesn't accustomed to fracture or call to mind such a fracture type and so can cause chronic pain and ankle degenerative changes at future.

Or-071

Neurology 2, Geriatrics, Orthopedics, and Endocrine

DISTAL RADIUS FRACTURES: ASSOCIATED INJURIES AND EARLY COMPLICATIONS IN THE EMERGENCY DEPARTMENT

Elham Pishbin, Afsaneh Dehbozorgi, Morteza Talebi Deloei

Emergency Department, Imam Reza hospital, Mashhad University of Medical Sciences, Mashhad, Iran, Islamic Republic of

Corresponding author: pishbine@mums.ac.ir

Keywords: distal radius fractures, complication, injuries

Background

Distal radius fractures are the most common fractures in the upper extremities which can lead to different complications. The incidence of complications after distal radius fractures has been reported at 6-80%. These fractures can lead to prolonged dysfunctions and also frequent acute and chronic bone and soft tissue complications. Until now, most studies have evaluated the acute and chronic complications of these fractures, but this study is the first to investigate the associated injuries and early complications of distal radius fractures at time of presentation to the emergency department.

Material and method

All patients with distal radius fracture presented to the emergency department of Imam Reza Hospital, Mashhad, Iran during the 6 month period, from November 2012 to April 2013, were enrolled in the study. History taking and physical examination were performed by the emergency medicine residents at the time of presentation. Exclusion criteria were: suspected fractures not confirmed on the x-ray, association with lower extremity fractures, and

dissatisfaction for participation in the study. SPSS 15.0 for Windows (SPSS Inc. Chicago, IL, USA) package program was used for statistical analysis. Categorical variables were tested with frequency analysis.

Result

From one hundred and fifty-two patients who were eligible for inclusion in the study, 330 patients were men and 222 were women. The mean age was 40.6 ± 18.0 (age range 5-85). The mechanism of fracture was falling in 82.2% of patients, and the others were due to motor vehicle accident. Incidence of associated injuries and complications was 71.4% on presentation. Styloid process fracture was the most frequent associated injury (49.1%) and the median nerve injury had the lowest incidence (0.9%). Other detected injuries were scaphoid fracture (13.2%), ligament injury (6.3%), tendon injury (3.8%), metacarpal fracture (3.1%) and ulnar nerve injury (2.5%). 41.5% of fracture patients had at least one associated injury at the time of presentation.

Conclusion:

According to the high rate of associated injuries and complications in the early hours after distal radius fractures, emergency physicians should evaluate these fractures more carefully, to reduce treatment costs and possible severe dysfunctions in the future. At this time, many different studies have evaluated immediate, acute and chronic complications of distal radius fractures, but difference in the patients' population, method of evaluation and severity of mechanism of injury may be responsible for different rate of reported complications. IT is also better to determine the relationship between factors such as injury severity, age, gender and other factors which deal with the complications of these fractures in further studies.

Or-072

Neurology 2, Geriatrics, Orthopedics, and Endocrine

ANTERIOR SHOULDER DISLOCATION COMPLICATED BY ARTERIAL AND VENOUS THROMBOSIS: CASE REPORT

Hamed Aghdam (1), Seyyed Mohamad Hosseini Kasnavye (2), Maryam Mehrizi (3), Nader Tavakoli (2)

1. Emergency Department, Sina Hospital, Tehran, Iran, Islamic Republic of

2. Emergency Department, Iran University Of Medical Science, Tehran, Iran, Islamic Republic of

3. Shohadaye-E _Tajrish Hospital, Shahid Beheshti University Of Medical Science, Tehran, Iran, Islamic Republic of

Corresponding author: tavakoli21651@yahoo.com

Keywords: Axillary artery injury, Shoulder dislocation, Arterial and Venous Thrombosis

Anterior shoulder dislocation is an exceedingly common form of shoulder dislocation and compromises more than 90% of all shoulder dislocations. Axillary artery involvement after dislocation of the shoulder joint is very unusual. In our knowledge, vascular damage after shoulder fracture-

dislocation has an incidence of 0.6%, and much more rare without any fracture. Unawareness for closed axillary artery trauma by many physicians managing shoulder dislocations, often leads to missed or delayed diagnosis. This report presents the possibility of axillary artery injury with anterior shoulder dislocation. This paper documents a case of anterior shoulder dislocation admitted with arterial and venous thrombosis. This patient suffered a falling down injury to his outstretched arm and displaced left humeral heads anteriorly. After closed reduction, he developed an axillary artery and vein thrombosis less than a day later and required surgical therapy. An injury of the axillary artery, therefore, should be suspected in all patients with expanding hematoma and neurologic deficit.

Or-073

Management-ED Organization 1

RELIABILITY AND VALIDITY OF THE EMERGENCY SEVERITY INDEX IN NEW SETTING.

Wiem Kerkeni (1), Naima Sghaier (2), Chafia Bouhamed (2), Naouel Ellafi (2), Rami Jabla (2), Sondes Yaacoubi (2), Soudani Marghli (2)

1. emergency department, hôpital Taher Sfar, MAHDIA, Tunisia
2. emergency department, hôpital Taher Sfar, mahdia, Tunisia

Corresponding author: kerkeniwiem@gmail.com

Keywords: triage, emergency severity index, emergency department

Background: The emergency severity index (ESI) is an algorithm to sort patients according to clinical severity (ESI1 and ESI2) and according to the number of resources used (ESI3, ESI4 and ESI5). This is the tool of triage most widely used in the United States of America. Clinical studies show that this instrument has good validity and reliability in specific populations. The objective of this study was to determine the validity and the reliability of ESI in our emergency department.

Methods: this was a prospective observational study. We included patients visiting emergency between 9 am and 15 pm on weekdays. Patients were independently triaged by 2 trained medical students. Weighted kappa (WK) is used to calculate inter rater reliability between the 2 investigators. To assess validity, the relationships between the ESI level and admission, admission site, death and resource utilization were investigated.

Results: During the study period, 900 patients were included, mean age was 40 ± 20 years and sex ratio was 0.92. The majority of patients were sorted into priority class ESI 3 (36%), 4 (38%) and 5 (20%). Only 5% and 1% were respectively sorted ESI 2 and 1. Inter rater reliability between investigators was good, $WK=0.81$ (95% :0.71-0.92), representing good agreement. Hospital admission by ESI level was as follows: 1(71%), 2(52%), 3(11%), 4(2%), 5(0.5%). A higher percentage of ESI level 1(71%) and level 2 patients (15%) were admitted to the intensive care unit than ESI levels 3-5 (0.3%, 0%, 0%). Three patients died, two

were ESI level 1 and one was ESI level 2. Use of resources was strongly associated with the triage level, rising from 12% in ESI-5 (one resource) to 100% in ESI-1 (more than 2 resources).

Conclusion: ESI has excellent inter rater reliability and predict hospital admission, location of admission, mortality and resource consumption.

Or-074

Management-ED Organization 1

ASSOCIATION BETWEEN AGE > 75 AND EXCEEDED TARGET WAITING TIMES IN THE EMERGENCY DEPARTMENT: A MULTICENTER CROSS-SECTIONAL SURVEY IN THE PARIS METROPOLITAN AREA, FRANCE.

Yonathan Freund (1), Christophe Vincent-cassy (2), Bruno Riou (3), Patrick Ray (4)

1. Emergency Department, Hopital Pitie-Salpetriere, Paris, France
2. Emergency Department, Hopital Bicetre, Kremlin-Bicetre, France
3. Emergency Department, Hopital Pitie-Salpetriere, paris, France
4. Emergency Department, Hopital Tenon, paris, France

Corresponding author: yonatman@gmail.com

Keywords: waiting time, elderly, logistic regression

Objective: We sought to evaluate whether age greater than 75 years is an independent predictor of prolonged waiting time (WT) in the Emergency Department (ED).

Methods: We retrospectively analyzed all adult attendances to nine EDs within the Paris area during 2011. The primary endpoint was target WT exceeded, defined as a WT for medical assessment longer than the maximal recommended WT according to triage level. To assess our primary objective, we performed logistic regression using patient- and ED related- variables to determine if age > 75 years was independently associated with higher rate of target WT exceeded.

Results: 317 793 patients were included, of which 173 629 (54.6%) had an exceeded target WT. Mean age was 45.8 years and 12.7% were older than 75 years. Target WT was exceeded in 55% of patients: 53% for patients aged less than 75 (95% Confident Interval (CI) 53% to 54%) vs 64% for older patients (95% CI 63% to 65%), relative risk 1.20. In the multivariate analysis, age greater than 75 was independently associated with an exceeded target WT (Odds Ratio [OR] 1.30; 95% confident interval [CI] 1.27 to 1.33). Other variables associated with exceeded target WT were triage level (OR 5.45 [5.32 to 5.60] for triage level 2 versus triage level 4), high daily occupancy (OR 3.78 [3.53 to 4.03]), day of the week (OR 1.12 [1.09 to 1.14] for Monday), and time of the visit (OR 1.79 [1.76 to 1.82] from 6 pm to 8 am).

Conclusion: Patients aged higher than 75 years are less likely to be seen within the target WT.

Or-075

Management-ED Organization 1

POINT-OF-CARE TESTING VERSUS ROUTINE IN-LABORATORY TESTING DURING PATIENT VOLUME SURGE SITUATIONS.

Robert Eisenstein (1), Jonathan McCoy (1), Clifton Lacy (2)

1. *Emergency Medicine, Rutgers-RWJMS, New Brunswick, United States*

2. *MEDICINE, RWJMS-UCDPER-RUTGERS, New Brunswick, United States*

Corresponding author: mccoij1@umdnj.edu

Keywords: point-of-care testing, turnaround time, surge

Background:

Advances in point-of-care testing (POCT) equipment have made it as accurate as traditional in-laboratory testing. Studies have shown its utility for cardiac bio-markers in Emergency Department (ED) patients with chest pain. There have been no studies utilizing this technology in large patient volume surge situations. The laboratory has the ability to manage multiple specimens at once, while POCT can only run one specimen at a time. The aim of this study was to determine at what surge volume, if any, in-laboratory testing would provide results faster than POCT. Is there a patient volume above which the in-laboratory volume scalability would allow more efficient processing of specimens than POCT.

Objective:

In order to evaluate the effectiveness of the POCT during surge situations, POCT was compared to in-lab testing during periods of large numbers of patients – when patient volume demands outstrip available resources.

Methods:

This study was completed at an urban level 1 trauma center with an academic emergency medicine department with a residency and annual patient volume of 70,000. All patients seen requiring laboratory testing during the afternoon peak volume between 11 a.m. and 7 p.m. were enrolled over a 3 week period. Blood samples were drawn in the usual manner. One tube of blood was sent to the laboratory for testing and the other tube was run in the ED using POCT. Turnaround time (measured as time from order entry to result availability) for each test was recorded. A supplemental time-motion study was completed to detail the steps involved in lab processing, characterize the manual labor required for in-lab tests, and estimate the number of POCT machines that would be required to handle the complete hospital volume in an hour. This study received a non-human subjects research determination from the institutional review board. All patients were treated in the usual manner of care.

Results:

We collected 539 hematology and chemistry specimens. The point of care testing was significantly faster than in-lab testing, with mean POCT (complete blood count – CBC and chemistry) time of 3.5 minutes compared with in-lab CBC test time of 30.9 minutes and chemistry test time of 55

minutes. As the volume of samples increased and reach a peak there was a slight but insignificant decrease in POCT turnaround. There was no time when in-lab testing was faster than POCT. The time motion study showed that the PCOT system can process 17 specimens per hour. When faced with the average total hospital lab testing volume of 54 samples per hour, 3 POCT machines would be necessary to maintain the benefit of the rapid turnaround for that number of specimens.

Conclusions:

Even during ED surge situations, point-of-care testing provided results significantly faster than in-laboratory testing. If POCT were used for total hospital volumes approaching 54 samples an hour, 3 POCT machines would be necessary to maintain turnaround times.

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Or-076

Management-ED Organization 1

A SYSTEMATIC REVIEW OF EMERGENCY DEPARTMENT PERFORMANCE MEASURES AND QUALITY INDICATORS

Michael Madsen (1), Sampsa Kiuru (2), Maaret Castren (3), Lisa Kurland (3)

1. *Faculty of Health, Copenhagen University, Denmark*

2. *Department of Emergency Medicine University of Turku, Finland*

3. *Dept. of Clinical Research and Education, Karolinska Institutet, Dept. of EM, Södersjukhuset, Stockholm, Sweden*

Corresponding author: moesmann@gmail.com

Keywords: Systematic review, Quality of care, Performance indicators

Authors:

Michael Moesmann Madsen, MSc*° [1], Sampsa Kiuru, MD* FACEM [2], Maaret Castrén, Professor [2], Lisa Kurland, MD, PhD [2]

* These authors have contributed equally

° Potential speaker

[1] University of Copenhagen, Denmark

[2] Karolinska Institute, Sweden

Background:

Emergency medicine is in a state of rapid development. Within a northern European context, as of January 2013,

emergency medicine became a primary specialty in Finland, followed by Sweden in 2014. This development prompts the question of how to develop cross-country indicators to compare ED quality of care, performance and efficiency. Globally, there is a sizeable literature on ED quality indicators, however no stringent systematic review has been undertaken to date.

Aim:

Systematic review of the global literature of performance and quality indicators for emergency departments.

Methods:

This systematic review follows the PRISMA guidelines and is registered at the PRISMA website. PUBMED/MEDLINE, EMBASE, CINAHL, ERIC, LILACS and Cochrane databases were searched with a specified set of MeSH / Boolean operated search terms. Two reviewers independently screened the results based on title, abstract and full text review to assess relevance for inclusion. The indicators were extracted and sorted in

A. Process (such as time to diagnostic or time to see caregiver)

B. Outcome (such as mortality or unplanned returns)

C. Structural (such as organizational or department equipment set-up)

D. Satisfaction (e.g. caregiver or patient satisfaction)

E. Equity (ethnicity, age, etc.) categories.

Finally, the indicators were systematically assessed by the level of evidence (of their sensitivity, specificity and completeness).

Results:

The title and abstract search identified 3271 articles for screening. 158 of 1000 (to date) screened articles were found relevant for inclusion. 50 separate indicators were identified: These were categorized into process (39%), structural (22%), satisfaction (22%), outcome (16%) and equity (2%). Most publications cited indicators without providing evidence (e.g. of validity, reliability, specificity or selectivity). For 50% of the indicators we found no evidence, whereas 50% of the indicators were supported by at least one evidence-based publication. For the indicators where evidence exists, the best evidence available is predominantly of low PRISMA grade - typically retrospective cohort studies with a median n of 242,000 ED visits. Overall, less than 20% of indicators have at least one moderate to high PRISMA grade publication (e.g. prospective cohort or randomized study).

Among the best supported indicators are: measures of "Right Treatment" and "Right Diagnostics" as well as "Time to Right Treatment". Some frequently cited indicators such as "Unplanned Returns" and "Left Without Being Seen" have relatively weak evidential support, each with just 3-4 moderate to low PRISMA grade evidence-based publications identified.

Conclusion:

The majority of the publications on quality and performance indicators for emergency departments cite indicators without providing evidence of their sensitivity, specificity, reliability or validity. We found no evidence for 50% of mentioned indicators. For the 50% of indicators where evidence exists, the evidence is predominantly of low quality such as retrospective cohorts, convenience

samples or other bias-prone methods. Less than 20% of indicators are supported by at least one prospective cohort or randomized study.

In conclusion, there remains a substantial need for more and better research on quality and performance indicators for emergency departments, especially for frequently mentioned but relatively weakly supported indicators, exemplified by "Unplanned Returns" and "Left Without Being Seen".

Or-077

Management-ED Organization 1

EMERGENCY DEPARTMENT UTILIZATION RATES AMONG IMMIGRANT POPULATION, AN ITALIAN EXPERIENCE

Gianfranco Cervellin, Comelli Ivan, Valentina Musetti, Marcello Zinelli

Emergency Department, Academic Hospital of Parma, Parma, Italy

Corresponding author: gcervellin@ao.pr.it

Keywords: immigrants, overcrowding, emergency department

A constant increase has been observed in the immigrant population in Italy over the last 30 years, representing almost 7% of the overall population. The provision of guaranteed healthcare services to this group is one of the most difficult challenges facing the Italian Healthcare System. The Emergency Department (ED) is the service most used by this population. The aim of this study is to compare the ED utilization rates between Italian-born and foreign-born residents, referring to a large urban academic ED (average number of visits per day: 245). The study population included all visits to the ED of the Academic Hospital of Parma (northern Italy) during years 2008 to 2012, accounting for 425082 units. The city of Parma (about 190000 residents) and its province (about 440000 inhabitants) is located in the Region of Emilia Romagna in the north-western part of Italy, and is one of the richest and most economically developed areas of the country. The aforementioned conditions have attracted a lot of immigrants who are largely employed in industry, agriculture and services, especially in the care of the elderly. The employment rate for Emilia Romagna is 77.1% compared to 57.5% nationally. In the city of Parma the foreign-born population represents almost 13% of overall residents, and there are currently immigrants coming from 137 different countries. The most represented community is Moldavian (13.4%) followed by Albanian (10.2%) and Tunisian (9.4%). All the patients were categorized by a four-level color-coded triage system. The statistical analysis of the distribution between Italian-born and foreign-born emergency accesses, based on colour-code categorization, was carried out using a chi-square test. The overall utilization rate was 254 emergency contacts per 1000 people a year. In the Italian-born group it was 244 while in the foreign-born group there were 330 contacts per 1000 people a year. Color codes for the Italian-born and foreign-

born populations were respectively: 2.98% vs. 0.76% for red codes, 24.16% vs. 11.69% for yellow codes, 67.15% vs. 74.95% for green codes and 5.69% vs. 12.58% for white codes. All the results showed a statistically significant difference. With our study we have demonstrated a strong trend in over-utilization rates of the ED amongst the immigrant. In this group we observed a large percentage of low-priority codes and a high rate of self-referrals, enforcing the hypothesis that immigrants encounter difficulties in utilizing the available primary care services, by-passing them and self-referring to the ED, at least in an urban context. We think that a better knowledge of the available Italian healthcare services should be encouraged.

Or-078

Management-ED Organization 1

CREATING THE LEANED IMPROVES OUTCOMES IN TRAUMA PATIENTS

Prasit Wuthisuthimethawee (1,3), Michael S Molloy (2,3,4), Gregory R Ciottone (3)

1. Emergency Department, Songklanagarind Hospital, Prince of Songkla University, Hatyai, Songkhla, Thailand
2. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT), Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland
3. Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA
4. Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland

Corresponding author: mickmolloy@mac.com

Keywords: Lean, Acute trauma care, Emergency Department

Introduction

For severely traumatized patients it is important to initiate treatment as early as possible following the traumatic event. These crucial time periods are known as the golden hour and the platinum ten minutes in trauma. Treatment delays will result in poor outcomes. In the trauma setting treatment delays occur either in the pre-hospital phase or in the Emergency Department (ED). This study demonstrates that through the optimization of Emergency Department systems utilizing Lean principles to eliminate or modify unnecessary processes, treatment outcomes of severe trauma patients in the ED are positively impacted.

Objective

To measure improvement in the outcome of severely traumatized patients after implementation of Lean principles in the Emergency Department

Methods

The value stream map (VSM) was created by using Lean principles to eliminate or modify the non-value added and wasteful processes in the treatment of severely traumatized patients who met the criteria for inclusion. Inclusion criteria were adult patients (age of 18 years or above) and trauma patients who met at least one of following parameters; shock state, penetrating torso injury

(e.g. gun shot wound, stab wound to chest or abdomen), traumatic arrest, respiratory rate (RR) < 12 or > 30 per minute and pulse rate (PR) > 120 beats per minute. The patients who were transferred from other hospitals or who died prior to arrival in the Emergency Department were excluded. The new, Post-Lean treatment processes were implemented on January 1st, 2009. The data was collected by on-duty nursing personnel using a standardized trauma form. The data composed demographic information, time sequence of each treatment process, emergency department length of stay (EDLOS), and 28day mortality. This 1year retrospective observational study was conducted in our Emergency Department (ED) and data was processed using Microsoft Excel 2003 (Microsoft Inc., Redmond, WA) software. Data was reviewed and compared to the 3 months prior to the implementation of Lean principles (pre-Lean: October 1st 2008 to December 31st 2008). Improvement of treatment outcomes was determined by a decrease in EDLOS and 28 day mortality in comparing pre and post Lean process states. Man Whitney U test and Chi-square test or Fisher exact test were used to compare the outcomes. Statistical significant was assumed when p value < 0.05.

Results

In pre-Lean process the total value added time and total turn around time were 53 minutes and 453 minutes respectively. In post-Lean process the total value added time and total turn around time were 21 minutes and 76 minutes respectively. The pre-Lean and post-Lean value added time ratio were 11.7% and 27.6% respectively. The post-Lean treatment process improvement included a more rapid trauma team activation and set-up, relocation of the Computed Tomography (CT) room closer to the trauma bay, standardized treatment algorithms (assessment, work-up and laboratory), development of rapid-use laboratory kits, re-aligning the use of consultation services (trauma team activation criteria) and developing better communication protocols.

There were 24 patients (24 male) in the pre-Lean group and 80 patients (74 male and 6 female) in the post-Lean group. The mean age of patients were 35.7 years (range 18-69) and 34.3 years (range 18-71). The most common mechanism of injury was motor vehicle accident; 12 patients in the pre-Lean group and 45 patients in the post-Lean group. The median EDLOS in pre-Lean group was 184 minutes (range 32-384) and the EDLOS in post-Lean group was 85 minutes (range 40-140). In the pre-Lean group, 16 patients were dead while 37 patients died in the post-Lean group.

Post-Lean treatment improvements shortened median EDLOS (184 minutes versus 85 minutes; p=0.00), and the 28 days mortality was decreased from 66.7% to 46.3% (p=0.08).

Conclusion

The implementation of Lean principles in the Emergency Department of a Trauma Center can result in more efficient operations resulting in significantly improved trauma patient treatment outcomes.

Or-079

Management-ED Organization 1

A STREAM FOR COMPLEX AMBULANT PATIENTS REDUCES EMERGENCY DEPARTMENT CROWDING.

Andrew Grouse (1), Roderick Bishop (1), Tracey Devillecourt (1), Liesel Gerlach (1), James Mallows (1)
1. Emergency Department, Nepean Hospital, Penrith, Australia

Corresponding author: rod.bishop@swahs.health.nsw.gov.au

Keywords: Crowding, Emergency Medicine, Length of stay

Objective: To evaluate the effect of adding an ambulatory patient-care stream for high complexity patients in an emergency department.

Methods: The setting was an emergency department in a tertiary referral hospital in Sydney, Australia. Prior to the intervention, the department ran two separate streams: a non-ambulatory stream for high complexity patients (Acute Care); and an ambulatory stream for low complexity patients (Fast Track). In 2011 a new stream was added. Using six bed spaces in Acute Care, traditional beds were replaced by five examination couches and an internal waiting area. The couches were set aside for the purpose of assessing and managing patients who would previously have been assigned to Acute Care and who were capable of sitting in a chair with limited nursing interventions. These patients did not occupy a bed. Instead, after initial medical assessment and nursing interventions they were placed in the internal waiting area to await diagnostic investigations and a disposition decision. This stream was separately resourced with staff re-deployed from the Acute Care stream. Early involvement of an emergency physician was a core characteristic of the process. Two thirteen-week cohorts before and after the intervention were compared.

Results: There were 8.2% more patients in the post-intervention cohort. Following the intervention, 43% of all patients were seen through the new stream. The median total ED time fell from 327 (IQR 192 – 527) minutes to 267 (IQR 163 – 412) minutes ($p < 0.001$), the mean occupancy of the department fell from 38.1 patients to 34.9 patients (95% CI for difference 1.6 – 4.8, $p < 0.001$) and the proportion of patients who did not wait to be seen fell from 12% to 5.6% (95% CI for difference 5.8 – 7.1, $p < 0.001$).

Conclusion: The use of an appropriately resourced stream directed towards seeing a group of complex patients who do not occupy a bed significantly improved departmental flow and occupancy.

Or-080

Management-ED Organization 1

RAPID INTENSIVE OBSERVATION: ONE YEAR-EXPERIENCE OF AN ACUTE MEDICAL UNIT IN AN INTERNAL MEDICINE WARD

Chiara Sandona (1), Enrico Ambrosi (1), Elena Ferrazzi (1), Sara Gregori (1), Federica Stella (1), Mirka

Zucchetto (1), Franco Tosato (2), Gianna Vettore (2), Sandro Giannini (3), Fabrizio Fabris (4)

1. Emergency department, University of Padua, Padova, Italy
2. Emergency department, Azienda Ospedaliera Padova, Padova, Italy
3. Clinica Medica 1, Azienda Ospedaliera Padova, Padova, Italy
4. Clinica Medica 1, University of Padua, Padova, Italy

Corresponding author: chiara.sandona@gmail.com

Keywords: Acute medical unit, Overcrowding, Hospitalization

Background: the overcrowding of the Emergency Department is an increasing problem, with growing rates of admission to the wards, length-of-stay, more difficult discharges and readmissions. We needed a new way to evaluate and manage the patient, entering the Emergency Departments for peculiar acute medical problems. Rapid Intensive Observation within an Internal Medicine Department is a project proposed in Anglo-Saxon countries and adopted in the Internal Medicine ward (Clinica Medica I, Azienda Ospedaliera- Università di Padova) in close collaboration with the Emergency Department.

Objective: The purpose of this study was to evaluate the effectiveness of Rapid Intensive Observation in Internal Medicine, in terms of quality, reliability and adequacy of the project.

Patients and Methods: During the first year of the project (February 1, 2011 - February 1, 2012), 729 patients were admitted in our unit. Inclusion criteria, defined between the Emergency Department and the Internal Medicine staff, were the following: low-intermediate risk TIMI score chest pain; syncope; stable supraventricular arrhythmias; pulmonary embolism high risk deep veins thrombosis; electrolytic disorders and dehydration; osteoporotic vertebral fractures; difficult management of oncological and non oncological pain; allergies; abdominal pain; NYHA II and III stages of heart failure; acute inflammatory conditions; asthma; mental confusion; low control of diabetes. For each inclusion criteria, a specific management protocol had been created in order to solve the main problem and discharge the patient within 72 hours.

Results: Of the patients admitted, 60% had been managed within 72 hours, with a mean hospital stay of 2.3 ± 0.8 days. The likelihood of needing more than 72 hours of hospitalization was significantly affected by disability (Barthel Index) and the age at admission, after adjusting for gender, CIRS (comorbidity and severity), number of previous medications and admissions. The majority of the patients was admitted for chest pain (46%), syncope (15.6%) and arrhythmias (8%). 18.93% of the patients were readmitted within 90 days to the Emergency Department for a medical problem linked to the previous hospitalization reason, 55.8% of them were discharged and 44.2% were rehospitalized.

Conclusions: The Rapid Intensive Observation has significantly reduced the length of hospital stay, was not associated with increased readmission rates after discharge. Patients discharged within 72h were younger and with less disability and comorbidity. In conclusion, the Rapid Intensive Observation seems to be a new and effective modality for Internal Medicine in-patients, able to

reduce hospital stay, without affecting the efficiency of the diagnostic and therapeutic approach to the patients.

Or-081

Management-ED Organization 1

MISSED FRACTURES IN AN ENGLISH DISTRICT GENERAL HOSPITAL EMERGENCY DEPARTMENT. THE STORY BEHIND.

Pallav Bhatnagar (1), Luis Nacul (1)

1. Emergency Medicine, Mid Essex Hospital Services NHS Trust, Chelmsford, United Kingdom

Corresponding author: luis.nacul@doctors.org.uk

Keywords: missed fractures, radiology, risk factors

INTRODUCTION Missed fractures (MF) are a problem known to all Emergency Physicians (EP). They can cause significant distress and are a cause of complaints and litigation. Trainee radiologists miss 6% of accident fractures, while radiographers miss over 7%, and trainees in Emergency Medicine may misinterpret over 10% of radiographs. In ED, x-rays interpretation is the responsibility of the treating physician, who may be a junior doctor with little training or experience in emergency radiology. We conducted a retrospective study on missed fractures in a UK district general hospital seeing approx 70,000 new attendances per year, of which approx 25% are paediatric, aiming to quantify and better understand factors associated with MF.

METHODS In this hospital currently all x-rays are reported by a reporting radiographer or a radiologist. The identified MF are forwarded to a senior EP to manage further. The MF at this point is recorded on ED software, Symphony v.2.29.3.1. We identified all cases attending the Emergency Department that received x-rays, where missed fractures were diagnosed between 15 October 2011 and 14 October 2012 (n=4415), by searching on Symphony. This was complemented by further search for number and proportion of missed fractures in previous years. We compared the distribution of MF according to factors such as patient's age, type and location of fracture, date and time of presentation to hospital and seniority of treating doctor. Data were analysed using Open Epi v.2.3.1 and Stata v.12.

RESULTS The number and proportion of reported missed fractures increased significantly over the last 3 years, from 69 (1.6%) in the period October 2009 to October 2010 to 269 (5.7%) in October 2011- October 2012 (p<0.001). There were 269 (5.7%) MF identified during 2011-12. The most common sites were foot/ankle and wrist/hand, accounting together for 81% of all MF. Missed fractures are significantly more likely to occur in children aged 5-18 years old, attending on weekends and among those with shorter durations of A&E stay (median 2.1 vs 2.3 hours, p=0.003). The highest rates of MF occurred in cases seen by middle grade doctors (7.4%), and the lowest in Emergency Nurse

Practitioners (ENP) (4.5%), with junior doctors missing 6.6%, and consultants, 6.0% (p>0.05).

CONCLUSIONS Higher risk situations for MF include age between 5-18 years and attendance on weekends. The rate of 5.7% over the last 12 months is similar or lower than that reported in other studies. Low rates in previous years reflect previous under-reporting of MF. The ENPs were found to have the lowest rates of MF and junior doctors lower than middle grades as, we believe, most of their x-rays are looked at by another pair of eyes before patient is discharged from the ED. We suggest the following strategies to immediately reduce the occurrence and early identification of MF in an emergency department:

1. 'Four-eyes' approach to all high risk x-rays (ankle and wrists in children)
2. Review of x-rays performed during night shifts (24:00-8 am) by senior EP in the morning
3. As the majority of cases of MF occurred when a radiographer had not 'red-dotted' the imaging, we also suggest that further training and a more proactive role for the radiographers could contribute to better identification of fractures.

Arguably, better emergency staff coverage out of hours and a reduction in time pressures on staff could possibly result in a lower incidence as more missed fractures took place during the last hour of 4 hour target. Further analysis of trends and factors related to MF in larger geographic areas or national level is needed to clarify whether this is a local or widespread issue. There is an argument if MF should be linked to the setting of national standards for quality.

Or-082

Education and Training 1

EUROPEAN MASTER IN DISASTER MEDICINE: IMPACT ANALYSIS ON STUDENTS' PROFESSIONAL CAREER

Luca Ragazzoni (1), Pier Luigi Ingrassia (1), Alba Ripoll (1), Ives Hubloue (2), Michel Debacker (2), Francesco Della Corte (1)

1. CRIMEDIM - Research Center in Emergency and Disaster Medicine, Università del Piemonte Orientale, Novara, Italy
2. ReGEDiM - Research Group on Emergency and Disaster Medicine, Vrije Universiteit Brussel, Brussels, Belgium

Corresponding author: luca.ragazzoni@med.unipmn.it

Keywords: disaster medicine, master's degree, medical education

Background

As a discipline, disaster medicine has become extremely important in the recent past, following the increase in mass casualty incidents and the spread of terrorism and of public health emergencies. Lessons learned from recent international complex emergencies suggest that health care professionals do not feel sufficiently competent or knowledgeable in this area, although many would welcome specific training. The medical scientific community has

become very sensitive toward disaster education and has been working to improve teaching and training standards in this field. The European Master in Disaster Medicine (EMDM) is a II level master's (60 unit credit program) organized by our research center in partnership with the Vrije Universiteit Brussel. During the last ten years, the EMDM has trained more than 300 students from more than 73 countries worldwide. However, the impact of this academic educational program on graduates' professional career in the field of disaster medicine was not definitively evaluated. The aim of this study was to explore the influence of the EMDM on students' academic or institutional career after graduation.

Methods

We conducted a cross-sectional observational study through a web-based survey. We sent out a survey invitation to all 288 EMDM alumni who participated to the first decade of the EMDM activity (from 2001 to 2010). The invitation was accompanied by a cover email describing the project and the aim of the study. The email message contained an embedded link to the survey and answers were logged in an electronic database created using the web-based application tool SurveyMonkey. The survey included twelve questions. We used descriptive analysis to describe the characteristics of respondents and calculated frequencies and proportions for categorical variables accordingly.

Results

One hundred eighty-six graduates worldwide completed the survey (64.6%). One hundred and two students did not answer probably due to wrong of email address; three unfortunately died during the decade. No specific refusal to answer was received. Most alumni (89.7%) stated that the EMDM assisted them to achieve their short and long term goals. Of the 186 respondents, 85 (45.7%) affirmed that the master's degree helped them to obtain a new better job or a higher position in their institutions. Eighty-two (44.1%) graduates entered in a national or international disaster preparedness organization and fifty-seven (30.6%) undertook an academic career. The large majority (88.8%) stated that the EMDM graduation facilitated their possibility to have new prospects and more contacts with experts in disaster medicine field and to enter in an international community. While 27 alumni (14.5%) were not involved in any kind of disaster preparedness and relief employment after the master, the highest percentage of graduates used their EMDM experience at local level (hospital, EMS, local civil protection) (66.3%) and at national and international level (19.9%). Finally, the largest proportion of respondents (67.8%) stated that the learning experience assisted them in further research in disaster medicine. The course was considered to be excellent in 53.4%, very good in 34.4%, interesting in 12.2%.

Conclusion

The study revealed that the EMDM had a positive impact on students' academic or institutional profession and career after graduation. The large majority of alumni were involved in disaster preparedness and relief programs and most of them entered in a national or international organization. A good proportion of graduates undertook an academic career and the EMDM learning involvement

assisted them in subsequent research studies in disaster medicine. Last of all, the EMDM experience was widely appreciated by all participants.

Or-083

Education and Training 1

VALIDATION OF A SCRIPT CONCORDANCE TEST COMBINED WITH ECG DURING AN EMERGENCY MEDICINE CLERKSHIP ROTATION.

Caroline Boulouffe (1), Xavier Muschart (2), Dominique Vanpee (1)

1. Emergency Medicine, CHU Mont Godinne, Yvoir, Belgium

2. Emergency Service, CHU Mont Godinne, Yvoir, Belgium

Corresponding author: caroline.boulouffe@uclouvain.be

Keywords: Script Concordance test, Uncertainty, Clinical reasoning

Introduction.One of the emergency physician's challenges is to think, to act and to treat patient with a high level of uncertainty (for instance: incomplete past history of the patient, life-threatening decisions with poor clinical information).

Since few years, Script Concordance Tests (SCTs) are increasingly used by educators to assess clinical reasoning, especially in situations of uncertainty. They compare the responses of examinees (students, trainees or residents) with those of panel of experts (PE). The examinee's answers are scored based on the level of agreement with responses provided by a PE. In recent years, teachers in Emergency Medicine (EM) also use SCTs. In emergency situations, the interpretation of an ECG, which is a commonly performed test, encounters a certain level of uncertainty. A last point could not be forgotten: according to the recent literature, the training of future emergency physicians remains challenging.

Facing these three corner stones (uncertainty among emergency situations, uncertainty among ECG's interpretation and challenge in training), the authors decided to construct and validate an SCT combined with an ECG (SCT-ECG) by submitting it to students, trainees and residents during their emergency medicine clerkship rotation.

Material and Method The 27-case SCT-ECG was constructed according to published guidelines and was composed of clinical vignettes based on actual cases, each followed by a series of three to four questions. The vignettes did not contain all the information needed by the student/resident to propose an unequivocal diagnosis, treatment or complementary examination. These types of vignettes mimic real-life emergency situations, when the physician lacks information. The representative clinical scenarios used in this study were selected by a group of three emergency physicians and based on various cases encountered in our emergency department and our prehospital setting.

Each test question consisted of three parts. The first part concerned a diagnosis, treatment option or a further

examination relevant to the situation and the ECG described in the vignette (ie, 'Your initial treatment is...'). The second part presented new information, such as a sign or condition, which might influence the student's/resident's diagnosis, treatment or complementary examination (ie, 'And then you learn that...'). The third part consisted of a five-point Likert-type scale on which the student/resident rated his/her reaction to the information presented for that item (ie, 'In relation to this new circumstance, your initial treatment is...').

The 63-question test was administered to medical students, residents and emergency physicians. Scoring was based on data from a panel of 12 emergency physicians.

The scoring process was based on the principle that any answer given by the group of physicians reflected the opinion of an expert.

The scores were obtained by encoding responses of experts and responders in an Excell format program.

The statistical analyses assessed the internal reliability of the SCT (Cronbach's α) and its ability to discriminate between the different groups (ANalysis Of VAriance followed by Tukey's post hoc test, SPSS 21.0).

Results The SCT-ECG was administered to 19 medical students, 24 residents and 12 emergency physicians. The internal reliability was satisfactory (Cronbach's $\alpha=0.81$).

Statistically significant differences were found between the groups ($F_{0.005}=20.89$; $p<0.001$). Moreover, significant differences (post hoc test) were detected between students and residents ($p<0.001$), students and experts ($p<0.001$), and residents and experts ($p=0.011$).

Discussion This SCT-ECG is a valid tool to assess clinical reasoning due to its high internal reliability and its ability to discriminate between different levels of expertise. It is an interesting tool to assess clinical reasoning during the emergency medicine clerkship because of its ability to investigate clinical reasoning in context of uncertainty. One of the main limitations of SCTs is the time required for their construction. Another limitation involved the difficulty of recruiting experts.

Conclusions This SCT-ECG tool assesses clinical reasoning in the context of uncertainty. In fact, the use of aggregate scoring of an expert panel closely reflects the reality of emergency medical practice. Thus, this method for evaluating clinical reasoning is valuable for the formation and assessment of future emergency physicians.

Or-084

Education and Training 1

HIGH FIDELITY SIMULATION ENHANCES ADVANCED CARDIAC LIFE SUPPORT TRAINING IN MEDICAL STUDENTS

Alpesh Amin (1), Craig L. Anderson (2), Cecilia Canales (3), Mark Langdorf (2), Shahram Lotfipour (4), Suzanne Strom (5), Luanna Yang (5)

1. Department of Medicine, University of California, Irvine, Orange, United States

2. Department of Emergency Medicine, University of California, Irvine, Orange, United States

3. Simulation Center, University of California, Irvine, Irvine, United States

4. Department of Emergency Medicine, University of California, Irvine, Orange, United States

5. Department of Anesthesiology and Perioperative Care, University of California, Irvine, Orange, United States

Corresponding author: milangdof@uci.edu

Keywords: Advanced Cardiac Life Support, Simulation, Education

Objectives: As traditional Advanced Cardiac Life Support (ACLS) teaching methods are largely unrealistic, we mixed didactics and high-fidelity simulation to test improvement in primary outcomes: time to CPR and defibrillation (DF). Secondary measures were total scenario score, dangerous actions, proportion of students voicing "ventricular fibrillation (VF)," 12-lead STEMI (ST-elevation myocardial infarction) interpretation, and return of spontaneous circulation (ROSC).

Methods: As part of our "Resuscitation Boot Camp" we taught 2010 ACLS to 19 senior medical students in didactic (12 hours) and experiential (6 hours) format. Immediately before the course, subjects were recorded performing a standard acute coronary syndrome/VF arrest scenario. We taught and assessed basic and advanced airway management. As the ACLS course's final test, each student was recorded repeating the same scenario. Two expert ACLS instructors scored the before and after performances on a 121-point scale. Each student served as their own control; we used t- and McNemar tests for paired data with statistical significance of $p < 0.05$.

Results: Before instruction, average time to CPR after arrest was 112 seconds, and to first DF 3.01 minutes. Students scored $45\pm 9/121$ points and 9/19 (49%) performed dangerous actions. After instruction, time to CPR was 12 seconds ($p = 0.004$) and to first DF 1.53 minutes ($p = 0.03$). Time to DF was delayed as students showed mastery of bag-valve-mask ventilation before DF. After instruction, students scored $97\pm 4/121$ points ($p < 0.0001$) with no dangerous actions. Before training, only 4/19 (21%) students performed both CPR and DF within 2 minutes, and 3 of these had ROSC. After training, 14/19 (74%) achieved CPR + DF < 2 minutes ($p = 0.002$) and all had ROSC. Before training, 5/19 (26%) students said "VF", 4/19 obtained an ECG but none identified STEMI. After training, corresponding performance was 13/19 "VF" (68%, $p = 0.021$) and 100% ECG and STEMI identification ($p < 0.05$).

Conclusion: This course significantly improved content and psychomotor skills. Critical actions required for resuscitation were much more common after training. High-fidelity simulation, despite increased cost, is an important and effective adjunct to traditional ACLS training.

Or-085

Education and Training 1

LACK OF TRAINING AND COMFORT LEVEL WITH PROVISION OF PALLIATIVE CARE IN PUERTO RICAN EMERGENCY DEPARTMENTS

Melissa Rosado-Rivera, Fernando Soto
Emergency Medicine Department, UPR School of Medicine, UPR Hospital, Carolina, Puerto Rico

Corresponding author: sotomd13@yahoo.com

Keywords: Palliation, End of life, Barriers

Abstract:

Title: Lack of training and Comfort level with Provision of Palliative Care in Puerto Rican Emergency Departments

Objective: Although many institutions in the United States have incorporated palliative care practices in their emergency departments, very little has occurred in Puerto Rico. Information regarding training in palliative care of emergency physicians in Puerto Rico is unclear and most have poor or no access to palliative care services for their patients. This study explores the perceptions and barriers encountered by practicing emergency physicians in providing palliative care in Puerto Rican Emergency Departments.

Methods: A survey was administered to physicians attending the American College of Emergency Physicians Puerto Rico Chapter Convention celebrated on June 1-3, 2012. Attending physicians and residents from the University of Puerto Rico School of Medicine validated the survey tool via a "content validity" approach. Participants were asked to respond to Likert scaled statements with options that ranged from "Strongly Agree" to "Strongly Disagree". The statements addressed physician comfort level with provision of palliative care and discussion of end of life issues, as well as barriers encountered by providers such as time constraints, fear of lawsuits, and lack of access to specialists among others.

Results: Of the 85 physicians at the convention 59 provided surveys available for review for a response rate of 70%. Of those surveyed, 35% reported feeling some level of discomfort at providing palliative care in the ED and 39.6% agreed or strongly agreed that their lack of training in palliative care affects their ability to provide this service. In addition, 81% lack access to palliative care specialists/teams in the emergency department. Despite this, 82.8% agreed or strongly agreed that palliative care is an important competence for emergency physicians.

Conclusions: Despite recognizing palliative care as an important competence, emergency physicians in Puerto Rico reported insufficiencies in training, decreased level of comfort, and lack of access to specialists in palliative care in the ED. Efforts to enhance physician training and provide palliative care resources must be pursued in order to improve the quality of care given to candidates visiting Puerto Rican Emergency departments.

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Education and Training 1

RESIDENTS' EXPERIENCES OF ABUSE AND HARASSMENT IN EMERGENCY DEPARTMENTS

Akram Zolfaghari Sadrabad (3), Hossein Alimohammadi (1), Farahnaz Bidarizerehpooosh (2), Reza Farahmand Rad (3)

1. *Emergency department, Imam Husain Educational Hospital, tehran, Iran, Islamic Republic of*

2. *pathology department, loghman hospital, tehran, Iran, Islamic Republic of*

3. *Emergency department, shahid sadooghi hospital, tehran, Iran, Islamic Republic of*

Corresponding author: azolfaghari88@yahoo.com

Keywords: abuse, emergency department, residency

Residents' experiences of abuse and harassment in emergency departments

Background: the widespread epidemic of emerging abuse in Emergency Departments (ED) towards Residents generates negative effects on the Residents' health and welfare.

Objective: The purpose of this study was to determine and highlight the high prevalence of abuse and harassment towards ED residents.

Method: In 2011, a multi-institutional, cross sectional study was conducted at seven ED Residencies of central hospitals in Iran. Residents were asked about their age, marital status, PGY levels and work experiences before residency. Prevalence of abuse in four categories were evaluated: verbal abuse; verbal and physical threat, physical assault and sexual harassment; and by whom. The data were analyzed by SPSS version 20.

Results: 215 of the 296 residents (73%) completed the survey. The prevalence of any type of abuse experienced was 89%; 43% of residents experienced verbal and physical threats, 10% physical assault and 31% sexual harassment. Verbal abuse and verbal and physical threats without the use of weapons were higher in men in comparison to women ($P < 0.04$). Women were more likely than men to encounter sexual harassment (31% vs. 7%, $p < 0.01$). Among the sexual harassment categories, sexual jokes (51%) were the most prevalent between residents. Junior residents (PGY-1) were more likely to experience abuse than senior residents (PGY-2 and PGY-3) ($p < 0.01$). Patients and their companions were the main agents of abusive behaviors.

Conclusion: Abuse and harassment during residency in EDs are highly prevalent. Educational programs and effective preventative measures against this mistreatment are urgently required.

Or-087

Education and Training 1

LET'S PLAY ER - VIDEOGAMES IN PRE-GRADUATE MEDICAL EDUCATION

Tiago Antunes (1), Ana Corredoura (2), Micaela Monteiro (2), Claudia Ribeiro (3)

1. *Computer Sciences, Instituto Superior Técnico, Lisboa, Portugal*

2. *Emergency Department, Centro Hospitalar de Lisboa Ocidental, Lisboa, Portugal*

3. *Information Systems and Computer Science, INESC-ID, Lisboa, Portugal*

Corresponding author: seeman.monteiro@netcabo.pt

Keywords: serious games, simulation, medical education

Background:

Traditional pre-graduate medical education, mainly teacher centred and based on reading, listening or watching, has proven insufficient in adult education and not adequate for teaching either technical or soft skills. There is also an increasing consciousness about the importance of approximating the learning environment to real life by simulation and immersive realities, especially in a safety critical area like medicine. Rethinking medical education must consider the opportunities offered by the new information technologies as well as important cognitive style changes of the new generation of trainees, the so called "digital natives". Videogames, so called "Serious Games", have attracted a lot of interest in the last years, as they appear to have a number of characteristics to answer these challenges.

Aim:

To know whether medical students are receptive to learn by playing serious games and how they evaluate the efficacy of this teaching/training method compared to traditional methods such as reading, listening to a lecture or attending a lesson.

Methods:

We developed a 3D simulation videogame based on the national guidelines on the transport of critically ill patients. The videogame was integrated in the learning curriculum of fourth year medical students during their practice in an Emergency Department (ED) of a teaching hospital. Other topics were taught in a lesson setting. The game was set in a realistic scenario of an observation unit. Students were asked to evaluate a patient and to decide which resources were needed for a safe transport. The game included information about learning objectives, briefing and debriefing of each clinical case, individual evaluation of the player, as well as awards for good performance. At the end of their practice in the ED students were asked to answer a questionnaire regarding their perception of the videogame's efficacy as learning and training tool in comparison to the traditional methods. They were asked if they would like to see videogames integrated into their curricula. Demographic data, as well as data regarding gaming habits were also collected.

Results:

The videogame was tested with 15 students (11 female, 4 male) with an average age of 22 years. 40% were usual gamers, 33% had previous experience with learning through a serious game. One student had previous training on the learning topic. 53% considered that videogames allow to acquire more, 27% an equal amount and 20% less knowledge than traditional teaching methods. 80% regarded that the knowledge would last longer when acquired through a videogame, 13% that it would last an equal amount of time and 7% less time. 93% considered that videogames allowed a better training of skills. 7% did not answer this question. All agreed that learning through videogames was more interesting. 67% would like to see videogames to be part of their learning and training

curriculum, 20% were indifferent and 13% would rather not have them integrated in the curriculum.

Conclusion and Discussion:

This sample of fourth year medical students, although small, showed a good acceptance of videogames as learning and training tools.

Videogames were considered as effective for acquiring knowledge as traditional methods. The students found that videogames performed better in the training of skills and that knowledge would last longer. They regarded videogames a more interesting learning experience and the majority would like to see them integrated in their curricula. It is know important to validate videogames as actually effective learning and training tools and to compare its efficiency with traditional methods in order to advocate their integration in the learning and training curricula of medical students.

Or-088

Education and Training 1

UNDERTRIAGE IN OLDER ED PATIENTS – A FIGHT AGAINST WINDMILLS? LONG-TERM EFFECT OF A TEACHING INTERVENTION

Roland Bingisser (1), Florian Grossmann (2), Christian Nickel (3)

1. Emergency Department, University Hospital Basel, Basel, Switzerland

2. Emergency Department, University Basel, Basel, Switzerland

3. Emergency Department, University of Basel, Switzerland, Basel, Switzerland

Corresponding author: christian.nickel@usb.ch

Keywords: triage, undertriage, adherence

Undertriage is an inadequate assignment of a triage level to newly arrived Emergency Department (ED) patients, indicating a false low patient acuity . Undertriage has been recognized as a major concern in the care for elderly ED patients as it occurs frequently and may negatively affects patient safety and patient outcomes. In a previous study we observed a high prevalence of undertriage in older ED patients applying the Emergency Severity Index (ESI), a triage tool with proven reliability and validity , also in older ED patients. The main reasons we identified were neglect of high risk situations and failure to appropriately interpret vital signs. As it is known that the neglect of serious conditions in older patients happens during the whole process of care and results in unfavorable outcomes, tackling the phenomenon of undertriage might help to detect patients at risk already at the beginning of the treatment process. In this study we aimed to test the effectiveness of a brief teaching intervention tailored to reduce inadequate triage decisions in elderly patients. We further aimed to test the hypothesis that in adherence to the triage algorithm is associated with undertriage. Lastly, we aimed to detect patient related risk factors for undertriage in elderly ED patients.

Methods: The study was conducted at the ED of the University Hospital Basel, Switzerland, an urban 700-bed primary and tertiary care center, with an annual census of 45000 ED visits. The study sample consists of all patients aged 65 years or older presenting to the ED in the study periods.

Intervention

We designed a brief teaching intervention on triage of older ED patients specifically addressing the pitfalls.

The intervention consisted of a 1 hour teaching session mandatory for all triage nurses. The content of the training session was based on the results of our former study. The main reasons for undertriage were addressed, and cases of undertriage which were exemplary, were presented and extensively discussed.

With this intervention we tried to increase awareness for the special care needs of elderly ED patients. Triage nurses were urged to interpret vital signs carefully and to consider assigning ESI level 2 very early. Further, the phenomenon of neglect of high risk situations was addressed.

RESULTS

Sample Characteristics

In the pre treatment group 519 patients were included. In the post treatment group 394 patients had an ESI Level assigned and were included into the analysis. The proportion of ESI levels differs significantly between the two groups for ESI 1-3 (two sample test for the equality of proportion, with continuity correction). The difference between the prevalence of undertriaged patients before (22.5%) and after the intervention (24.2%) is not significant ($\chi^2 = 0.248$, $df = 1$, $p = 0.619$). Also the undertriage rate per ESI level does not reveal significant differences.

DISCUSSION: Factual knowledge of the triage nurses was already high before the intervention. We could not show an increase of knowledge after the teaching session. As our data suggest, undertriage is not a matter of factual knowledge. Therefore, other reasons than lack of knowledge must be taken into account. Triage decision making relies on the interpretation of objective and subjective data. But not only technical skills to collect and interpret these data, which can be trained, are crucial. Moreover, environmental factors have been showed to affect triage performance: There is evidence that crowding leads to higher rates of undertriage. Furthermore, patient related factors seem to have an impact on triage decision making. Although age in our current study did not reach statistical significance in the risk factor analysis – possibly due to small sample size in very old age groups - there seems to be a trend towards undertriage with increasing age. We could show in our study that not only prevalence of undertriage is higher with increasing age but also that the proportion of patients presenting with non-specific complaints is higher in older age groups. Which leads to the hypothesis that undertriage might be linked to nonspecific symptoms at presentation in patients of older age.

Or-089

Education and Training 1

ASSESSING THE COMBAT CASUALTY CARE TRAINING TREATMENTS EFFECTS ON COMBAT SOLDIERS TRAINEES IN JORDAN ARMED FORCES

Rateb Abu Zaid, Mohammad Al-Kharabsheh, Arwa Ramadan, Raeda Al-Momani, Jehan Jameel Abo Jama'ah

Nursing, Royal Medical Services, Amman, Jordan

Corresponding author: rabu_zaid@hotmail.com

Keywords: Combat, Casualty, Trainees

Background: The use of military forces in field operations has increased considerably over the past years. As illustrated by the conflict in different countries, the Army finds itself fighting its toughest battles in field areas facing unconventional forces. Soldiers face many threats in hostile fire environments, or operations other than war. Jordan Royal Medical Services (JRMS) is integral to Jordan's national healthcare capability, providing comprehensive medical services to a third of the Kingdom's population and 22% of the Kingdom's hospital bed capacity. The National Emergency Medical Services Education Center (NEMSEC) was established to teach emergency technicians and tactical medic courses for individual soldiers and frontline commanders on operations within JRMS.

Objective: To assess the effects of the combat trainees' course for combat soldiers at Jordan Armed Forces.

Methods: A quasi-experimental, control group design was used. t-test was used to compare difference between convenience sample. The level of significance was set at $P < 0.05$. The changes between pre-test and post-test scores were examined for the 20 soldiers. Lectures about combat medic contents included care under fire, casualty evacuation, combat field, and hostile combatant casualty care were presented at NEMSEC. NEMSEC deliver a three-day course that takes combat trainees' to a level of advanced combat casualty care. The effect of the course was examined by comparing the results obtained from two groups: Group A, consisting of 10 participants who took the course; and Group B, which included 10 participants who did not take the course.

Results: The participants obtained an average score of 08.5 ± 0.5 on the pretest, and 18.6 ± 2.1 on the posttest. The scores of the course participants were higher than were those of the non-participants.

Conclusions and Recommendations: The positive effect of the course was confirmed. The combat medic course increases immediate short term knowledge of the combat medic for all soldiers at JAF.

Or-090

Education and Training 1

SIM ED – A SIMULATED EMERGENCY DEPARTMENT (ED) FOR TEACHING AND ASSESSING RESIDENT COMMUNICATION, MULTITASKING AND HANDOFF

Petru Codrin Nemes (1), David Marcus (3), Nathan Sandalow (3), Michael Cassara (1), Gino Farina (3), Barbara DeVoe (2), Robert L Kerner (2), Michael Serotoff (1), Robert Silverman (3)

1. *Emergency Medicine, North Shore University Hospital, Manhasset, United States*

2. *Patient Safety Institute, North Shore LIJ, Lake Success, United States*

3. *Emergency Medicine, Long Island Jewish Medical Center, new hyde park, United States*

Corresponding author: gfarina@lij.edu

Keywords: Patient Handoff, Patient Safety, Simulation

Teamwork and communication are essential to patient management in the ED. Communication errors are deemed to be the cause of 70% of sentinel events, and 62% of treatment delays due to communication errors are related to shift changes. ED's are especially exposed to "high error rates with serious consequences" according to the Institute of Medicine's, To Err Is Human. These errors may be also due in part to the complex multitasking skills required in high stakes situations. Few medical trainees receive formal education on handoffs, multitasking, and communication. We describe a novel "Sim-ED" platform that includes simultaneous care for multiple patients of diverse acuity and a handoff between two teams to fill this gap in medical education.

We used a combination of mannequins and standardized patients across five rooms in a high-fidelity simulation suite. Two clinical teams participated, each consisting of: one senior and two junior residents, and five nurse fellows. Patients presented sequentially during a 45 minute session ending with a two patient handoff to the oncoming team. Handoff was observed and evaluated by faculty. The second team continued managing active patients and received new patients over the subsequent 45 minutes. An inter-professional debriefing followed. Residents and faculty were surveyed (questionnaire with 20 items) using a five-point Likert scale: 1-least favorable, 5-most favorable, resident n=12, faculty n=5.

Sim ED was considered to be:

- similar to a real ED in regards to team management and communication (resident-4.33, faculty-4.20)
- useful to teach/evaluate team management and communication (resident-4.58, faculty-4.40)
- useful to teach/evaluate multitasking and resource utilization (resident-4.50, faculty-4.40)
- useful to teach/evaluate the handoff process (resident-4.33, faculty-4.40)
- overall superior experience compared to a single encounter simulation (resident-4.25, faculty-4.40)
- recommended to be integral part of Simulation curriculum (resident-4.83, faculty-4.60)
- helpful in real life clinical experience (resident-4.33, faculty-4.80)

The Sim-ED experience was perceived to be of high educational value to learners and simulated real-time practice better than a single encounter simulation. Faculty rated the session highly and appreciated the ability to evaluate resident teams in high acuity situations. The Sim-

ED proves to be a valuable tool for assessment of multitasking, communication, team work and handoff. Our platform may represent a unique method for evaluation of these qualities as part of the clinical competency assessment required by the Accreditation Council for Graduate Medical Education Milestones. This method may also be used as a training basis by simulating surges of critically sick patients mirroring the overcrowding phenomenon that occurs in today's Emergency Departments.

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Management-ED Organization 2, and Clinical Decision Rules

FORECASTING EMERGENCY DEPARTMENT PRESENTATIONS USING INTERNET DATA

Andreas Ekström (1), Lisa Kurland (2), Farrohknia Nasim (3), Martin Nordberg (2)

1. *Dept clinical science and education, Södersjukhuset, Karolinska Institutet, Stockholm, Sweden*

2. *Dept of clinical science and education, Södersjukhuset, Karolinska Institutet, Stockholm, Sweden*

3. *Emergency department, Södersjukhuset, Stockholm, Sweden*

Corresponding author: martin.nordberg@sodersjukhuset.se

Keywords: Forecasting, Patient volume, Health management

Introduction:

Prediction of emergency department (ED) presentations could be a means with which to reduce the risk of overcrowding and thereby increase patient safety. Mathematical models which consider time of year, and day and weather variables as predictive factors are commonly used, but are not suitable for short term adjustment of staff. In medical and non medical areas, prediction of outcome by using Internet data has proven efficient. There are no published studies using Internet data to predict ED attendance. If successful, this information could be used for adjusting scheduling and other adjustments in ED operations on a short term basis, thereby preventing overcrowding and increasing patient safety.

Objective:

The aim of this study was to investigate whether website activities on a well known Swedish medical website (vardguiden.se) could be used to predict the emergency department attendance during the next day. The model was to be tested both on an entire region (Stockholm County) and for individual hospitals active in that region.

Setting:

The study was conducted in Stockholm County, Sweden, with approximately 2 million inhabitants and a total of 700 000 emergency department visits in seven hospitals. The Internet use in Sweden is extensive. Swedes spend as much time on the Internet as they do watching TV. Over 90% of Swedes between the age 16 and 74 use the Internet at least once a week.

Method:

Website visits was measured with Google Analytics, and the number of visits to the emergency departments was retrieved from the Stockholm County Council administrated database VAL. All types of ED visits were included. The period of August 13th 2011 to August 12th 2012 was used as a training set for the model. The daily variation of visits was analyzed for both the website and the ED visits in order to determine the interval of hours to be used for the prediction. The number of visits to the website between 18:00 to 24:00 was then used to predict the total number of ED visits the next day. The prediction was conducted using linear regression, with website visits and weekday as independent variables. The model was evaluated with Mean Absolute Percentage Error (MAPE) for the period of August 13th 2012 to October 31st 2012.

Result:

Pearsons correlation between number of website visits during the evening (18:00-24:00) and next day ED visits in the county was calculated to $r = 0.77$, $p=0.05$. The best forecasting results for ED visits were achieved for the entire county with a MAPE of 4.8%. The result for the individual hospitals ranged between a MAPE of 5.2% and a MAPE of 13.1%.

Conclusion:

Website visits may be used in the fashion described above to predicted attendance to the ED. The model works both for the entire region and for individual hospitals, and has a stronger predictive capability than previous models using only time of year, and day or weather data as prognostic factors. The possibility of using Internet data to predict ED visits is promising.

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Management-ED Organization 2, and Clinical Decision Rules

OVERCROWDING IN THE ED: IN-PATIENTS DISCHARGED BEFORE IN-HOUSE BED AVAILABILITY

Donogh Burns (1), John Ryan (1), Nigel Salter (1)

1. Emergency department, St Vincent's University Hospital, Dublin, Ireland

Corresponding author: N.Salter@st-vincent's.ie

Keywords: Overcrowding, Boarding, Unscheduled returns

Introduction

Hospital overcrowding is an international problem, resulting in exit-block in the ED.¹ Using overcrowding hazard scales based on hospital and ED occupancy, a direct linear relationship has been demonstrated between the severity of hospital overcrowding and in-patient mortality rates.^{2,3} Furthermore, overcrowding in the ED as an independent risk factor leads to: significant delays in access to critical/intensive care treatments, an increased incidence of medical errors, increased rates of ambulance diversion with delayed access to emergency care, as well as being a direct impediment to major incident preparedness.⁴ As bed management teams struggle to deal with increasing ED attendance rates in Ireland, hospital capacity remains

limited; the term "boarding" of patients has evolved to describe this holding of patients in the ED when in-patient beds are not available.⁵ A new result of this ED boarding is a cohort of patients who having been referred to and admitted under a specialist team but who never actually get a bed in the hospital, and their in-patient treatment is completed in the ED. While in-patient mortality has been studied in the context of hospital overcrowding, the consequences for these discharged patients are not as clearly defined. A key indicator of effectiveness and safety of a patient's treatment is the unscheduled return rate to the ED for that patient cohort.⁶ This study was designed to look at the unscheduled return rate to the ED of boarded patients who never got an in-patient bed.

Methods

This retrospective study was conducted in the Emergency Department of St Vincent's University Hospital, Dublin, Ireland, which sees over 40,000 patients a year. A chart review was conducted for all patients attending the ED over a one month period (1st-30th September 2012 incl.) who were referred to a specialist team for admission and were discharged from the ED before getting an in-hospital bed. Electronic ED records and written medical charts were reviewed.

A patient's reattendance to the ED was recorded by consulting the electronic records. Telephone contact was made to patients and/or their GP to assess need for primary care over the 72 hours subsequent to admission.

The following parameters were recorded:

- Presenting complaint
- Duration of stay in the ED
- Discharge diagnosis
- Age
- Sex
- 30 day reattendance rate
- Interventions performed

The primary outcome measure was the rate of reattendance of discharged boarded patients to the Emergency department compared to new attenders.

Statistical analysis involved a t-test to assess for any significant difference.

Results

There was a total of 3295 new attendances to the ED from September 1st - 30th 2012, of whom 728 (22.1%) required hospital admission. 61 (8.4%) of these admitted patients were admitted by a specialty team but never got a bed in the hospital and completed their treatment in the ED. For three of these patients no further follow up was possible due to the non-availability of notes and these patients being non-contactable.

Table 1. Patient Demographics

Total 58
Male 33
Female 25
Average age/ yrs 60
Median age/yrs 66
Average duration of ED stay/ hours 37.6
Median duration of ED stay/ hours 26

Of the 58 boarded patients who were discharged from the ED, 6 (10.3%) returned to the ED over the subsequent 30 days. 83% of these were over the age of 70 years. 66%

presented with worsening sepsis despite out-patient treatment.

Of the 806 patients who were admitted to ward beds, 38 (4.7%) returned to the ED over the subsequent 30 days.

The mean difference in 30 day ED reattendance rate was 5.6% (95% CI: 5.3 to 5.9%, $p < 0.001$) The relative risk of ED reattendance for patient ED boarded patients compared to those admitted to hospital beds was 2.1 (95% CI: 0.9 to 4.7).

There were no deaths identified in ED discharge boarded patients at 30 days.

Conclusions:

There is a high rate of one month return to the ED amongst patients who never get an in-hospital bed.

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EARLY REVERSAL WITH PROTHROMBIN COMPLEX CONCENTRATE IN VITAMIN K ANTAGONIST-TREATED PATIENTS WITH SEVERE HAEMORRHAGE, DECREASED MORTALITY

Karim Tazarourte (1), Bruno Riou (2), Charles Marc Samama (3), Benjamin Tremey (4), Bernard Vigue (5)

1. Emergency Departement, Hopital Melun, Melun, France
2. Emergency Departement, CHU Pitié Salpêtrière, Paris, France
3. Anesthesiology, CHU Cochin, Paris, France
4. Anesthesiology, CMC Ambroise Pare, Neuilly, France
5. Critical care department, CHU Le Kremlin Bicêtre, Le Kremlin Bicêtre, France

Corresponding author: karim.tazarourte@ch-melun.fr

Keywords: prothrombin complex concentrate, Vka, Haemorrhage

Background: Vitamin K antagonist (VKA) therapy is associated with a high rate of mortality in patients with severe haemorrhage, in particularly those with intracranial bleeding. French guidelines recommend prothrombin complex concentrate (PCC) and vitamin K infusion for complete reversal of VKA therapy in case of severe haemorrhage.

Aim: This observational cohort study was set-up to test the hypothesis that early appropriate VKA reversal decreases 7-day mortality rate.

Methods: Prospective data from patients on VKA therapy admitted in 44 emergency departments with life-threatening haemorrhage were analysed, with particular attention given to intracranial haemorrhage (ICH), gastrointestinal, thoracic, or deep muscles bleeding. In addition to the type of haemorrhage, the International Normalized Ratio, the treatment and 7-day mortality were

recorded. Early reversal was considered appropriate when the guidelines (reversal perfusion of prothrombin complex concentrate (PCC) at a dose superior or equal to 20 IU/kg in equivalent-IX factor associated to, at least, 5 mg of vitamin K) were followed in a predefined delay of 8 hours after admission. A multivariate analysis was used to assess the role of early and appropriate reversal in 7-day mortality in all patients and in the ICH group.

Results: Over a 14-month period, data from 822 vitamin K antagonist-treated patients with severe haemorrhage were collected. The following bleeding rates were seen: gastrointestinal (32%), intracranial (32%), muscular (13%), and "other" (23%). The 7-day mortality was 13% (n=110) in the whole cohort and 33% (n=86) in patients with ICH. Appropriate reversal was performed in 38% of all patients and 44% of ICH patients. Multivariate analysis showed a significant two-fold decrease in the 7-day mortality rate in patients with early reversal (OR=2.15 [1.20 to 3.88]; $p=0.011$); this mortality reduction was also observed when only ICH was considered (OR=3.23 [1.53 to 6.79]; $p=0.002$).

Conclusion: When guidelines on VKA reversal are followed, the management of major haemorrhages with PCC and vitamin K infusion within 8 hours after hospital admission, is associated with a significant two-fold decrease in the 7-day mortality rate.

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Management-ED Organization 2, and Clinical Decision Rules

D-DIMER TESTING IN PERC NEGATIVE PATIENTS FOR THE DIAGNOSIS OF PULMONARY EMBOLISM

Jerome Bokobza (1), Adeline Aubry (2), Nicolas Nakle (3), Christophe Vincent-cassy (3), Dominique Pateron (4), Bruno Riou (1), Patrick Ray (5), Yonathan Freund (6)

1. Emergency Department, Hopital Pitie-Salpetriere, paris, France
2. Emergency Department, Hopital Pitié-Salpêtrière, paris, France
3. Emergency Department, Hopital Bicetre, Kremlin-Bicetre, France
4. Emergency Department, hopital Saint-Antoine, paris, France
5. Emergency Department, Hopital Tenon, paris, France
6. Emergency Department, Hopital Pitie-Salpetriere, Paris, France

Corresponding author: yonatman@gmail.com

Keywords: Pulmonary Embolism, PERC, Ddimer

Study objectives: Amongst patients with a low pre-test probability for Pulmonary Embolism (PE), the Pulmonary Embolism Rule-out Criteria (PERC) score has showed excellent negative predictive value. Despite this, controversy remains regarding the level of risk of missing a PE and hence the acceptance of an early rule out policy in PERC negative patients in the Emergency Department (ED). To improve the already high rate of accurate diagnosis, further diagnostic investigations would be mandated. However, additional diagnostic procedures and consequent treatment could lead to an increased risk of false positive patients, an increased risk of adverse events and prolonged hospital inpatient time with increased resource utilization.

We aimed to study the risks and benefits of D-dimer testing in PERC negative patients.

Method: This was a multicenter retrospective study in four EDs from the Paris metropolitan area, France. We included all patients with suspicion of PE that had D-dimer testing in the ED and a negative PERC score. We excluded patients with high or medium pre-test probability, and patients that had D-dimer testing in the setting of other potential thrombotic diagnoses, such as dural sinus thrombosis. The primary endpoint was the rate of confirmed PE in this population. Secondary endpoints included total rate of CT pulmonary angiography (CTPA) and ventilation-perfusion (V/Q) scans performed, and adverse events from these supplemental investigations.

Results: We screened 4301 patients that had D-dimer testing in the four EDs for the study period. Amongst those, 442 were excluded, and 2789 (55%) had a positive PERC score. We analyzed 1070 PERC negative patients that had D-dimer testing (ELISA assay). The mean age was 35 years and 46% were men. The D-dimer was positive (>500ng/L) in 167 (16%) of them; CTPA was performed in 143 (14%) cases and V/Q scans in 10 (1%). Six patients had a positive CTPA, with a PE confirmed in five of them (total rate 0.5%, 95% confident interval [CI] 0.1% to 1.1%), and one false positive (ruled-out after V/Q scan). Two patients experienced non-severe adverse events with generalized urticaria after iodine contrast injection, and 13 (1%) patients underwent unnecessary admission and were started on anticoagulant regimen.

Conclusion: The rate of new diagnosis of PE (0.5%) in our sample of PERC negative patients is similar to that reported in the general population. D-dimer testing in PERC negative patients could lead to increased resource utilization, with 15% of patients undergoing unnecessary imaging studies. The risks and benefits of utilizing these extra resources should be evaluated in a prospective trial.

Or-095

Management-ED Organization 2, and Clinical Decision Rules

AN AUDIT OF THE RECORDING OF ADULT VITAL OBSERVATIONS IN THE MAJORS AND RESUSCITATION DEPARTMENTS AT WANSBECK GENERAL HOSPITAL TO ASSESS COMPLIANCE WITH GUIDELINES SET BY THE COLLEGE OF EMERGENCY MEDICINE

Mark Harrison (1), Janaki Pearson (1)

1. *Emergency department, Wansbeck General Hospital, Northumbria Trust, Newcastle-upon-tyne, United Kingdom*

Corresponding author: janakipearson@me.com

Keywords: Observations, Recording, Guidelines

Introduction

When an acutely unwell patient presents to hospital evidence suggests clinical outcomes are dependent on early detection, timeliness of response and competency of the clinical response^{1,2}. The National Early Warning Score

(NEWS) was developed by the Royal College of Physicians to identify acutely unwell patients on arrival at hospital and within hospital and act in a timely fashion¹. The College of Emergency Medicine recommends all patients attending the Emergency Department should have their vital observations recorded within 15 minutes of arrival or triage and patients with abnormal signs should have them repeated within 60 minutes if abnormal³. Abnormal signs should be acted upon and recorded appropriately in the notes³.

Aim

To undertake an audit to assess whether Wansbeck General Hospital Emergency Department is compliant with standards set by the College of Emergency Medicine and to implement changes to improve compliance if necessary.

Objectives

1. Audit against the following standards set by the College of Emergency Medicine³:

- Patients triaged to the majors or resuscitation areas of the ED should have respiratory rate, oxygen saturation, pulse, blood pressure, GCS or AVPU score and temperature measured and recorded in the notes within 15 minutes of arrival or triage.
- Patients with abnormal vital signs should have their vital signs repeated and recorded in the notes within 60 minutes of the first set of observations.

- Abnormal vital signs should be communicated to the nurse in charge of that clinical area and documented in the notes
- There should be documented evidence that appropriate action was taken

2. Review audit results and implement an intervention

Method

A data capture sheet was devised to collect data from consecutive patients that attended Wansbeck A&E majors or resuscitation department in the month of February 2013. Abnormal signs are defined as per the guidelines on the Trust's NEWS chart.

Implementation will be made and the audit repeated.

Results

95% of patients' observations were recorded within 15 minutes and 100% of patients' observations were recorded within 30 minutes of arrival in the Emergency Department. 15% didn't have a full set of observations recorded initially. The main observations not taken were respiratory rate, GCS and oxygen saturations, in each case 5% but each from different patients.

66% of patients had observations re-recorded and 66% of these had a full set of observations. Of those re-recorded 0% were done so within 60 minutes however 83% were in the guideline time for their NEWS as set by the trust. The observation repeated least was respiratory rate, 33% of repeat observations didn't include respiratory rate and in each situation the initial recording for respiratory rate was abnormal.

Discussion

The audit clearly shows that current practice does not comply with College of Emergency Medicine guidelines. Various implementations will be made. Health Care Assistants, Nurses and Doctors will be educated in

improving practice and a sticker will be added to 100 sets of clerking documents with a box to record if abnormal observations have been communicated and what actions have been taken. The Audit will be repeated following the implementations to determine if there are improvements. A short survey of health professionals involved will also be used to identify barriers to meeting the standards. The main limitation of this audit was finding if an action had been taken on abnormal NEWS involved going through fluid charts and drug charts that in some circumstances may have been missing.

Documentation of NEWS and action taken on abnormal scores should be made integral to the triage clerking documentation to ensure acutely unwell patients are identified and action is taken to treat early. In addition to educating Healthcare Professionals and improving recording documents the trust needs to provide solutions to barriers seen by Healthcare Professionals to meeting the standards.

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Management-ED Organization 2, and Clinical Decision Rules

ROLE OF PULMONARY ULTRASONOGRAPHY IN RISK STRATIFICATION AND SAFE DISCHARGE FROM SHORT OBSERVATION UNIT OF PATIENTS WITH HEART FAILURE

Valentina Valeriano, Alessandra Revello, Antonio Simone, Cinzia Cancrini, Donatella Livoli, Shakib Ziyada, Francesco Rocco Pugliese
Emergency Department, S. Pertini Hospital, Rome, Italy

Corresponding author: valevaleriano74@gmail.com

Keywords: pulmonary ultrasonography, heart failure, risk stratification

Introduction: Heart failure is a disease characterized by an increasing incidence that requires repeated hospitalizations. It represents the 5% of patients admitted to the emergency department and 10% of diagnoses in hospital. Hence the need to obtain an accurate diagnostic classification of these patients through appropriate clinical care pathways and the ability to make a rapid assessment of the effectiveness of therapy. Aim of the study: Endpoint 1. To evaluate the role of the lung ultrasonography in risk stratification and clinical pathway of care in emergency room or short observation unit patients with mild to

moderate heart failure; Endpoint 2. To evaluate the role of lung ultrasonography as a parameter of early response to therapy in these patients. **Materials and Methods:** We studied patients come to the emergency department from January 1 to June 30, 2012 with signs and symptoms of acute or chronic heart failure. They were subjected to clinical evaluation, standard ecg and lung ultrasonography to study the interstitial edema through the comet tail artifacts (B Lines). From this initial evaluation were obtained 3 groups of patients: group 1, NYHA Class I, discharged directly from the emergency room and then out of the study, group 2 NYHA Class IV, hospitalized or transferred directly from the emergency room also out of the study, 3rd group, NYHA Class III, patients who went on with the study and the clinical course in short observation unit where they were subjected to therapy, clinical reassessment and new lung ultrasonography after 36 hours and then discharged, admitted or transferred to facilities with lower intensity of care. **Results:** We evaluated 1090 patients arrived in the emergency room presenting dyspnea, fatigue, and / or peripheral edema. Of these, 260 had a clinical condition of heart failure and were included in the first phase of the study: 40 pts in NYHA I (rule out), 155 pts NYHA IV (rule out), 65 pts NYHA III. The results about the outcome and the time spent in the emergency room and in short observation unit for patients in group III are shown in Table 1. Patients discharged from short observation unit showed a significant reduction of the B lines in the second evaluation (Fig.1). Patients who were admitted to short observation unit and transferred showed at baseline ultrasonography a greater finding of B Lines compared to patients discharged, and also, contrary to the latter, have shown a less significant decrease of the B Lines at the control ultrasonography (Fig.2). All patients in group 3 showed a reduction of B Lines after treatment and clinical stabilization within 36 hours. **Conclusions:** The use of lung ultrasonography in the evaluation of patients suffering from heart failure in the emergency department / short observation unit promotes a rapid risk stratification and a more appropriate location in the clinical care of these patients. This method also allows to evaluate the response to treatment of patients with heart failure. The reduction / disappearance of B Lines constitutes a parameter of response to therapy already after the first 24-48 hours.

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Management-ED Organization 2, and Clinical Decision Rules

USEFULNESS OF CURB-65 IN DECIDING DISCHARGE FOR PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA IN THE EMERGENCY DEPARTMENT

Rodolfo Ferrari (1), Lorenzo Dall'ara (1), Roberto Lazzari (1), Sara Tedeschi (2), Fabio Tumietto (2), Fabrizio Giostra (3), Claudio Borghi (4), Pierluigi Viale (5), Mario Cavazza (3)

1. *Emergency Department, Policlinico Sant'Orsola - Malpighi, Bologna, Italy*
2. *Unit of Infectious Diseases, Policlinico Sant'Orsola - Malpighi, Bologna, Italy*

3. Emergency Department, Policlinico Sant'Orsola - Malpighi, Bologna, Italy

4. Unit of Internal Medicine, Policlinico Sant'Orsola - Malpighi, Bologna, Italy

5. Unit of Infectious Diseases, Policlinico Sant'Orsola - Malpighi, Bologna, Italy

Corresponding author: dr.rofer@gmail.com

Keywords: Community-acquired pneumonia, Severity scoring systems, Discharge

Background Community - acquired pneumonia (CAP) is a common cause of hospital admission and a leading cause of increased morbidity and mortality. Emergency Physicians (EP), in the everyday real-life of the Emergency Department (ED), have to face the challenge to assess and determine the initial management and monitoring of Patients with CAP, identifying those at high, intermediate and low risk. Severity scoring systems (SSS) are used to predict risk profile, outcome and mortality, and to help decisions about treatment and management strategies; the most notable scales in common clinical use for CAP in the ED are CURB-65 and CRB-65, which showed some limitations but also high specificity and high positive predictive value

Aims To critically analyze cases in which EP's clinical judgement to discharge home and to treat out-of-hospital a Patient with CAP disagreed with the high-intermediate risk profile established by SSS. To determine the ability of SSS to accurately predict outcome and mortality in Patients with CAP in the ED

Materials and methods We conducted an observational prospective clinical single-centre study in the acute setting of the ED of a university teaching hospital, enrolling every consecutively non-selected adult Patient (aged ≥ 14 years) with CAP discharged home for out-of-hospital treatment. The diagnosis of CAP was defined on the presence of new infiltrates on chest X-rays with physical findings and compatible history. We prospectively analyzed and then retrospectively abstracted, in a 1 year period of our study (between April 20th 2010 and April 19th 2011), demographic, medical, clinical and laboratory data recorded in the ED, and the outcome (rebounds in 30 days)

Results 249 Patients (media 0.72 / day) were emergently evaluated and discharged home with diagnosis of CAP; 204 (81.9%) cases resulted in the low risk class according to SSS, the remaining 45 (18.1%) were at high-intermediate risk. We then compared high-intermediate versus low-risk groups; they were similar in many characteristics. About the main differences, the high-intermediate group showed higher values in: age, respiratory rate, urea and creatinin levels, prevalence of dyspnoea, transport by ambulance to the ED, rate of Arterial Blood Gas analysis, atypical clinical presentation, chest X-rays abnormal findings (two infiltrates, pleural effusion). Twelve patients (4.8%) presented to the ED twice and were then admitted (in media 4 days later). At the time of their first ED visit 3 (25%) were in the high-intermediate risk group according to SSS (and 9 were considered at low risk), but all 12 were in the low risk group at the time of their admission. Although the low number of cases in the "rebound" cohort, Patients admitted after having been discharged showed some slight

difference and abnormalities in laboratory parameters (in particular coagulation, renal function) and peculiar severe chest X-rays characteristics (two or more infiltrates, bilateral infiltrates, lobar infiltrates, pleural effusion). None of them died in-hospital; they all were discharged home in media after 9 days

Conclusions The ability and power of CURB-65 and CRB-65 to correctly predict mortality for CAP patients discharged home from the ED is not confirmed by our results. Future large prospective studies are required to draw more definite conclusions, and to define which parameters and markers are needed to develop and validate new or modified SSS, in order to increase the weight and value of some pivotal aspects in the triage process of CAP Patients in the ED, leading to an increased performance and discriminative capability to focus on the real need for hospitalization of the single Patient. In the everyday life of the ED, careful clinical judgement often disagrees with SSS (1 case in 5) and seems to be irreplaceable in the decision and management process, even beyond the routinely helpful support given by prediction rules and severity scores. There are many patients with a high-intermediate risk according to SSS that can safely be treated as outpatients, according to adequate welfare conditions; in this scenario we identified a subgroup of cases that should worth a special attention and, therefore, a brief observation period in the ED (6-36 hours) to assess the effectiveness of therapy, to ascertain the maintenance of clinical stability, and to have a contact with the General Practitioner, before the final decision to safely discharge or admit

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Management-ED Organization 2, and Clinical Decision Rules

CHRONIC DISEASE IN THE ED: THE MISSING LINK IN INTEGRATED CARE?

Kelly Janssens (1), Richard R.L. Drew (1), Timothy J. McDonnell (2)

1. Emergency Department, St Michael's Hospital, St Vincent's University Healthcare Group, Dun Laogaire, Dublin, Ireland

2. Respiratory Medicine, St. Michael's Hospital, St Vincent's University Healthcare Group, Dun Laoghaire, Dublin, Ireland

Corresponding author: janssenk@tcd.ie

Keywords: Chronic Disease, Integrated care, the relationship between EM and other specialties, COPD

INTRODUCTION / OBJECTIVES

Noting that chronic disease (CD) accounts for two thirds of emergency medical admissions and approximately 80% of all healthcare costs, the Irish Health Service has established an initiative to improve quality of care, targeting six CD's in particular: COPD, asthma, diabetes, CCF, ACS, and stroke. Presently, 'integrated care' of CD generally refers to care by GP punctuated by specialist input on either an inpatient or outpatient basis and does not explicitly involve the emergency department (ED).

While CD's do account for two thirds of ED admissions, less than one quarter of ED presentations are admitted. A significant proportion of non-admitted cases also relate to one or more CD. The investigations and interventions in these acute presentations are rarely known to either specialist or GP and as such these de-compensations is not part of integrated care.

This study aims to (1) Quantify the cohort of chronic disease (CD) patients who present to the ED but are not admitted, comparing this quantity to the admitted cohort. (2) Compare ED interventions in the care of non-admitted CD patients with that of specialists in each CD. (3) Develop initiatives to potentially resolve problems identified by ED physicians working together with specialists and GP's.

METHODS

Quantitative Study:

During a 10-day period, coexisting CD's of all patients attending the ED acutely was recorded, as well as whether the CD was a contributing or determining factor to the presentation, as determined by the treating ED physician.

Qualitative Study:

Specialist doctors and nurses in each of the government targeted CD's were consulted, two of which were clinical leads in national programs (COPD and CCF). A working consensus was reached as to:

(A) How ED staff may contribute information from non-admitted CD related acute presentations to others involved in coordinated care; (B) How ED physicians might manage non-admitted CD related presentations in a way that is more consistent with their ongoing specialist care.

RESULTS

Quantitative study:

In 62% of ED presentations, patients had a diagnosed CD, 51% of these were one of the 6 CD's targeted by the government initiative, the most common of which was COPD and least common was asthma. In 59% of cases with a CD, the CD was either a determining or contributing factor to the presentation. While patients with CD did have a greater chance of being admitted (27% vs. 8%), the majority of those with CD were not admitted (73%), a 3-fold greater number of discharges than admissions.

Qualitative study:

All interviewed agreed that:

(A) Specialists and GP's were largely unaware of either the quantity or details of patients presentations to the ED unless they were admitted. The ED investigations and interventions of non-admitted chronic disease patients represented a significant information gap in the care of these patients.

(B) ED physicians could be treating CD-related discharges in a way that is more consistent with protocols in use by the specialties.

(C) An update pro forma highlighting CD related data may resolve some information gaps. Specialists from each disease advised on key clinical information that would be useful to include.

(D) Recommendations were made as to CD-specific admission and discharge criteria guidelines. Where possible, acute management and discharge therapeutic guidelines were provided for each CD that was more consistent with the current specialist care. This was done

using the model of bundled care, which has proven elsewhere to improve quality of care of patients with COPD.

CONCLUSION

1. There is a significant cohort of CD patients who present to the ED but are not admitted. This is nearly 3 fold larger than the admitted cohort. The clinical circumstances of these presentations, do represent a significant gap in the coordination of management in chronic disease.

2. ED acute management of CD is not always consistent with evidence-based guidelines in CD used by specialists.

3. These gaps in information and inconsistencies in care for non-admitted CD patients can be improved, and in doing so the ED can make a meaningful contribution to coordinated care of chronic disease.

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Management-ED Organization 2, and Clinical Decision Rules

DIAGNOSTIC PERFORMANCE OF THE ALVARADO SCORE FOR DIAGNOSING ACUTE APPENDICITIS

Mohammad Zikrullah Tamanna (1), Saleh Awad Al Rashdi (1), Turki Mohsen Al Harbi (1), Badr Al Otabi (1), Abdul Rahman Al Qahtani (1), Ahmed El Bashir (1), Uzma Eram (2), Abdul Muthalib Hussain (3)

1. *emergency department, King fahad medical city, Riyadh, Saudi Arabia*

2. *Community Medicine, J.N.Medical collage, Aligarh, India*

3. *Department of Pulmonary and Critical Care Medicine, King fahad medical city, Riyadh, Saudi Arabia*

Corresponding author: zikitam@gmail.com

Keywords: Appendicitis, Alvarado score, abdominal pain

Objective: Acute appendicitis is one the common differential diagnosis for acute abdominal pain made by emergency physician .A high index of suspicion and good clinical skills with aid of scoring system allows early decision. The aim of this study was to evaluate the diagnostic performance of Alvarado score for diagnosing acute appendicitis.

Methods: A retrospective study of 164 patients who presented to emergency department with right lower abdominal pain with suspected appendicitis for the last 8 month was reviewed. Patient demographics, presenting sign, and symptoms were documented. Using the scoring symptom for appendicitis, developed by Alvarado, each chart was retrospectively scored. Alvarado scores were correlated with pathological finding. Receiver Operating Characteristic analysis (ROC) was used to calculate the diagnostic performance of Alvarado score. Results - Out of 121 eligible patients 47 patients was found to have acute appendicitis by histo-pathological examination. The overall area under the Receiver Operating Characteristic curves for Alvarado score was 0.826 (moderately accurate). The Alvarado score has shown the diagnostic performance: sensitivity,85.11%; specificity, 74.32%; positive predictive value (PPV),67.8%; and negative predictive value (NPV)

88.71% ,respectively(using the cutoff value of ≥ 5 points). However the corresponding values were 59.5%, 85.14%, 71.79% and 76.83%, respectively (using the cut off value of ≥ 7 points).

Conclusion- Although the diagnosis of acute appendicitis remains mainly clinical evaluation, the scoring system is easy, simple and cheap complementary aid for supporting the diagnosis of acute appendicitis. By changing the cutoff value of Alvarado score from 7 to 5 the overall sensitivity of score increased from 59.57% to 85.11%, and the overall NPV of score increase from 76.83% to 88.71%.

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Education and Training 2

E-LEARNING TOOLS FOR EMERGENCY MEDICINE TRAINEES IN THE WEST MIDLANDS

Ranjna Basra (1), Helen Blackhurst (2), Chris Turner (2)

1. *Emergency Department, City Hospital Birmingham, Sandwell and West Birmingham Hospitals NHS Trust, Birmingham, United Kingdom*

2. *Emergency Department, Walsgrave Hospital, University Hospital Coventry & Warwick NHS Trust, Coventry, United Kingdom*

Corresponding author: Ranjna@doctors.org.uk

Keywords: E-Learning, Trainees, West Midlands

Introduction

In order to assess which E-learning tools were in use locally, doctors in the West Midlands region were surveyed on the various sites they employed. The aim of which was to identify particularly useful tools for learning, understand why they were accessed more often as well as to identify ways of improving eLearning within the West Midlands. As a secondary objective the survey aimed to recruit doctors interested in writing eLearning modules for ENLIGHTENme, a local eLearning tool focused towards Emergency Medicine (EM), which we are currently promoting.

Method

An online survey was conducted amongst West Midlands EM specialists and trainees as well as Foundation Year 2 (FY2) / General Practice Vocational Training Scheme (GPVTS) doctors working in Walsgrave Hospital (University Hospital Coventry and Warwick) Emergency Department (ED). The survey took place over 4 weeks in November 2012. 45 Emergency Medicine doctors and 7 FY2 / GPVTS doctors responded. The survey focused particularly on ascertaining the different sites doctors found useful for training and development, what aspects drew them to these as well as whether they would be willing to write contributions for EnlightenME.

Results

Of the 52 EM doctors surveyed the majority responders were ST4-6 year higher specialist trainees (35%) and Consultants (33%). The remainder were made up of 19% Acute Care Common Stem (ACCS) and 13% FY2/GPVTS year 1 trainees. Overall the most frequently used learning

resources were the BMJ's online learning modules. ST1-6 EM trainees however found eLearning For Health modules most useful whilst the consultants found BMJ and ENLIGHTENme equally helpful. Non-EM trainees favoured the BMJ modules. Of the sample set 13% had previously written e-modules and 73% expressed interest in writing contributions for ENLIGHTENme. Additionally, 17% reported they did not find online learning useful and suggested improvements such as easier access to a regional EM site with shorter interactive modules as well as an eForum.

Discussion

In the West Midlands EM doctors are using a variety of different eLearning tools. This ranges amongst the grades with consultants using the widest breadth of online resources. The BMJ learning modules were most popular probably relating to its easy and free access doctors initially gain from their student years. Not only do doctors know about them early but find it easy to navigate and get a record of printable certificates available as evidence towards their continual professional development. It is interesting that the College of Emergency Medicine (CEM) advises the use of ENLIGHTENme yet the uptake is still secondary compared to tools such as BMJ Learning. If the college prefer this to be the dominant eLearning tool to be used for EM then there is much promotion to be done especially by targeting the junior doctors grades FY2-CT3. The CEM have been developing this recently, with records of their annual spenditure on ENLIGHTENme as being £166,008 in 2011 compared to £77,666 in 2010.(3) However, if CEM aims to advocate its use as the main eLearning portal then more needs to be done.

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Education and Training 2

TRAINING IN CARDIOPULMONARY RESUSCITATION: WHAT IS THE PARAMEDICAL TEAM KNOWLEDGE

Christelle Hermand (1), Celine Lejeune (1), Dominique Pateron (1), Helene Piquet (1)

1. *Emergency department, Hôpital Saint Antoine, Paris, France*

Corresponding author: christelle.hermand@sat.aphp.fr

Keywords: cardiopulmonary resuscitation, training, simulation

Introduction: Cardiopulmonary resuscitation is a fundamental component of initial care for victims of cardiac arrest; this is an emergency procedure that requires rapid and efficient response. Regular practice and training are necessary to be efficient and to reduce anxiety among the staff. The aim of this study is to evaluate the level of knowledge of the paramedical team about the management of sudden cardiac arrest.

Methods: This is a prospective, observational, monocentric study. A two hours teaching was organized with small groups of nurses and auxiliary nurses: the first hour was a round table with theoretical reminder, questions and answers. The second hour was a simulation-based workshop and debriefing. An anonymous questionnaire was given at the beginning and at the end of the formation. The items were: how to recognize a cardiac arrest, what is the chain of survival, the first and second thing to do, who should be called, the rate of chest compression, how to use defibrillator and the drug to prepare .

Results: 49 nurses (42 from emergency department (ED), 6 from intensive care unit (ICU), 1 from pool department) with a mean experience of 8 years, 35 auxiliary nurses (30 from ED, 5 from ICU) with a mean experience of 7 years and 5 nurse students were assessed. The length of the service in the department was 38.8 months for the auxiliary nurses and 57.9 months for the nurses. One nurse and 7 auxiliary nurses have never participated in the management of patients in cardiac arrest. To the question "how to recognize a cardiac arrest", 38 (42.6%) answered no breath, unresponsive and pulseless, 85.4% are looking for the pulse, 13 (14.6%) didn't answer. Nobody has answered unresponsive and no breath. The term of chain of survival was unknown. For 68.5% of the participants, the first thing to do is calling for help and for 64%; the second thing is chest compressions. 60,7% (81% of nurses and 57% of the auxiliary nurses) knew the phone number to call. 37% answered that the rate of chest compressions is 100-120/min. 72% (87.7% of nurses and 48.5% of auxiliary nurses) are using automatic defibrillator without medicine doctor. 94% of nurses prepare adrenaline. After 2 hours teaching, 82% knew the criteria of cardiac arrest, 95.5% the rate of chest compressions and the phone number to call. 77,5% of the participants knew the algorithm with recognition, call for help, cardiopulmonary resuscitation, defibrillation and advance life support.

Discussion: There is a lack of theoretical knowledge in the management of cardiac arrest even with paramedical team with experience. Teamwork and communication are essential in crisis resource management. The use of scenarios allows improving behaviors and individual interactions. The simulation underlined that early defibrillation is not gained in the chain of survival.

Conclusion: Repeating teaching is essential in the management of cardiac arrest. Using simulation workshop is a good tool to improve organization and communication in a team.

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Education and Training 2

EXPERIENCE MATTERS - COST AWARENESS AMONG SWEDISH PHYSICIANS

Ulf Martin Schilling (1)

1. Emergency department, University hospital Linköping, Linköping, Sweden

Corresponding author: ulf.martin.schilling@gmail.com

Keywords: cost awareness, emergency department, pulmonary embolism

Background:

After our study five years ago, we conducted several measures to increase the knowledge about and to reduce investigation costs at the emergency department. This study was conducted to reveal if there was any change in cost-awareness compared to the status five years ago.

Method:

We e-mailed a standardized questionnaire to the emergency physicians and doctors working "on call" in internal medicine at our emergency department. Items asked for were rank and experience of the physician, and the estimated cost of D-Dimer, Doppler-sonography of the legs, chest X-ray, cardiac ultrasound, V-/Q-scintigraphy, pulmonary CT-angiography and pulmonary angiography. Estimated prices were compared to the costs 2011 as provided by the laboratory and radiology department. The department of physiology was merged with the radiology department since the previous study. Statistical analysis was performed by univariate Anova and the one-tailed Student's T-Test for independent samples.

Results:

38 questionnaires were recollected. A 25% difference between estimated and real cost was accepted as accurate. According to the physicians' experience the groups with less than 5 years (JG5, n=15), 5 till 9 years (JG9, n=13) and more than 9 years (SG, n=10) were compared in between and the matched groups from 2006.

No significant difference in years of experience between the matched groups 2006 and 2011 could be detected (table 1).

In 2011, all groups of physicians estimated costs more accurate than 2006. Consultants were more accurate than junior physicians and had the highest increase in accuracy compared to 2006, however, this increase did not reach a statistically significant. On all group level 2006 + 2011, consultants estimated significantly more accurate than the junior groups.

All groups tended to overestimate rather than underestimate costs.

Conclusion: Physicians working at the Swedish ED still seem rather unaware of the real costs of investigations. Consultants seem to be more aware about costs than junior physicians and specialists. A slight improvement in cost-awareness could be found in the general population of physicians', however, our data could not reveal a significant change in physicians' knowledge about costs. Further programs to enhance cost awareness at the ED might be necessary.

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Education and Training 2

A COMPARATIVE STUDY OF HEAD COMPUTED TOMOGRAPHY INTERPRETATION BETWEEN EMERGENCY PHYSICIANS AND RADIOLOGIST

Ali Arhami (1), Alireza Baratloo (1), Mohammadmahdi Frouzanfar (1), Behrooz Hashemi (1), Maryam Motamedi (1), Farhad Rahmati (1), Alaleh Rouhipour (2), Saeid Safari (1)

1. Emergency department, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of
2. Pediatric, Private, Karaj, Iran, Islamic Republic of

Corresponding author: alirezabaratloo@yahoo.com

Keywords: Emergency, Brain CT scan, Interpretation

BACKGROUND: Many patients are brought to crowded emergency department (ED) of hospitals every day for evaluation of head injuries, headaches, neurologic deficits etc. . CT scan of the head is the most common diagnostic measure used to search for pathologies. In many EDs the initial interpretation of images are performed by emergency physicians (EP). Since most decisions are made based on the initial interpretation of the images by emergency physicians and not the radiologists, it is necessary to assess the accuracy of interpretations made by the former group. The objective of this study was to compare the findings reported in the interpretation of head CTs by emergency physicians with a radiologist as the gold standard.

MATERIALS & METHODS: This was a prospective cross sectional study conducted from March to May 2009 in a teaching hospital in Tehran, Iran. All non-contrast head CTs obtained during the study period were copied on DVD and sent separately to a radiologist, 6 emergency medicine (EM) attending physicians and 14 senior EM residents for interpretation. Clinical information pertaining to each patient was also sent with each CT. The radiologist's interpretation was considered as the gold standard and reference of comparison.

Data from EM physicians and residents were compared with the reference as well as with each other and statistical analysis was performed using SPSS 18.5.

RESULTS: Out of 544 CT scans, EM physicians had 35 false negatives (13.1%) and 53 false positives (19.1%) compared with radiologist's interpretations ($P < 0.0001$). EM residents had 74 false negatives (21.3%) and 12 false positives (6.1%) compared with radiologist's interpretations ($P < 0.0001$).

CONCLUSION: Both EM physicians and residents either missed or falsely called a significant number of pathologies in their interpretations. The interpretations of EM physicians and residents were more sensitive and more specific respectively. This finding revealed the need for increased training time in head CT reading for residents and the necessity of attending continuing medical education workshops for emergency physicians.

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Education and Training 2

FREE OPEN ACCESS MEDICAL EDUCATION AS AN EMERGENCY MEDICINE RESIDENCY TRAINING PROGRAM EDUCATION SUPPLEMENT.

Matthew Vasey, Marc Kanter, Fernando Jara
Emergency Department, Lincoln Medical and Mental Health Center,
New York, United States

Corresponding author: matthewvasey@hotmail.com

Keywords: Education, FOAMed, Social Media

Background: The function and utility of the internet is known. A consensus role of the emergency physician, teaching, and learning through the internet is yet to be established. The evolving concept and technological methods of Free Open Access Medical Education (FOAM and FOAMed) was originally termed during a podium presentation at the 2012 International Conference on Emergency Medicine by Dr. Mike Cadogan, further described and updated on the Life In The Fast Lane website.^{1,2} For the purpose of this abstract, FOAMed is the acronym that will be used. FOAMed has been referenced favorably in United States emergency medicine community resources.^{4,5,8} The educational medium and content of FOAMed are not without criticism from this community.⁷ The impact of social media on a major international emergency medicine conference has been described.⁶ Cheston et al. concluded social media is an emerging field of scholarship with both challenges and opportunities for innovation in education.³ To the authors knowledge the term FOAMed is not described in the national or international peer reviewed literature.

Objectives: The purpose of this study is to determine if utilization of FOAMed resources are considered a useful supplemental emergency medicine residency education tool by forty-one residents when surveyed.

Methods: Lincoln Emergency Medicine Residency is a four-year emergency medicine training program with forty-one residents in the South Bronx, New York, USA accredited by the Accreditation Council for Graduate Medical Education. The Lincolnemresidency.com webpage was used to link to forty-seven broadly categorized randomly selected FOAMed resources. A five question survey and a form to submit critical academic appraisal for discussion were created using Google Documents and embedded in the private department login section of the webpage. Residents were invited by email to voluntarily and anonymously complete this survey.

Results: Forty of forty-one residents completed our online survey with 'Yes' or 'No' answers. These questions with number of responses are described. Did you use FOAMed before it was presented on the department webpage? (17 yes, 23 no) Have you learned from FOAMed? (32 yes, 8 no) Have you been provided the opportunity to engage in

critical academic appraisal and discussion of FOAMed within the department? (20 yes, 20 no) Will FOAMed supplement your traditional learning habits? (37 yes, 3 no) Would you recommend utilization of internet FOAMed resources be a supplemental EM residency teaching tool in other EM residencies? (36 yes, 4 no) The form titled "Have an academic concern about content of a LincolnEM FOAMed Project post? Submit your name and critical academic appraisal for discussion" received no submissions. Conclusion: With a clear method for raising critical appraisal and a forum for discussion of content, FOAMed resources could represent a useful educational supplement to an emergency medicine residency training program.

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Education and Training 2

MEDICAL STUDENTS TEACH BASIC LIFE SUPPORT TO NON-MEDICAL STUDENTS: A FEASIBILITY STUDY

Anne-laure Philippon (1), Jerome Bokobza (2), Serge Carreira (3), Julie Pernet (1), Bruno Riou (2), Alexandre Duguet (3), Yonathan Freund (1)

1. Emergency Department, Hopital Pitie-Salpetriere, Paris, France
2. Emergency Department, Hopital Pitie-Salpetriere, paris, France
3. Respiratory and intensive care unit, Hopital Pitie-Salpetriere, paris, France

Corresponding author: yonatman@gmail.com

Keywords: Basic Life Support, Simulation, Education

Introduction: Mortality following Cardiac Arrest (CA) is highly correlated to the quality of first responders' Basic LifeSupport (BLS). Many studies highlight the lack of knowledge and poor quality of BLS provided by both the generalpopulation and by medical students. In a project entitled « See one, Do one, Teach ten », we aimed to combine theteaching of BLS to medical students and to their non-medical student peers of our university. We recently introduced asimulation based course on BLS for our medical students.Objectives: The objectives of the present study were to assess the feasibility of this project in a pilot group, and evaluatethe performances of non-medical students in BLS after a simulation-based course performed by medical students

Material/Patients and Methods or Expected Audience: In 2012, fourth year medical students participated in two two-hour sessions of simulation based teaching on BLS, with a low fidelity manikin (Resusci Ann, Laerdal ®). Ten of themwere then asked to teach a similar one-hour course to 100 non-medical students (one medical student taught ten non-medical students). Two months after the course was completed, we randomly tested ten non-medical students on thequality of their BLS, using a modified Cardiff Score.Results / Requirements/Specific needs: We evaluated ten non-medical students with a low fidelity manikin on asimulated out of hospital cardiac arrest scenario. 100% called immediately for help and looked for signs of life, 90% usedthe correct hand position for chest compression, and compressed the chest at a rhythm higher than 100 per min in 100%of cases. The automated external defibrillator was correctly placed and used in 100% cases. Median depth of chestcompression was 5cm and higher for 20% of students. All students scored more than 80% in the modified Cardiff score,what is considered as excellent.Conclusion / Description of the session: After a short simulation based course, medical students appear to beeffective in teaching BLS to the public. The Cardiff scores we report from non-medical students are excellent. This preliminary study highlights the possibility to develop at a large scale the training of laypersons by our medical students,after a short course of simulation based teaching on BLS.

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Education and Training 2

IS SIMULATION BASED EDUCATION EFFECTIVE ON THE PRACTICE OF MEDICAL STUDENTS IN ADVANCED CARDIOVASCULAR LIFE SUPPORT?

Hamid Reza Reihani (1), Niaz Mohammad Jafari Chogan (1), Hossein Karimi Moonaghi (2), Ehsan Bolvardi (1)

1. Emergency Department, Mashhad University Of Medical Sciences, Mashhad, Iran, Islamic Republic Of

2. Medical Education Department, Mashhad University Of Medical Sciences, Mashhad, Iran, Islamic Republic Of

Corresponding author: reihanihr@mums.ac.ir

Keywords: simulation based education, cardiopulmonary resuscitation, advanced cardiac life support

Background: The knowledge and skills of resuscitation of medical staff is one of the efficient factors in the quality of CPR. Resuscitation is a critical process so, its education to medical students and staff is very important. Simulation technology is one of the educational techniques is being used for this purpose. It augments the knowledge and skill levels of trainers and provides a secure and controlled field for practice. In this study we taught ACLS to interns by this technique in the skill laboratory and evaluated their competencies.

Method: In this study 40 interns of Mashhad University of medical sciences took part in their emergency medicine rotation (from sep. to dec. 2012) in ACLS workshop with pretest and post test exams. The pretest consisted of 10 OSCE stations that students should pass the exam before the course. Then they participated the work shop. After 2 weeks they participated again in the OSCE stations. The checklist for each station was designed according to the AHA guidelines. The data were described by descriptive statistics and analyzed by paired t-test and spearman correlation test.

Results: The total score of the student had a significant increase after the workshop (from 24.6/100 before to 78.6/100 after workshop), that demonstrates 53.9% improvement in the skill, after the simulation based education ($p < 0.001$). Also the mean score of each station had a significant improvement ($p < 0.001$).

Conclusion: This study showed that education of ACLS by simulation and mega code manikin is accompanied by a great increase in student learning. So, it is suggested that this kind of education should carry a special consideration in the learning skills of medical students.

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Pre-Hospital-EMS 1

PATIENTS WITH ACUTE CORONARY SYNDROME AND STROKE THROUGHOUT THE ACUTE HEALTHCARE CHAIN

Rolf Egberink (1), Marlies Zwerink (2), Hanneke Droste (3), Paul Brouwers (3), Gert Van Houwelingen (4), Carine Doggen (2)

1. Centre for Emergency Care Euregio (Acute Zorg Euregio), Medisch Spectrum Twente, Enschede, Netherlands
2. Health Technology and Services Research, MIRA institute for Biomedical Technology and Technical Medicine, University of Twente, Enschede, Netherlands
3. Department of Neurology, Medisch Spectrum Twente, Enschede, Netherlands
4. Department of Cardiology, Thoraxcentrum Twente, Medisch Spectrum Twente, Enschede, Netherlands

Corresponding author: c.j.m.doggen@utwente.nl

Keywords: myocardial infarction, stroke, acute health care chain

Background: For patients with acute coronary syndrome (ACS) and stroke prompt diagnosis and treatment is essential. In most cases of myocardial infarction blood flow needs to be restored through percutaneous coronary intervention (PCI) or through thrombolytic medications. Treatments are most effective if started as early as possible. For patients with ST-elevated MI (STEMI) PCI should be started within 90 minutes. For ischemic stroke patients thrombolysis with recombinant tissue plasminogen activator (rt-PA) needs to be given within 4.5 hours after onset of symptoms. Before a patient reaches a PCI center or stroke unit he may have had contact with a general practitioner (GP), a GP cooperative (GPC), ambulance service, or Emergency Department (ED), and probably with more than one acute health care provider. It is of utmost importance that patients with ACS and stroke are diagnosed as early as possible and promptly reach the right health care provider for optimal treatment. Therefore, optimal use and efficient functioning of the acute health care chain is imperative. To identify possible delays and bottlenecks, insight into the overall acute care chain is necessary.

Aim: The aim of this study is to obtain insight into 1) circumstances in which symptoms of patients occur, 2) medical contacts throughout the acute care chain, 3) delays stratified by health care providers, and 4) door-to-balloon time for patients with STEMI and door-to-needle time for patients with ischemic stroke.

Methods: The MICK study is a prospective observational study including 202 patients suspected of having ACS (mean age 63.3 y, 65.8% men) and 239 suspected of ischemic stroke (69.9 y, 49.8% men). Patients were hospitalized in one of three coronary care units (CCU) or in one of four stroke units in the region of Twente and Oost-Achterhoek (Euregio), the Netherlands, over a period of 18 weeks. Patients filled out a questionnaire and additional data was obtained using registries.

Results: 75% Of all patients was at home when symptoms occurred and 50% had their own partner present. Over 40% of all patients suspected of ACS waited more than 6 hours before contacting a health care provider and over 30% of all patients suspected of having a stroke waited more than 4 hours. Patients with more severe symptoms sought medical contact earlier. Once a care provider was contacted, 45% of all patients with ACS were hospitalized within 90 minutes at the CCU and 65% of patients with stroke within 4 hours at the stroke unit. Over 80% of ACS patients first contacted the GP or GPC, compared with 72% of stroke patients. After contact with the GP, about half of the patients were transported by ambulance, whereas after contact with the GPC 80% of ACS patients and 64% of stroke patients were transported by ambulance. Patients reached the hospital through many different health care chains. ACS patients reached the CCU via 'GPC-ambulance' (25%), 'GP-ambulance' (24%), and various other routes (51%). Stroke patients reached the stroke unit via 'ambulance-ED' (24%), 'GP-ED' (23%), 'GP-ambulance-ED' (23%) and 'GPC-ambulance-ED' (14%). For patients who immediately called

112, the emergency number, time to hospitalization was shorter than for patients who first contacted a GP or GPC. Of ACS patients 87% reached the CCU within 90 minutes when the only contact was with an ambulance, compared to 'GPC-ambulance' (57%) and 'GP-ambulance' (40%). Similar results were found for patients with stroke; of the 'Ambulance-ED' chain 77% reached stroke unit within 4 hours, compared to 'GP-ambulance-ED' (50%), 'GPC-ambulance-ED' (48%) and 'GP-ED' (15%). Median door-to-balloon time of the 30 patients with STEMI (out of 202 suspected ACS) who underwent a PCI was 50 min. Only one patient had a PCI within 90 min after first medical contact. Median door-to-needle time of the 31 patients (out of the 182 patients with ischemic stroke) who received thrombolysis was 43 min. Most thrombolysis (93%) took place within 4 h after the first medical contact. Conclusion: Noticeable are the long patient delays in seeking care, the various chains through which patients reach the CCU or stroke unit and the different throughput times. Calling 112 and transport by ambulance is the fastest track. Circumstances and characteristics such as type and seriousness of symptoms, may explain why most patients first contact a GP or GPC. This may explain why it takes longer for these patients to reach the CCU or stroke unit.

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Pre-Hospital-EMS 1

ACCURACY OF DIAGNOSING SEPSIS AND EARLY ANTIBIOTIC TREATMENT IN THE PREHOSPITAL SETTING

Ole Bayer (1), Frank Bloos (1), Christiane Hartog (1), Steffen Herdtle (2), Christian Hohenstein (3), Bjoern Kabisch (1), Jens Reichel (4), Konrad Reinhart (5), Raik Schaefer (3), Katja Schneider (1), Angelika Stacke (1), Christoph Stumme (1), Johannes Wi

1. Intensive Care Unit, University Hospital Jena, Jena, Germany
2. Emergency Medicine Department, University Hospital Jena, Jena, Germany
3. Emergency Medicine, University Hospital Jena, Jena, Germany
4. EMS, University Hospital Jena, Jena, Germany
5. Anaesthesiology and Intensive Care Medicine, University Hospital Jena, Jena, Germany
6. Dpt. of Anaesthesiology, university hospital jena, Jena, Germany

Corresponding author: christian.hohenstein@med.uni-jena.de

Keywords: Sepsis Care, Prehospital Medicine, Observational Study

INTRODUCTION

Early antimicrobial administration is associated with increased survival in patients with septic shock (1). Actual data showed a relevant incidence rate of severe sepsis with 3.3 per 100 emergency medical service encounters (2). For this reason three emergency medical services vehicles and one rescue helicopter were equipped with a „Sepsis-Kit“ containing 2 g Ceftriaxone and two blood culture sets.

OBJECTIVES

Retrospective observational study to evaluate the accuracy of diagnosing sepsis and initiate immediate antimicrobial treatment in the prehospital setting.

METHODS

Emergency physicians were asked to initiate sepsis therapy with the “Sepsis Kit” directly on site. If sepsis was suspected, the emergency physician obtained blood cultures and started antimicrobials as well as fluid therapy on site. The patient was then transferred to the hospital. The sepsis diagnosis was confirmed by clinical and laboratory findings in the emergency department. Also, time from first contact with EMS to the first dose of antibiotic was recorded.

RESULTS

56 patients with suspected sepsis were admitted to the emergency room between March 2012 and April 2013. Patients median age was 73 [IQR 65-82] years, initial body temperature 39.4 [IQR 38.7-39.7]°C, peripheral oxygen saturation 91 [IQR 86-94]%, heart rate 108 [IQR 91-126] beats/min and mean arterial pressure 102 [IQR 80-114] mmHg. 64% had tachypnea. SAPS2 Score was 30 [IQR 26-35]. Time until administration of antimicrobials and intravenous fluids was median 19 [IQR 18-24] min. No allergic reaction was observed. Patients arrived at hospital after 56 [IQR 46-67] min. Workup in the emergency department confirmed the sepsis diagnosis in 49 patients (87,5%). 26 (46.4%) patients had severe sepsis or septic shock. Most common sources of sepsis were respiratory (43%), urogenital (21%), skin and soft tissue (8.9%) and abdominal (8.9%). Initial median values were procalcitonin 0.5 [IQR 0.2-2.0] ng/mL, leukocytes 11 [IQR 9-15] Gpt/L and C-reactive protein 65 [IQR 35-139] mg/L, serum lactate 2.1 [IQR 1.4-3.6] mmol/L. 61% patients had a positive blood culture. Ceftriaxone was the appropriate antibiotic therapy in 69% patients. Patients received 2.5 [IQR 1.5-3.0] litres crystalloids until admitted to the ER. Only 5 (8.9%) patients were discharged from hospital on the same day. Three (5.4%) patients died.

CONCLUSIONS

The majority of preclinical sepsis diagnoses proved to be correct. Furthermore, in about two thirds of patients, blood cultures were positive and the initial antibiotic proved to be appropriate. It seems worthwhile to begin early sepsis treatment in the prehospital setting. Preclinical initiation of broad antimicrobial therapy seems to lower the overall mortality rate. Further studies are necessary.

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Pre-Hospital-EMS 1

THE ROLE OF HEMOSTATIC PRODUCT-IMPREGNATED DRESSINGS IN THE PRE-HOSPITAL CONTROL OF EXTERNAL BLEEDING. PROSPECTIVE OBSERVATIONAL STUDY.

Hugues Lefort (1), Stéphane Travers (1), Cédric Ernouf (1), Olga Maurin (1), Bérengère Distinguin (2), Emmanuelle Fontaine (1), Mickael Lemaire (1), Sylvie Margerin (1), Daniel Jost (1), Jean-michel Tourtier (1), Laurent Domanski (1)

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France

2. Emergency Medical Department BSPP, Military University of Val-de-Grâce, Paris, France

Corresponding author: hdldefort@gmail.com

Keywords: external bleeding, hemostatic dressing, pre-hospital

Introduction: Pre-hospital medical services are, in certain cases, confronted with external bleeding that is poorly controlled by the usual means (compression, compressive dressing, tourniquet, etc.). The use of new dressings impregnated with hemostatic products has been reported in military settings for the management of war wounded. The aim of this study was to review the patients treated with those dressings in civilian settings and confirm their efficacy.

Materials and methods: Multicenter, prospective, observational study. QuikClotGauze™ (QG) hemostatic dressings (kaolin-impregnated gauze strips) were provided to pre-hospital medical teams after personnel training. A specific questionnaire was completed after each use in order to collect age, gender, prior intake of anticoagulant treatment, wound type, hemodynamic parameters, hemostatic procedures already implemented, and reasons for prescription of QG. The efficacy criterion for QG was total arrest of, or decrease in, bleeding. Adverse effects and difficulties encountered in use were also collected.

Results: From June 2011 to March 2013, 24 uses of QG were collated in contexts of aggression (n = 11), accident (n = 9), suicide attempt (n = 3) or post-operatively (n = 1). The median age was 34 years [25.8; 46.75] and there were 83.3% men. The wound inflicting agent was most frequently a knife or equivalent (62.5%) and the wound site was most frequently cervical and/or cephalic (45.8%) with active bleeding described as arterial in 66.7% of cases. The QG was used due to inefficacy of local compression or a compressive dressing in 18 (75%) of cases and an area inaccessible to a tourniquet or compression point (CP) in 13 (54.2%) of cases. For two patients, QG application enabled removal of the tourniquet or CP before transport. QG application enabled complete arrest of bleeding in 18 (75%) of cases and a decrease in bleeding for the other patients. No complication or adverse effect was reported during the pre-hospital phase or during dressing removal in the hospital environment.

Discussion: This pre-hospital study suggests that QG has a role in complementary treatment in addition to standard hemostatic procedures. A larger scale study needs to be conducted in order to determine the benefit of the treatment in terms of survival.

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Pre-Hospital-EMS 1

THE USE OF INTRAMUSCULAR EPINEPHRINE BY BASIC LIFE SUPPORT PROVIDERS FOR RESPIRATORY EMERGENCIES IN A LARGE URBAN EMS SYSTEM

Matt Friedman (1), Gino Farino (2), Douglass Isaacs (1), David Ben Eli (1), Bradley Kaufman (1), Ryan Bayley (1), Glenn Asaeda (1), John Freese (1), Robert Silverman (2)

1. Office of Medical Affairs, Fire Department City of New York, New York, United States

2. Emergency Medicine, North Shore - Long Island Jewish Health System, New Hyde Park, United States

Corresponding author: mattsfriedman@yahoo.com

Keywords: Epinephrine, Asthma, BLS

Introduction:

Unlike most anaphylaxis protocols, very few EMS systems allow for Basic Life Support (BLS) administration of epinephrine for patients experiencing severe asthma exacerbations. Early epinephrine treatment is a key therapy for preventing untoward outcomes in patients with reversible disease processes. In June 2010, the NYC regional EMS protocols were expanded to allow BLS to administer epinephrine to asthmatics in severe respiratory distress, in addition to the previously protocolized anaphylactic reactions. We aimed to determine the frequency of BLS administration of epinephrine for asthma and anaphylaxis to identify the impact of this medication for each protocol.

Methods:

We conducted a retrospective, chart review of the NYC 911 EMS system to identify all cases where BLS providers administered epinephrine. All Prehospital Care Reports (PCRs) were electronically queried for a specific BLS epinephrine administration code during a 30 month period from July 1st, 2010 until the end of 2012. PCRs included patient characteristics, vital signs, airway management interventions, Advanced Life Support (ALS) involvement, medication administration, presumed diagnosis, and outcomes. Each PCR was independently reviewed by a physician for verification of diagnosis, to determine if epinephrine was indicated and to ensure that ALS providers were not on scene at time of administration. Respiratory distress was indicated by a checkbox on the PCR and corroborated by the independent reviewer based on a respiratory rate (<10; >36) or provider narrative.

Results:

115 cases of BLS epinephrine administration prior to ALS involvement were identified, with patients ranging in age from 6 to 83 years old. 79 (68.7%) patients were treated with epinephrine secondary to asthma while 36 (31.3%) patients were administered epinephrine due to an anaphylactic reaction. 36 (31.4%) of all patients treated with epinephrine exhibited severe respiratory distress or true anaphylaxis. Of these 36 patients, only one patient's condition deteriorated to cardiac arrest. Of the 115 cases, there were 2 cases when epinephrine use was not indicated.

Conclusions:

When EMS protocols allow for BLS providers to administer epinephrine for anaphylaxis and asthma, the majority of indications will be for asthma. Respiratory distress secondary to asthma or anaphylaxis was diagnosed in 31% of this cohort suggesting a large number of patients who would benefit from early epinephrine therapy. It is likely that some of these patients' conditions would deteriorate if epinephrine administration was delayed until ALS arrival on-scene or BLS arrival in the hospital. EMS protocols that provide for BLS use of epinephrine in asthma and anaphylaxis may benefit many more asthmatic patients than anaphylaxis patients.

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Pre-Hospital-EMS 1

ALS-RN TRANSPORT IS A COST-EFFECTIVE ALTERNATIVE TO CRITICAL CARE TRANSPORT

Paul Kivela (1), Brian Meader (2), James Pierson (3)

1. Medical Director, Medic Ambulance, Vallejo, United States
2. Quality Supervisor, Medic Ambulance, Vallejo, United States
3. Director of Operations, Medic Ambulance, Vallejo, United States

Corresponding author: drkivela@nvemg.com

Keywords: Critical Care Transport, Alternative, Cost-effective

Introduction: Traditionally there are three modalities utilized for ground interfacility hospital transports (IFT): Basic Life Support with driver and EMT, Advanced Life Support (ALS) with driver and paramedic, and Critical Care Transport (CCT) with driver, EMT/paramedic and RN. Whereas BLS and ALS transports are often rapidly available, CCT transports are often encumbered by delays, primarily in response time. STEMI transports, trauma, and many other transports are time sensitive. Because paramedic scope of practice limits what paramedics can do, many CCT transports were previously required because of special drug infusions. We looked to establish a cost-effective hybrid system that took advantage of the speed of an ALS transport and the scope of practice of a RN transport and created the ALS-RN transport with a driver and RN.

Methods: This is a prospective observational study. Our agency provides the exclusive ALS services for the county and also provides CCT transports on request. During the study we evaluated runs for response times, reasons for transport, and services provided and a variety of quality measures. Safety measures followed included deaths, intubations, untoward events, and patient decompensation as defined as requiring diversion to an alternative hospital. Afterwards, cost savings were based on actual ALS-RN receipts versus CCT cost estimates.

Results: From initiation of the program on May 1, 2012 until March 1, 2013 our agency performed 2387 total interfacility transports. There were 51 CCT transports and 359 ALS-RN transports. There were 23 STEMI ALS-RN transports and 21 Trauma ALS-RN transports. 65% of the transports had a drug infused that was beyond the scope of paramedic care. Of the ALS-RN transports, there were no

deaths, diversions, nor intubations. There were two patients that were cardioverted in route. Average response time from call to the initiating facility was 12 minutes 46 seconds where as critical transport was reported to be in excess of 40 minutes. There was no change in the anticipated number of ALS transports during the study period. Medicare payment for an ALS-RN transport is at least 35% less than the same CCT transport. Savings are similar for third party insurance and public assistance (Medi-Cal/Medicaid).

Conclusions. ALS-RN transport is a safe, reliable, and cost-effective alternative to critical care transport for STEMI, trauma and other select patient transports and should be considered in any venue where there is a significant need for time sensitive interfacility transports.

Authors Paul Kivela, MD; James Pierson, EMT-P; Brian Meader, EMT-P
Medic Ambulance Vallejo, CA USA

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Pre-Hospital-EMS 1

THE TRUE COVERAGE AND TIMING OF THE NORWEGIAN NATIONWIDE AIR AMBULANCE SERVICE.

Erik Zakariassen, Oddvar Uleberg

Department of Research, Norwegian Air Ambulance Foundation, Drøbak, Norway

Corresponding author: erik.zakariassen@igs.uib.no

Keywords: Air ambulance, Response time, Emergency

Background: Norway is a sparsely populated country, with 4 800 000 inhabitants in 2011, where 50 % lives in the south-eastern part of Norway around Oslo, the main capital. The prehospital emergency medical service consists of emergency medical communication centres (EMCC), ground ambulances, primary care doctors on-call and the air ambulance. The air ambulance is publicly funded and part of the national health care system. The main objective of the air ambulance is to provide specialized emergency medicine to potentially severely injured or critically ill patients. There are 11 EMCCs responsible for the activation of the service, based on common guidelines. The main staffing consists of a pilot, specially trained anaesthesiologist and a paramedic/rescuer. There are twelve ambulance helicopters and six rescue helicopters also staffed with an anaesthesiologist. The rescue helicopters main operations are Search and Rescue, but are an integrated part of the air ambulance service. A White paper from year 2000 stated that a physician-manned ambulance should reach 90 % of the population within 45 minutes. This is part of the justice principle; wherever you live you are entitled to the same level of specialized health care.

According to map circles of 30 minutes flying time, 15 minutes of estimated response time and the population in the different geographical areas, the air ambulance service

covers nearly 97 % of the total population within 45 minutes. This is possible if the helicopter is at base when alarmed, and a straight-line-route to site is possible due to good weather. There is a lack of national figures that shows differences between bases on real flying time and rate of missions.

The aim of this study was to establish real figures for flying time to site and rates of acute primary missions in Norway.

Method: All air ambulance bases in Norway record every mission prospectively and ANS publish annual official statistics. We asked ANS for detailed operational data from every acute primary mission in 2011, including the requesting municipality and flying time to the scene. We also asked for severity score data defined with use of NACA. Severity is defined with a score number from zero to seven, where zero means no sickness, four to six a potentially life-threatening condition and seven is a dead patient. We included all ambulance helicopters and two of the rescue helicopters (Bodø and Lakselv). Rescue helicopters in Bodø and Lakselv are the only accessible helicopters in their region. Based on the data collected, we could extract the exact numbers of missions to the different municipalities, rates and exact figures of flying time on every mission. Data on population in the municipalities was extracted from Statistics Norway. Rate is presented as X / 10 000 inhabitants (CI) / year, and flying time (minutes) and NACA score as median with 25-75 % percentiles.

Results: A total of 5 493 acute primary missions were completed in 2011. Especially in southern Norway the different bases had several missions to the same municipalities, which resulted in a overlapping population estimate of 5 954 000 inhabitants. This estimate resulted in a national mission rate of 9.0 (9.0-9.5) / 10 000 inhabitants with a range from 4.7 (4.1-4.6) to 32.7 (29.8-35.6), with a statistical significant difference between the bases. Rate based on actual population in Norway in 2011 (4.8 mill) was 11.4 (11.1-11.8). Median flying time for the missions was 19 minutes (13-27) with a range between 15 (11-21) and 38 (27-47) minutes. In 20 % of the missions the flying time was more than 30 minutes, which constitute approximately 1 100 patients. Median NACA score was 4 (3-5).

Conclusion: In the majority of the missions the helicopters did reach the patients within 45 minutes (15 minutes response time and 30 minutes flying time). There was a statistical significant difference in rate of missions between the different bases, which could be explained by differences in population density and unequal level of activation threshold by the many different EMCCs.

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Pre-Hospital-EMS 1

PRE-HOSPITAL ANALGESIA: HAS THE OBJECTIVE OF THE EXPERT RECOMMENDATIONS BEEN ACHIEVED?

Gwenaëlle Majoufre (1), Anne-claire Michel Ep. Mlynski (1), Hugues Lefort (1), Daniel Jost (1), Catherine Verret (2), Romain Jouffroy (1), Flora

Jourquin (3), Michaël Lemaire (3), Jean-pierre Tourtier (1), Laurent Domanski (1)

1. *Emergency medicine departement, Fire Brigade of Paris, Paris, France*

2. *Centre d'Epidémiologie et de Santé publique des Armées, Hopital d'instruction des Armées Bégin, Saint-Mandé, France*

3. *Pharmacy and biomedical engineering departement, Fire Brigade of Paris, Paris, France*

Corresponding author: anne-claire@mlynski.net

Keywords: Analgesia, Guideline Adherence, Wounds and Injuries

Introduction: The 2010 expert recommendations for pre-hospital emergency analgesia recommend the objective of achieving a pain level ≤ 30 mm on a visual analog scale (VAS) ranging from 0 to 100. This study aimed to determine whether the objective of the recommendations was achieved by emergency physicians practicing in pre-hospital settings and under what conditions.

Materials and methods: Prospective, observational study. **Inclusion criteria:** victim in pain managed by a pre-hospital medical team and having received at least 1 intravenous morphine injection and 2 VAS evaluations. **Data collected:** age, gender, painful disease, VAS at the start and end of management, analgesics or analgesic combinations (AC) administered. The primary assessment criterion was the percentage patients for whom the objective of VAS ≤ 30 mm was achieved.

Results: From September 2010 to June 2011, 76 patients were included. The median age was 41 years [19-55]. There were 51 (67%) men. With regard to the 4 AC most frequently used (n = 62), the analgesic objective of VAS ≤ 30 mm was achieved for 34 (54%) patients. Morphine alone (n = 21) enabled achievement of a VAS ≤ 30 mm in 11 (52.4%) patients; the morphine plus paracetamol AC (n = 25) in 12 (48%) patients; the morphine plus ketamine AC (n = 8) in 7 (87.5%) patients and, in 100% of cases if only the painful diseases of traumatic etiology were considered. Lastly, the morphine plus ketamine plus paracetamol AC (n = 8) achieved the objective in only 4 (50%) patients. There was no significant between-AC difference in the percentage of patients with VAS ≤ 30 mm (overall Fisher's test, p = 0.28).

Discussion: The main limitation of this study is the small number of subjects. However, it is to be observed that the results for morphine alone support the necessity of multimodal analgesia, particularly in the context of injuries. Questions may also be raised with regard to the use of paracetamol for pain in pre-operative analgesia since the VAS was ≥ 50 mm.

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Pre-Hospital-EMS 1

RESEARCH IN PREHOSPITAL EMERGENCY MEDICINE: COMPARISON BY GEOGRAPHIC ORIGIN OF PUBLICATIONS

Stéphane Travers (1), N Segal (1), Olga Maurin (1), Sabine Lemoine (1), Cédric Ernouf (1), Daniel Jost (1), Patrick Plaisance (2), Jean-Pierre Tourtier (1).

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France

2. Emergency Medical Department, Hôpital Lariboisière, Paris, France

Corresponding author: olgamaurin@free.fr

Keywords: pre-hospital publication, european publication, impact factors

Introduction:

The quality and the quantity of emergency medicine scientific studies have increased substantially in the past 10 years. Researches are mostly made by North American teams, and are mainly conducted in emergency departments.

No study to our knowledge has tried to compare geographical origin of prehospital-based publications.

The aim of our study was to describe the number of prehospital emergency international publications by country and continent, as well as the level of the journals where the articles were published.

Material and Methods:

This was a retrospective literature review from January 1st, 2010 to December 31st, 2011 including studies related to out of hospital emergency medicine.

Publications were searched in the Medline database. The keywords were: prehospital, out-of-hospital cardiac arrest, paramedic emergency. Studies categorized as "clinical trial", "controlled clinical trial", "comparative study", "multicenter study", "randomized controlled trial" and "validation study" were included.

Each abstract was read and only researches in the field of prehospital emergency medicine were included. Data collection focused on the country of origin of the first author and the Impact Factor (IF) of the journal where the article was published. The IF used was that of the 2011 Journal Citation Report (JCR). Country data were then grouped by continents (geographical definition).

Results:

393 articles were found on pubmed. After reading the abstracts, 377 were emergency medicine publications conducted in the out of hospital environment and were therefore included.

The Impact Factors of the journals of publication were found for 357 articles. The 20 others corresponded to journals not referenced in the JCR.

Europe contributed 164 (43.5%) of the total publications and ranked top among all continents, followed by America (N = 131, 34.7%), Asia (N = 59, 15.7%), Oceania (N = 22, 5.8%) and Africa (N = 1, 0.3%). All articles from America were conducted in the United States of America (USA) and Canada. All those from Oceania came from Australia and New Zealand.

The median impact factor of European publications was the highest (3.6), followed by Asian publications (3.5), north America (2.5) and Australia (1.8).

By country, USA largely dominated with 30% (N=113, median IF=2.5) of the total publications, followed by Germany, Japan, United Kingdom, Australia and France.

Among European Society for Emergency Medicine (EuSEM), 7 countries accounted for 83% of EuSEM publications : Germany (19%, N=31, median IF=2.2), United Kingdom (15%, N=24, median=2,2), France (12%, N=20, median IF=3.6), the Netherlands (11%, N=18, median IF=3.5), Austria (10%, N=17 IF median=3.6), Sweden (9%, N=14, median IF=3.6) and Norway (7%, N=11, median IF=3.6).

Conclusion:

In the field of prehospital emergency medicine publication, Europe was the most active continent in 2010 and 2011, in terms of quantity (43% of worldwide publications) and quality of published articles (median IF=3.6), followed by North America and Asia.

The six countries with the highest number of publications were the USA, Germany, Japan, United Kingdom, Australia and France.

These results demonstrate the interest of European countries for prehospital emergency medicine, whatever prehospital emergency model they have chosen.

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Pre-Hospital-EMS 1

UNIVERSITY STUDENTS' FIRST AID KNOWLEDGE AT ADMISSION TO A BRAZILIAN UNIVERSITY

Iago Caires (1), Sarah Souza (2), Stella Santos (1), Jéssyca Souza (2), Rafaela Santos (3), Marília Bonuti (2), Rafael Martimiano (2), Maria Rita Margarido (1), Pedro Palha (2), Antonio Pazin-Filho (1)

1. Emergency Department, FMRP-USP, Ribeirão Preto, Brazil

2. Emergency Department, EERP-USP, Ribeirão Preto, Brazil

Corresponding author: apazin@fmrp.usp.br

Keywords: first aid, pre-hospital emergency system, lay person education

Background: Since most of medical emergencies occur out of hospital, the victims' survival is a direct relationship to the general population's first-aid knowledge. Therefore, some basic first aid skills should constitute part of the pre-university education. Nevertheless, first aid education on basic level is still relative recent in Brazil and we thought to investigate the knowledge of first aid of university students at admission and to verify if the chosen course had any influence on it.

Objective: 1) To evaluate University students' first aid knowledge at admission to a Brazilian University and whether the chosen course had any influence on it. 2) To evaluate the factors which influence a decision of a student to take a first aid course.

Methods: We applied a three-question questionnaire to the University of São Paulo - USP Ribeirão Preto students within two week of their admission to university to avoid that any knowledge acquired in the university environment could be a confounder. Its aims were: 1) to assess the

students' knowledge of how to assess the Brazilian Emergence Medical System asking which phone number they should call (written answer - they should write the number instead of a multiple choice question); 2) to estimate their ability to recognize an emergence situation (yes/no/ don't answer); and 3) their capacity to carry out first aid care in a cardiac arrest case, evaluating both the technical knowledge of cardio-pulmonary resuscitation and the use of an Automated External Defibrillator (AED) (written answer). We also asked if the students had any interest in participating of a first-aid course. We used Student t test and chi-square for comparing groups in univariate analysis and logistic analysis with a forward stepwise approach for multivariate analysis. We used a content analysis to derive variables which expressed if technical aspects of chest compress technique and DEA were cited in the written answer number three.

Results: Out of 1365, 1038 students (76.04%) were included – Biological (59.5%), Exact Science (11.7%) and Humanities (28.6%)- for the sake of evaluation, Exact Science and Humanities were grouped in Non-Biological. Regarding knowledge of how to access the emergency system, 58.5% were able to do so. All students, independent of the area of their courses, were able to recognize emergency situations – 98.6% and 96.2% of the students would call the Emergency Medical System in a situation of heart attack and stroke, respectively, while 93% and 92.1% of them recognized this wasn't necessary in a situation of hangover and indigestion, respectively. When faced with a possible cardiac arrest, 17.6% of the students would perform CPR, 0.2% of the students were able to described chest compression technique, 0.1% to inform its ideal frequency and 0.1% cited the AED – all of whom were biological courses students. Finally, 64.9% of the students showed interest in participating of a first-aid course. To evaluate the impact of a biological course as an influence, we used knowledge of the emergency system number as an outcome and adjusted age, sex, origin, having a previous college graduation and having a cardiac diseased relative using logistic regression. The odds ratio was 1.24(95% confidence interval 1.01;1.54) for the biological group. Considering the factors influencing the student's intention of taking a first aid course, a biological course (OR 1.24; 95%CI 1.01;1.54), female gender (OR 1.46; 95%CI 1.29;1.60) and a relative with cardiovascular disease (OR 1.46; 95%CI 1.12;1.90) were independent predictors.

Conclusions: The university students' at admission were able to identify possible life-threatening condition to activate the emergency medical system, especially if they have chosen a biological course, but a significant percentage did not know how to do it. Besides that, they did not know how to act in a cardiac arrest, even though a considerable number would like to be trained in doing so. Taking a biological course, being of the female gender and having a relative with cardiovascular disease were independent predictors for willing to take a first aid course.

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Trauma

YIELD AND CLINICAL PREDICTORS OF THORACIC SPINE INJURY FROM CHEST COMPUTED TOMOGRAPHY FOR BLUNT TRAUMA

Craig L. Anderson (1), Chelsea Bithell (1), Nooreen Khan (1), Mark Langdorf (1), Karin Reed (1), Robert Rodriguez (2), Armaan Rowther (1), Joelle Schlang (1), Bryan Sloane (1)

1. Department of Emergency Medicine, University of California, Irvine, Orange, United States

2. Department of Emergency Medicine, University of California, San Francisco, San Francisco, United States

Corresponding author: milangdof@uci.edu

Keywords: chest trauma, thoracic spine, decision rule

Background: A recent decision rule for blunt trauma which informs the decision to perform Chest CT imaging includes thoracic spine tenderness, altered mental status and distracting painful injury as potential predictor variables. T spine sagittal reconstruction from chest CT imaging is a separate study which generates technical and professional fees.

Objectives: To determine test characteristics of predictor variables alone and in combination to postulate derivation of a T spine injury decision rule.

Methods: Prospective cohort study in single urban Level I Trauma Center with historical 63% incidence of chest CT imaging for trauma activation patients.

Results: We studied 726 patients with chest CT (of 1099 blunt trauma patients, 66%) who had 21 T spine injuries (2.9%), and recorded these predictor variables. For 623 alert patients, 5 had T spine tenderness among 12 injuries, for sensitivity of 42%, specificity 85%, positive and negative predictive values of 5.2% and 98.7%, respectively. Positive likelihood ratio (+LR) was 2.8, while negative (-LR) was 0.69. Among the 21 T spine injuries, 9 (42.8%) had altered mental status. Corresponding values for altered mental status were 42.9%, 86.7%, 8.7%, 98.1%, with +LR 3.2 and -LR 0.66. 13 of 21 (61.9%) had distracting painful injury. Test characteristics were 61.9%, 64.7%, 5.0%, and 98.3%, with +LR 1.75 and -LR 0.59. Combining all these three predictor variables into a proposed decision rule captured 20/21 injuries (the false negative needed no clinical intervention), for test characteristics of 95.2% (95% CI 76.2%-99.9%), 49.1%, 5.3%, and 99.7% (CI 98.4-100%), with +LR 1.87 and -LR 0.10. Such a rule, if validated, would exclude 347/726 patients from T spine imaging (47.8%, CI 44.1-51.5%). Technical charge for each sagittal reconstruction was \$3070 and professional charge for radiologist interpretation was \$242, for combined charge of \$3311 per study. The rule would therefore save as much as \$1.15 million in charges in our population.

Conclusion: Sagittal reconstructions of T spine from chest CT imaging are of low yield, and generate significant charges. Patients who are alert, have no T spine tenderness and no distracting painful injuries are unlikely to have T spine injury (NPV 99.7% with -LR 0.10). Excluding them from such reconstructive imaging may save considerable charges.

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Trauma

DECISION-MAKING IN TRAUMA TEAM ACTIVATION AT A DUTCH LEVEL 1 TRAUMA CENTRE

Carine Doggen (1), Rolf Egberink (2), Danique Hesselink (1), Maarten Ijzerman (1), Arie Van Vugt (3)

1. Department HTSR, MIRA Institute for Biomedical and Technical Medicine, University of Twente, Enschede, Netherlands

2. Centre for Emergency Care (Acute Zorg Euregio), Medisch Spectrum Twente, Enschede, Netherlands

3. Emergency Department, Medisch Spectrum Twente, Enschede, Netherlands

Corresponding author: r.egberink@mst.nl

Keywords: Trauma team activation, decision-making, emergency department

Introduction: Trauma team activation is a kind of triage the staff of an Emergency Department (ED) exerts to determine whether a trauma team needs to be activated for severely injured patients and in what composition the team needs to be deployed. It is a difficult decision-making process which is often performed by ED nurses and led by guidelines and protocols. There are several factors influencing the decision-making process, such as patient factors, contextual factors and individual factors of the decision maker.

Objective: The objective of this study is to understand the trauma team activation decision-making process at a Dutch ED. Secondly, we want to obtain insight in the importance of several factors of influence on the decision-making process for trauma team activation according to ED nurses.

Methods: This study has a cross-sectional fractional factorial design. Six patient factors (attributes), of which four with four levels and two with three levels, were identified by literature review and discussed with trauma experts. SPSS® Orthoplan was used to generate a fraction (n=25) of all possible alternative scenarios (n=2304), that consisted of combinations of the attribute levels. Two combinations appeared to be impossible in practice and were removed. Three duplicate scenarios were added to evaluate consistency, but were left out for analysis of importance of the levels. Scenarios were presented to 44 ED nurses at a level I trauma centre using a questionnaire with a total of 26 clinical vignettes. ED nurses were asked to rank the attributes according to their perceived importance. The importance of the attributes and levels was calculated with (normalized) mean rank scores to assess the relative impact of the attributes and levels on the decision-making. A t-test was conducted to calculate the significance of the difference in attribute mean rank scores for two groups with <12.5 and ≥12.5 years of work experience. Consistency of the rank scores among ED nurses was calculated with the intraclass correlation coefficient (ICC).

Results: 27 ED nurses completed the questionnaire (response rate 61%). The number of team activations per respondent varied from one to five for normal ED team,

from zero to nine for basic trauma team and from nine to 20 for the full trauma team. According to the mean rank score Airway-Breathing (2.68) scored the highest attribute importance, followed by Mechanism of injury (3.19) and Circulation (3.37). After normalizing the level mean rank scores, the level Airway-Breathing unstable was the most important level for trauma team activation based on the relative rank sum weight (0.115), followed by Mechanism of injury Fall of height >5m (0.171) and Airway-Breathing Intubation (0.172). There was no difference in attribute mean rank scores between two groups of ED nurses, stratified for years of work experience. The ICC for the different levels occurring in the three duplicate vignettes varied from 0.432 to 0.795, from 0.712 to 0.802 and from 0.071 to 0.639.

Discussion: We observed variation in decisions for trauma team activation and in consistency of the rank scores among the ED nurses under study. This implies that a decision support system could improve uniformity in the trauma team activation decision-making process. With this study we obtained insight in the influence of several patient factors on the decision-making process for trauma team activation. The perceived importance of these attribute levels should be taken into account when a decision-support system is developed. The individual factor years of work experience seemed to have no influence on the perceived attribute importance in this group of ED nurses. In addition, other possible influencing factors such as contextual factors need to be taken into account. To be able to generalize these results, the study needs to be repeated in other (Dutch) EDs.

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Trauma

ELBOW EXTENSION AND POINT TENDERNESS ASSESSMENT TO PREDICT SIGNIFICANT ELBOW INJURY IN ACUTE ELBOW TRAUMA.

E.r. Hammacher (1), Kim Jie (1), M.f. Verhagen (1)

1. Emergency department, St Antonius ziekenhuis, Nieuwegein, Netherlands

Corresponding author: k.jie@antoniuziekenhuis.nl

Keywords: elbow, trauma, extension

Introduction: Elbow injury is a common presentation at the emergency room. There are no guidelines indicating which of these patients require radiography, whereas clinical decision rules for other limb injuries (e.g. Ottawa ankle rules) are widely accepted and resulted in less radiography and reduced waiting times. Previous studies suggest usefulness of elbow extension assessment to predict significant injury.

Aims & hypothesis: The aims of our study is (i) to assess the value of the extension test in our patient population, and (ii) to assess the added value of point tenderness at the olecranon, epicondyles and radial head in evaluating the need for radiographic diagnostics in acute elbow injury. In

addition, the reliability of physical findings by emergency care staff in elbow injury will be studied. We hypothesize that assessment of elbow extension in combination with point tenderness will provide a decision rule that predicts the absence of clinically significant injury, eventually aiming at a reduction of radiologic diagnostics (i.e. costs, radiation) and waiting times.

Methods: A prospective observational study at 2 emergency department locations in the Netherlands is currently ongoing. For every eligible patient with acute elbow injury, elbow extension and point tenderness at the olecranon, epicondyles and radial head are evaluated. A subgroup of patients is assessed by a blinded second investigator to analyse interobserver variability. All patients receive anterior-posterior and lateral elbow x-rays. Fractures are treated according to current guidelines and patients are followed at outpatients clinics. In total, 600 patients will be included. This is an interim analysis for the first 466 patients.

Results: (i) Out of 466 patients, normal extension was seen in 138 patients (30%). Normal extension predicted absence of a fracture or isolated fat pad with 89% sensitivity, 78% NPV, 55% specificity and 73% PPV. Four patients with normal extension had a fracture that required surgery. (ii) Absence of point tenderness in patients with normal extension was seen in 18 patients (3.9%), of which 11% showed a fracture and 1 required surgery. Addition of point tenderness to the extension test to predict absence of a fracture or isolated fat pad resulted in 98% sensitivity, 77% NPV, 22% specificity and 78% PPV. Interobserver analysis for extension and palpation of olecranon, epicondyles and radial head resulted in kappa values between 0.6-0.7.

Discussion: In contrast with previous publications, our interim analysis indicates that in acute elbow injury, the extension test alone or in combination with point tenderness assessment does not safely rule out clinically significant injury. Interobserver variability was substantial. We would not recommend to use the extension test (+/- point tenderness assessment) as a clinical decision rule to guide radiologic diagnostics in acute elbow trauma.

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Trauma

EVALUATION OF INTRAVASCULAR COOLING IN INJURED SWINE

Francoise Arnaud (1,2), Georgina Pappas (1), Ashraf Haque (1), Scultetus

Anke (1,2), Richard McCarron (1,2)

1. *NeuroTrauma, Naval Medical Research Center, Silver Spring, MD, United States*

2. *Department of Surgery, Uniform Services University, Bethesda, MD, United States*

Corresponding author: francoise.arnaud@med.navy.mil

Keywords: hypothermia, induced, accidental, hemorrhage, trauma, vital signs, temperature, intravascular cooling, swine model,

Evaluation of intravascular cooling in injured swine

F Arnaud, G Pappas, A Haque, A Scultetus, R McCarron.

Background: Induced hypothermia has been shown to provide neuroprotection during cardiac arrest; it is currently used for intensive care patients and for coronary bypass. In contrast, it is believed that development of spontaneous hypothermia following injury is a factor that contributes to the severity of patient outcomes. Being unable to initiate spontaneous hypothermia in an animal trauma model, we used an ancillary cooling method in a swine model to modulate core temperature after trauma in order to reach hypothermia. **Methods:** Two injury models were developed including a bone fracture-soft tissue injury (STI) and an uncontrolled arterial hemorrhage (HEM) model. Animals were instrumented and either uninjured (Sham) or subjected to STI or HEM injury with or without fluid resuscitation (500 mL Hextend). The animal's vital signs, mean arterial pressure (MAP), heart rate (HR), and cardiac output (CO), were monitored for a total observation period of 180 min. Rectal (Rec) and Swan-Ganz catheter (SG) temperatures were continuously recorded. An invasive intravascular method (Thermoguard device; Zoll medical) was used to maintain the internal temperature at 38o C (normothermic) or 33o C (hypothermic). This device uses a saline filled balloon-probe inserted via the femoral vein into the upper vena cava to cool the blood flowing around it. The cooled blood reaching the heart is in relatively close proximity to the Swan-ganz catheter. **Results:** Hypothermia (33o C) was attained within 70 min after the onset of injury and accurately maintained thereafter as indicated by the rectal temperature for most of the groups except for non-resuscitated HEM animals in which cooling took longer (~120 min). When additional fluid was provided post-injury, temperature exchange was improved and cooling was faster. During cooling, SG temperature departed noticeably from rectal temperature by 1o C in Sham and fluid resuscitated animal groups and up to 2.5o C in the non-resuscitated animals until target temperature was attained. Control of normothermia was prone to temperature overshoot prior to reaching target temperature, particularly when the animal temperature was initially above 38o C, resulting in transient drops of up to 1-2o C below the target temperature. Trauma resulted in changes in vital parameters: hemorrhage caused severe shock as evidenced by a sharp MAP and CO decrease in all HEM groups; STI shattered the femur into multiple pieces with severe damage to muscle and surrounding soft tissues causing an immediate but transient MAP and CO increase after the injury. Based on the vital signs, the injury severity spectrum ranked from least to most severe as Sham < STI < STI-no resuscitation < HEM < HEM-no resuscitation. Reducing temperature to 33o C had a direct effect: reducing HR, MAP and CO; there was no temperature effect on pulmonary artery pressure. This degree of reduction of physiologic indices due to temperature decreased with the severity of the trauma; it was similar in STI-injured swine compared to Sham animals but was slightly less for HEM-injured animals. **Conclusions:** The invasive intravascular femoral cooling device enabled moderate hypothermia to 33o C in ~70 min that resulted in reduction of

hemodynamic parameters (e.g., depressed MAP). However, we observed a gradient from the blood temperature close to the cooling probe to rectal temperature. Further studies with this polytrauma model are necessary to substantiate the effect of temperature on survival and physiologic parameters during trauma-associated hypothermia.

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Biomarkers, Diagnostic Tech./Radiology, and Imaging/Ultrasound/Radiology 1

THE EPIDEMIOLOGY OF PEDIATRIC INJURY IN SOUTH KOREA FOR 2007–2011 FROM NATIONAL EMERGENCY CENTER DATA

Jin Hee Jung (1), Young Ho Kwak (2), So Young Park (1)

1. Emergency department, Boramae hospital, Seoul, Korea, (South Republic of

2. Emergency department, Seoul national university Hospital, Seoul, Korea, (South) Republic of

Corresponding author: 77saja@hanmail.net

Keywords: pediatrics, injuries, epidemiology

Introduction: Injury is the most common cause of pediatric and adolescent deaths. Most acutely injured children visit an emergency department (ED). We investigated the epidemiology of injured children in South Korea.

Method: This prospective cohort study examined data for 5 years for 117–139 emergency centers registered in the National Emergency Data Information System (NEDIS). Variables were age, sex, province (16 metropolitan areas and provinces), injury intent and mechanism, results of emergency care, hospital discharge, and mortality rate.

Result: In the 5 years, 1,580,386 patients younger than 20 years were seen (19% of all ED patients). Based on the 2010 census for South Korea, the respective rates of injured children visiting an ED and mortality were 3,187 and 3.5 per 100,000 persons. The mean age was 7 years and 1-year-old children constituted the most common age group at 13.4%. The sex ratio was boys : girls=1.9:1, with the proportion of boys increasing over the 5 years. The injury mechanism was blunt injuries 29.4%, falls 18.1%, traffic accidents 12.1%, penetration injuries 7.3%, burns 4.0%, poisoning 0.2%, asphyxia/hanging 0.2%, and drowning 0.1%. Of the traffic accidents, 34.7% involved passengers, 27.1% pedestrians, 19.5% cyclists, and 18.6% motorcyclists. Traffic accidents and falls decreased over the 5 years, while blunt and penetrating injuries increased. Of the injuries, 94.1% were non-intentional, 2.3% involved violence/murder, and 0.5% suicide/attempted suicide. The incidence of injury was highest in Jeju province, followed by Seoul and Daejeon, at 7,688, 5,178, and 3,787 per 100,000 persons, respectively. The ED disposition included discharge for 92% (increasing tendency over the 5 years), hospital admission for 6.5%, transfer for 0.9%, and ED mortality 0.1%. The intensive care unit (ICU) admission rate was 0.5% (7,905 patients) and the

emergency surgery rate was 0.6% (9,320 patients). The hospital discharge rate after admission was 89.7% and mortality after admission was 0.6% (577 patients).

Conclusion: This is the first epidemiological study of injured pediatric patients in Korean emergency departments. The respective injury and mortality rates were 3,187 and 3.5 patients per 100,000 persons (0.7%). Intentional injuries comprised 2.8%. The hospital admission rate was 6.5% and the ICU admission and emergency surgery rates were 1.1%.

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Trauma

PREVALENCE AND CLINICAL IMPORT OF THORACIC INJURY IDENTIFIED BY CHEST COMPUTED TOMOGRAPHY BUT NOT CHEST RADIOGRAPH IN BLUNT TRAUMA PATIENTS

Craig L. Anderson (1), Chelsea Bithell (1), Nooreen Khan (1), Mark Langdorf (1), Karin Reed (1), Robert Rodriguez (2), Armaan Rowther (1), Joelle Schlang (1), Bryan Sloane (1), Nadia Zuabi (1)

1. Department of Emergency Medicine, University of California, Irvine, Orange, United States

2. Department of Emergency Medicine, University of California, San Francisco, San Francisco, United States

Corresponding author: milangdof@uci.edu

Keywords: chest trauma, decision rule, occult injury

Background: Physicians use chest computed tomography (CCT) to evaluate patients after blunt trauma. With enhanced sensitivity, injury is found more often than with chest xray (CXR) alone ("occult injury," or OI).

Objectives: We describe the prevalence and clinical outcome of OI. Primary outcome measure was proportion of OI with intervention, mechanical ventilation, repeat clinical or radiographic evaluation, or surgery. Secondary outcome was admission rate and observation hours due to OI. We hypothesized that infrequent clinical consequences of OI might obviate the need for further evaluation or monitoring.

Methods: We prospectively collected data on 486 blunt chest trauma patients from a Level I Trauma Center ED (2011-12) with both CXR and CCT at physician discretion. OIs were: pneumothorax (PTX), hemothorax, sternal or > 2 rib fractures, pulmonary contusion, spine or great vessel injury, found by radiology on CCT but not on immediately preceding CXR.

Results: 148 (30%) patients had injury by either study, while 74 of these (50%) were found on CCT only. These OIs were 6 pulmonary contusions, 3 pneumothoraces, 3 hemothoraces, patients with > 2 rib (n=21) or sternal (n=15) fractures, and 23 patients with multiple OI. OI patients had these interventions ascribed to the OI: 63 repeat imaging on 43 patients (61 CXRs on 42 patients and 2 CCTs on 2 patients [one had both]), 57 admissions, 2 patients mechanically ventilated and 1 tube thoracostomy. For OIs, 2 of 16 (12.5%) patients with pulmonary contusion were

ventilated (1 also with PTX), while 2 of 8 (25%) hemothoraces and none of 10 PTX had thoracostomy. 11 of 15 (73.3%) sternal fractures and 15 of 23 (65.2%) with > 2 rib fractures as isolated OI had pain management/observation > 24 hours. Two patients had OI of aortic/great vessel injury and one had surgery. Four patients had OI of spinal fracture (none had surgery). Seventeen OI patients (23.4%) were observed in the ED (average of 7.3 + 1.9 hours), and 57 were admitted (average 6.1 + 10.4 days). Twenty-eight had ISS > 15 and 3 died (two of brain trauma).

Conclusion: OI patients had a high incidence of complications requiring surgery, intervention, admission, or mechanical ventilation. Only 23.4% were felt to be safe for discharge after ED observation. CCT is a useful modality to evaluate blunt chest trauma and frequently dictates additional management.

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Trauma

VALIDITY OF PREHOSPITAL CLINICAL EXAMINATION AND PREHOSPITAL PREDICTORS OF SEVERE PELVIC INJURY AMONG 2452 MULTIPLES TRAUMA IN THE NORTHERN FRENCH ALPS.

Nicolas Lucet (1), François-xavier Ageron (1), Sophie Muller (2), Elisabeth Rancurel (3), Cécile Vallot (1), Christophe Broux (4), Catherine Arvieux (5), Dominique Savary (1), Albrice Levrat (6)

1. Emergency department- SAMU 74, Centre Hospitalier Annecy, Annecy, France
2. Emergency department- SAMU 73, Centre Hospitalier de Chambéry, Chambéry, France
3. Emergency department- SAMU 38, Centre Hospitalier Régional Universitaire de Grenoble, Grenoble, France
4. Intensive Care Unit, Centre Hospitalier Régional Universitaire de Grenoble, Grenoble, France
5. Surgery department, Centre Hospitalier Régional Universitaire de Grenoble, Grenoble, France
6. Intensive Care Unit, Centre Hospitalier Annecy, Annecy, France

Corresponding author: nlucaet@hotmail.fr

Keywords: pelvic fracture, pre-hospital, TRENAU

Background: Pelvic trauma is common in multiple trauma, and associated with a high mortality. The Northern French Alps Emergency Network implemented a trauma system including a trauma registry since 2009 (TRENAU). As many trauma system, prehospital triage included severe pelvic injury as criteria for trauma center admission. Prehospital assessment often fails to identify severe pelvic injury. The aim of the study was to assess the validity of the clinical examination and to identify prehospital predictors of severe pelvic injury.

Methods: Observational prospective study based on patient material collected by the TRENAU registry. Inclusion criteria were all trauma patient at risk of multiple trauma defined by field triage decision scheme of the French society of

emergency medicine. Primary end-point was severe pelvic injury defined as Abbreviated Injury Scale (AIS) superior or equal to 3. Validity of the clinical examination was assessed by sensibility (Se), specificity (Sp), positive predictive value (PPV) and negative predictive value (NPV). Unconditional logistic regression analysis was performed to assess mechanism of injury, vital signs and prehospital therapy as independent variables associated to pelvic injury AIS ≥ 3.

Results: Between 2009 to 2010, 2452 trauma patients were included. 326 patients with pelvic injury were recorded corresponding to a prevalence of 13% and 169 patients with pelvic injury AIS ≥ 3 (7%). Mean injury severity score (ISS) for severe pelvic injury patients was 29 95%CI(26-32) and lethality rate was 13.6; 95%CI(8.4-18.8). Validity of prehospital clinical suspicion of pelvic trauma were: Se 64%; 95%CI (54 - 73), Sp 93%; 95%CI (92 - 95); PPV 43%; 95%CI (35 - 51); NPV 97%; 95%CI (96 - 98). Factors significantly associated to outcome were defenestration, adjusted Odds ratio (OR), 4.6 ; 95%CI (2.4-8.2); p<.001; paragliding accident, adjusted OR, 2.7 ;95%CI (1.1-6.7); p=.05; pedestrian struck by motor vehicules, adjusted OR, 1.9; 95%CI (1.0-3.8); p=.05; heart rate (HR) ≥ 100 bpm, adjusted OR, 1.8; 95%CI (1.2-2.6); p=.004; systolic blood pressure (SBP) ≤ 90mmHg, adjusted OR, 2.2 ; 95%CI (1.3-3.8); p=.005; fluid resuscitation of more than 1000ml of crystalloid, adjusted OR, 2.7 ; 95%CI (1.8-4.0); p<.001; number of ISS area, adjusted OR by one area increased, 1.6 ; 95%CI (1.3-1.8); p<.001; age, adjusted OR by 10 years increased, 1.1 ; 95%CI (1.0-1.2); p=.03.

Conclusion: This study found that prehospital clinical examination had poor Se and PPV. Mechanism of injury, HR, SBP, fluid resuscitation seem to be useful to identify in the prehospital setting patient with severe pelvic trauma and proceed to more accurate triage.

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Trauma

MINOR HEAD TRAUMA AND THE ASSOCIATION WITH FEVER AMONG CHILDREN IN THE ED.

Ayelet Shles (1), Yehezkel Waisman (1)

1. Emergency Department, Schneider Children's Medical Center and Tel Aviv University, Tel Aviv, Israel

Corresponding author: waisy@clalit.org.il

Keywords: fever, minor head trauma, pediatric

Background: Head trauma is one of the most common childhood injuries and falls are the most common mechanism of injury, predominantly in young children

— A child, especially a toddler, may experience an impaired gait or episodes of disorientation during a period of an acute illness, predisposing him to a fall.

— The association between fever and severe head injury is well established, however, no evidence of one is reported between an acute febrile illness and minor head injury among healthy children.

□ The aim of this study was to demonstrate an increased rate of fever among healthy children aged 1-10 years in the 24h preceding and following minor head injury.

Patients and Methods: We conducted a prospective cohort study in one Israeli ED

Children aged 1-10 years presented to the ED due to minor head injury were compared to an age matches control group. Following their ED visit, parents were inquired, by a telephone follow-up call whether the child developed a fever.

Results: 302 patients were included in the analysis – 151 with minor head injury and 151 without head injury 17% (26) of the 151 patients in the study group experienced at least one febrile episode compared to only 4% (6) of the patients in the control group ($P < 0.001$), (OR - 4.33 (CI 1.8-10)). Among the study group - fever was more prevalent in patients younger than 24m (26% vs. 11.6%)

Conclusions:

This is the first report of an association between minor head trauma and a febrile disease in toddlers. Based on these findings it will be reasonable to advise parents of febrile children to increase supervision in order to prevent injury. Falls are also a problem in hospitalized patients, both children and elderly' and Fever is one of the risk factors that can be evaluated on a routine clinical basis – increasing the supervision among those children is important to prevent a fall.

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Trauma

VALIDATION OF A REGIONAL PREHOSPITAL TRAUMA TRIAGE PROTOCOL OF THE FIRST TRAUMA SYSTEM IN FRANCE: EXPERIENCE OF THE NORTHERN FRENCH ALPS EMERGENCY NETWORK TRAUMA SYSTEM

François-xavier Ageron (1), Christophe Broux (2), Catherine Arvieux (3), Fabienne Grailles (4), Adeline Henniche (5), Albrice Levrat (6), Jean Marc Thouret (7), Dominique Savary (8), Jean Payen Payen (2)

1. Emergency department, Regional Hospital of ANNECY - SAMU 74, ANNECY, France

2. Intensive care unit, Centre Hospitalier Universitaire de Grenoble, GRENOBLE, France

3. emergency surgery, Centre Hospitalier Universitaire de Grenoble, GRENOBLE, France

4. Emergency, Centre Hospitalier Albertville, ALBERTVILLE, France

5. Emergency, Centre Hospitalier de Sallanches, SALLANCHES, France

6. Intensive care unit, Centre Hospitalier de la Région d'Annecy, ANNECY, France

7. Intensive care unit, Centre Hospitalier de Chambéry, CHAMBERY, France

8. SAMU 74, Centre Hospitalier de la Région d'Annecy, ANNECY, France

Corresponding author: fxageron@ch-annecy.fr

Keywords: trauma system, EMS, triage

Background

Implementation of regional trauma system in many countries allow to increased survival of major trauma. In France, coordinated regional system of trauma care did not arise and prehospital care are managed only by the Emergency Medical Services (Service d'Aide Médicale Urgente: SAMU). Injured patient are transported to the closest and most appropriate facility according to the on-scene triage done by an emergency physician. The Northern French Alps Emergency Network implemented in 2009 an organized regional trauma system following the international and American standard with keeping the expertise provided by emergency physician on-scene. The aim of the study was to assess regional prehospital triage protocol (TP) of the Northern French Alps Emergency Network Trauma System (TRENAU).

Methods

Observational prospective multicentre study based on material collected by the TRENAU registry between 2009 to 2011. The Northern French Alps Emergency Network is a federation of 21 hospitals and 3 EMS in the Northern French Alps. One hospital is designated as level I trauma center and 2 as level II trauma center. 10 hospitals are designated as level III. The regional authority of health funds completely the Network and the registry. The population covered by is about two millions of inhabitant with a high seasonal variation in three administrative departement (Isère, Savoie and Haute-Savoie). The registry collected data using the Ustein style Major trauma. The registry was recorded and approved by the National commission for protection privacy and personal and public liberties. Inclusion criteria were all trauma patient at risk of multiple trauma defined by field triage decision scheme of the French society of emergency medicine, and trauma patient presented a severe injury considered as a diagnostic with an Abbreviated Injury Scale superior or equal to 3. Prehospital triage protocol associated Glasgow coma scale, systolic blood pressure, respiratory distress, specific anatomic injury presumed (pelvic ring fracture, spinal cord injury, flail chest, limb amputation) and mechanism of injury. From these criteria, prehospital classification of patient was done according to presumed severity: rank A to C. Primary end-points was undertriage and overtriage as defined by the American College of Surgeon. Undertriage was defined as multiple trauma (Injury Severity Score, ISS superior or equal to 16) non admitted in a trauma center level I or II and transferred secondary to another facility or death in Emergency Department (ED). Overtriage was defined as trauma patients with an ISS inferior to 16 admitted in a trauma center level I or II. We compared undertriage and overtriage among patients included or not in the TP. Frequencies were compared with chi2 test. The two-sided significance level was $P < .05$.

Results

3422 major trauma presumed fulfilled the inclusion criteria. Mean age was 37 years sd 17. Motor crashes vehicles represents 49% (n=1421) of injury's circumstances, fall 23% (n=671), Skiing accident 19% (n=521). 2534 (74%) were admitted in a trauma center level I or II, and 888 (26%) in a level III or another hospital of the area. 2551 (75%) patients were classified according to the TP (TP+ group). 869 patients (25%) were not classified according to the TP (TP-

Group). In these 505 (15%) patients were transported by BLS ambulance to the closest ED and did not benefit of the clinical assessment of an emergency physician on site. Overtriage was 51.2%; 95%CI, 48.9-53.4 in the TP+ group (n=1018) and 45.0%; 95%CI, 40.6-49.4 in the TP- group (n=232), P=.012. Undertriage was 4.6%; 95%CI, 3.8-5.5 in the TP+ group (n=118) and 15.0%; 95%CI, 12.7-17.5 in the TP- group (n=130); P<.001. Overall undertriage was 7.3%; 95%CI, 6.4-8.2 (n=248).

Conclusion: Overtriage and undertriage occurred with TP were in the range defined by the American college of Surgeon, less than 5% for undertriage and less than 50% for overtriage. Our findings were consistent for validity of the TP. Compared to patients that TP was not applied, TP decreased significantly undertriage. When TP was not applied by prehospital team, undertriage was higher and not acceptable. Focus have to be made for applying TP for all trauma patients with training ALS and BLS team.

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Pre-Hospital-EMS 2

NON INVASIVE VENTILATION USE IN A FRENCH OUT-OF-HOSPITAL MOBILE INTENSIVE CARE UNIT : A RETROSPECTIVE OBSERVATIONAL STUDY.

Anne-Lise Thierry-Pradel (1), Gaël Pradel(2), Cécile Deniel (1), Brun Céline (1), Clément Pecout (1), Jacques Marchi (1), Laëtizia Labastire (1), Daniel Meyran (1), Patrick Benner (1), François Topin (1)

1. SMUR, Bataillon de Marins Pompiers de Marseille, Marseille, France

2. Réanimation polyvalente, CH Henri Duffaut, Avignon, France

Corresponding author: annelisepradel@free.fr

Keywords: non invasive ventilation, out of hospital, ACPE and COPD exacerbations

Introduction : Since the French consensus conference on non-invasive positive-pressure ventilation in acute respiratory failure in 2006, non invasive ventilation (NIV) is strongly recommended for treatment of acute cardiogenic pulmonary edema (ACPE) and acute exacerbation of chronic obstructive pulmonary disease (COPD). We wanted to assess our practice and its accordance with recommendations.

Material and methods : This was a retrospective observational study conducted by the out-of-hospital emergency medical unit of the French Marseilles Mariner Firefighters Battalion. We checked out all the patients files from January the 1st of 2012 to November the 14th of 2012.

All the transport vehicles have the same equipment for NIV : Bilevel Positive Airway Pressure (BiPAP) ventilators (Pressure Support Ventilation) and Continuous Positive Airway Pressure (CPAP) are available.

Results : During this period, 5734 out-of-hospital mobile intensive care interventions occurred, 1088 for acute respiratory failure, 85 patients required NIV (BiPAP or

CPAP). It represents 7,8% of all the cases of acute respiratory failure, and 1,5% of all our interventions. For the 85 patients who required NIV, CPAP was used for 45 of them and BiPAP for 40, respectively 53 and 47%.

The patients who required NIV suffered from : ACPE 62 cases (73%), exacerbation of COPD 18 (21%), hypoxic pulmonary disease in "not to be intubated" (NTBI) patients (2,4%) and 3 other circumstances, one of which was preoxygenation before intubation.

CPAP was more often used for ACPE (68%) whereas BiPAP was more often used for acute COPD exacerbation (89%).

Discussion :

Since international and national consensus conference in 2001 and 2006, NIV has become the first intention ventilation strategy for ACPE and COPD exacerbations. A meta-analysis consolidated its interest.

Some studies have already described NIV use in the out-of-hospital setting but not after the national consensus reference of 2006. Our study shows the practice after these recommendations : the chosen mode according to the pathology is not always in accordance with recommendations, particularly some practitioners still use CPAP for exacerbations of COPD which is not recommended. Nevertheless, compared to previous studies, NIV use for exacerbations of COPD is increasing.

Our study has some limitations : it was done in a single center and all the files were analysed retrospectively. We didn't have written procedure for NIV during the study, it could probably increase its use. We are presently writing it, and want to assess the benefit of this new procedure by conducting a new study.

Conclusion : Six years after the French consensus conference on non-invasive positive-pressure ventilation in acute respiratory failure, NIV is usually employed in this out-of hospital emergency medical unit.

The pathologies treated are in accordance with the recommendations such as the non invasive respiratory support used.

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Pre-Hospital-EMS 2

NORWEGIAN EMTS EXPERIENCES OF WORKING WITH DOCTORS IN THE PRE-HOSPITAL SETTING, A QUALITATIVE STUDY

Magnus Hjortdahl (1), Erik Zakariassen (2), Wisborg Torben (3)

1. National Centre for Emergency Primary Health Care, Uni Health, Alta, Norway

2. National Centre for Emergency Primary Health Care., UNI Health, Bergen, Norway

3. Department of Anaesthesiology and Intensive Care, Hammerfest Hospital, Finnmark Health Trust, Hammerfest, Norway

Corresponding author: magnus.hjortdahl@gmail.com

Keywords: pre-hospital, interdisciplinary, teamwork

Norwegian EMTs experiences of working with doctors in the pre-hospital setting, a qualitative study

Background:

Primary care doctors on-call (GPs) in the emergency primary health care services in Norway are, together with the ambulances, the primary resources for handling emergencies outside hospitals. The requirement to work as an Emergency Medical Technician (EMT) in Norway is two years in upper secondary school and two years in apprenticeship. The emergency medical communications centers (EMCC) (dispatch centers) will send a radio alarm to the doctors on-call and the ambulances in the relevant municipality when they suspect a potential life-threatening situation, designated as red response.

GP's on call decide on their own discretion whether or not they will respond with a call-out and join the ambulance going to the patient, or let the EMTs respond to the call by themselves.

The purpose of this study was to gain a better insight into the EMTs experiences of working with GPs in an emergency situation.

Methods:

We conducted four focus group interviews with EMTs at four different ambulance stations in Norway. Three of the stations were located at least two hours driving distance from the nearest hospital. The interviews were transcribed and analyzed using systematic text condensation as described by Malterud (1).

Results:

The EMTs interviewed described increased emphasis on training, guidelines and protocols giving them increasing confidence in emergency medicine during the last years.

Despite this they felt the need for GPs participating in the ambulance when responding to a critically ill patient. The presence of GPs made the EMTs feel more secure, especially in unclear and difficult cases that did not fit into EMT guidelines. The on-call GPs were described as having more clinical skills and being better at diagnosing.

The GP main contributions were described as deciding whether to admit a patient to hospital, and arrange for transportation to hospital when needed. Bringing the physician to the patient can shorten the transportation time to hospital by several hours, and important medication can be started at an earlier time. Shortening the distance traveled by the patient in the ambulance was also considered to be gentler to the patient.

There were several examples of sub-optimal treatment in the absence of the GP. The EMTs described situations where they were forced to give treatment they were not formally given a delegation to administer, as there were no GP present. In other examples patients were not given the recommended treatment prehospitally when the ambulance drove to the patient without a GP.

The EMTs described discomfort with GPs not responding to the calls. They had also experienced GPs responding to calls, having little interest and knowledge of emergency medicine and little insight in the training and protocols of the EMTs.

They reported a need for mandatory interdisciplinary training on a regular basis to achieve better knowledge and insight. This was perceived as to result in better teamwork,

more respect for each other's knowledge and capabilities, which would lead to better patient treatment.

Conclusion/implications:

EMTs reported a wish for GP presence in challenging prehospital emergency settings that goes beyond their guidelines. The presence of GPs might improve the patient care. We found a need for a formalized area for training between EMTs and GPs on call.

1: Malterud, Kirsti. "Systematic text condensation: A strategy for qualitative analysis." *Scandinavian journal of public health* 40.8 (2012): 795-805.

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Pre-Hospital-EMS 2

ATTITUDES TOWARDS RADIO USE, ALARMS AND RESPOND AMONG GPS ON-CALL AND THE DISPATCH CENTRES STAFF IN NORWAY.

Erik Zakariassen (1), Eirin Ellensen (2), Torben Wisborg (3), Steinar Hunsbår (1)

1. National Centre for Emergency Primary Health Care, UNI Health, Bergen, Norway

2. Department of Research, Norwegian Air Ambulance Foundation, Drøbak, Norway

3. Faculty of Health Sciences, University of Tromsø, Tromsø, Norway

Corresponding author: erik.zakariassen@igs.uib.no

Keywords: GP, Radio, Alarm

Introduction: An important part of the pre-hospital emergency care system in Norway is the out-of-hours service, managed by the municipalities through the primary health care services. The hospitals, organised through four different regional health authorities, are responsible for the ambulance service and the emergency medical communications centres (EMCC) (dispatch centres). In an emergency situation the citizens shall call the medical emergency number 113. The call will be routed to the nearest EMCC. The staff at the EMCCs will decide levels of response required. Red respond is the most urgent, an ambulance and a general practitioner (GP) on-call in the out-of-hours system shall immediately be alarmed through a radio system. It is a regulatory requirement for the GPs on-call, to be accessible on the radio. Some challenges exist in communication between the EMCCs and the general practitioners on-call. Previous studies from Norway, with data from different EMCCs, showed that the EMCCs did alarm the GPs on-call in just half of the red respond cases, and when alarmed the GPs did a call-out in just 40 % of the alarmed cases. There is a lack of knowledge regarding how GPs and staffs at the EMCCs consider alarms and responds to emergency patients, on an individual level. The aim of this study was therefore to study the GPs on-call's attitudes of radio use and their responds to alarms, and similar the dispatch centres staff's attitudes of alerting the GPs in emergency cases.

Subjects and methods: In 2012 all GPs (230) taking part in the emergency out-of-hour duty in seven different emergency primary care districts were sent a questioner on email (Questback). As part of a larger study, all staff (429) in all EMCCs in Norway was sent a questioner containing questions on different aspects of dispatching.

Results: After two reminders 94 (41%) of the GPs and 272 (63%) of the EMCCs' staff had answered. Among the GPs 57 % always used the radio on call, while 23 % never used it. While 62 % agreed that radio is the best tool for communication between the different emergency services, nearly one third used the radio only because of regulatory requirements. Regardless of being alerted by phone or by a radio alarm, 80 % of the GPs claimed that they always and almost always respond with a call-out. Half of the GPs using the radio had the opinion that when alarmed the patient has an urgent need of the physician's competence, while the other half of the same group answered quite opposite; it is seldom necessary.

Among the staff at the dispatch centres, 53 % claimed that they always alert GPs on call in emergency situations, while 13 % answered they never do. Of the staff, 43 % believed that ambulance personnel are more skilled to treat emergency patients than the GPs are, while 28 % did not have an opinion on the subject. 43 % had the opinion that GPs do not acknowledge alarms and 46 % had the opinion that the GPs never respond to alarms with a call-out to the patient.

Conclusion: The majority of the GPs responding to the questionnaire claimed that they almost always respond with a call-out in emergency cases. This does not correspond with previous studies based on data from real situations, and not with the EMCCs staff's answers in this study. Due to low response rate among the GPs, respond bias has to be considered. Despite demand of radio use, a large group of GPs never use it. This means that several municipalities in Norway violate the regulation. The EMCC staff expressed the view that GPs are not necessarily the most preferred medical resource at scene in many emergency situations.

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Pre-Hospital-EMS 2

THE USE OF MANNITOL IN THE MANAGEMENT OF SEVERE TRAUMATIC BRAIN INJURY, REMAINS POORLY KNOWN BY THE FRENCH EMERGENCY PHYSICIANS.

Karim Tazarourte (1), Alexandre Samar (2), Jean Pierre Vernet (2), Laurent Rebillard (3), Nicolas Bertozzi (4), Christophe Fossay (2)

1. Emergency Department, Hopital Melun, Melun, France

2. Emergency department, Hopital Fontainebleau, Fontainebleau, France

3. Emergency department, Hopital Melun, Melun, France

4. Emergency department, Hopital Melun, MELUN, France

Corresponding author: karim.tazarourte@ch-melun.fr

Keywords: Osmotherapy,, traumatic brain injury,, prehospital

Introduction: The aim of the traumatic brain injury management is to prevent ischemic cerebral lesion. The international guidelines recommend the use of mannitol® when a fixed dilated pupil appears. Many studies, in France, have suggested that the mannitol was very rarely used (1). The goal of our study was to estimate the knowledge of the use of mannitol® in French emergency doctors.

Materials and methods: We have realized a phone survey about the totality of the Mobile intensive care unit service in France. In each MICU service, we put question at an emergency physician, about the guidelines for the management of traumatic brain injury. Our study take place between April and June 2011 and the answers has been compared with a similar study take place during 2005

Results: All the emergency doctors call by phone, did agree to answers questions (n=367). The doctors who answer know the guidelines were 92 % vs 84% in 2005 (p<0,05). After our questions, only 29% (109/367) of doctors had made good responses for at least the half of the guidelines and 24 % (87/367) had materials for apply them. The goal of mean arterial pressure below 80 mmHg, was known 97% of doctors, the use of mannitol® by 73% (268/367). In 2005, 63% (227/367) doctors didn't know the use of mannitol (p<0,05).

Discussion: Our results shown that the guidelines diffusion is good, but the implementation is heterogeneous. The adherence for the use of mannitol remains low. The reasons is probably multiple.

1. Bouhours et al. Ann Fr Anesth Réanim 2008;27 :397-404

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Pre-Hospital-EMS 2

MEASURING THE QUALITY OF EMERGENCY MEDICAL SERVICES (EMS) CARE USING COMPOSITE SCORES

Patrick Chow-in Ko (1), Matthew Huei-ming Ma (1), Tsung-tai Chen (2)

1. Department of Emergency Medicine, National Taiwan University Hospital, Taipei, Taiwan

2. Department of Public Health, Fu Jen Catholic University, New Taipei, Taiwan

Corresponding author: patrick.patko@gmail.com

Keywords: Composite scores, Performance measurement, Emergency Medical Services

Background :

Policy makers may need to rate the quality of the Emergency Medical Services (EMS) in terms of its performance. However, quality of healthcare is usually a multidimensional construct that may not be measured directly. Thus, multiple indicators are used to construct a composite score for quality measurement. There is no previous study of composite scores and EMS performance. In this pilot study we use multiple prehospital EMS

(Emergency Medical Services)-related process measures to construct composite scores to evaluate prehospital EMS performance for out-of-hospital cardiac arrest (OHCA) care, and investigate their associations with discharge mortality.

Methods :

Data has been collected from Taipei City OHCA Registry from January 1, 2006 to December 31, 2009. The composite scores are derived from the two methods: the raw sum score, and the all-or-none score. The two composite scores are calculated based on two process measures (EMS response time less than 5 minutes, and achieving pre-hospital ROSC (return of spontaneous circulation)). We compare the correlations between the composite scores, process measures, and risk-adjusted discharge mortality at patient or EMS team levels respectively. We set up different EMS volume thresholds of ambulance teams in the correlation analysis as sensitivity tests for the case volume impact.

Results :

We analyze a total of 4,000 OHCA patients, distributed across forty-four EMS ambulance teams. Regardless various volume criteria applied, the all-or-none scores demonstrate a higher inverse relationship with risk-adjusted discharge mortality (-0.39~ -0.48, $P < 0.01$) compared to the raw sum scores.

Conclusions :

Applying the composite scores to measure EMS care quality, especially by using the all-or-none score, may show a higher validity for ambulance team performance of OHCA resuscitation, regardless of case volumes. The composite score constructed by a number of process measures may be an alternative approach to access EMS quality.

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Pre-Hospital-EMS 2

WHY DID GPs RESPOND WITH A CALL-OUT IN OUT-OF-HOURS SERVICE IN NORWAY?

Erik Zakariassen (1), Helene Hauken (2), Helle Marie Brennvall (2), Torben Wisborg (3), Steinar Hunskaar (1)

1. National Centre for Emergency Primary Health Care, UNI Health, Bergen, Norway

2. Faculty of Medicine and Dentistry, University of Bergen, Bergen, Norway

3. Faculty of Health Sciences, University of Tromsø, Tromsø, Norway

Corresponding author: erik.zakariassen@igs.uib.no

Keywords: Out-of-hours, GP, Respond

Introduction: The out-of-hours service in Norway, managed by the primary care service, is an important part of the pre-hospital emergency care system. The municipalities are responsible for the out of hours services, while the hospitals, are responsible for the ambulance service and the emergency medical communications centres (EMCC) (dispatch centres). When someone calls the dedicated medical emergency number, the person will be routed to

the nearest EMCC. The staff at the EMCCs will decide levels of response required. Red response is the most urgent, and ambulance and the general practitioner (GP) on-call in the out-of-hour system shall immediately be alarmed through the "health care radio system". It is a regulatory requirement for the GPs on-call to be accessible on the radio, but choice of respond after alarm are the GPs own decision. Some challenges exist in communication between the EMCCs and the general practitioners on call. Previous studies from Norway, based on data from different EMCCs, revealed that when alarmed the GPs did a call-out in approximately 40 % of the cases. There is a lack of knowledge regarding why some GPs respond with a call-out after alarm, while other GPs make other assessments in a red response alarm. The aim of the study was to seek knowledge about the GPs' reasons for chosen action, after red response alarms.

Subjects and methods: The EMCC in Bergen, is alarming the GPs on-call in nine emergency primary care districts out of hours, and was chosen as study area. The study period was from July to October in 2012. Alarms from Sunday to Thursday between 4pm and 7am were included. Every morning the EMCC sent a list to two researchers, containing all alarms to the different emergency primary care district during the last out-of-hours period. A text message was sent to the GPs that had been on-call in the districts where an alarm had been sent. They were asked to take part in a semi structured interview regarding their response to the specific alarm received during their last watch. If the GP consented to take part they were contacted by phone and the interview could take place. One interview was done for each alarm, and hence one GP could be interviewed more than once. The interview should be performed within 24 hours after the alarm.

Results: 252 alarms were sent from the EMCCs during the defined study period. In 103 of the alarms the researcher was not able to get in contact with the GPs who had been on call. 149 text messages were sent. Out of the GPs who agreed to be interviewed, some had not actually been on-call, some did not answer the phone, and some answered more than 24 hours later (excluded). Therefore, 72 interviews were performed, based on 72 different emergency cases. Male GPs constituted 57 (79 %). Median years of experience were eight years (IQR, 2-18) for the male and two years (IQR, 2-5) for the female GPs. The GPs responded with a call out in 47 (65 %) of the cases, and in 30 (64 %) of those the GP confirmed the necessity of being there due to interpretation of ECG, differential diagnosis, early start of treatment and that the EMTs did not feel competent to handle the situation. Patient's conditions (e.g. not so serious as first expected) was the main cause when it was not necessary to be there. Among the cases where the GPs did not respond with a call out (35%), the GPs were occupied with another patient, the distance to the site was too long, or another GP did the call-out. There was a tendency that GPs with fewer years of experience (1-2 years) more often did a call out, and more often found it unnecessary. Furthermore, GPs with not more than 1-2 on-calls per month had more than three years of experience and was among those least likely to do a call-out.

Conclusion: In the majority of the cases where the GPs did a call-out they felt it was necessary by virtue of their expertise as physicians. While those who did not, mainly listed practical causes such as «preoccupied with other patient».

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FACTORS LEADING TO DELAYS IN THE 9-1-1 CALL AND DISPATCH PROCESS WITH SUGGESTED SOLUTIONS

Michael S Molloy (1,2,3), James R Rifino (2), Enrique Salazar (4), Narimane Khaled (4), Samuel Lalezari (4), Rami Shuraim (4), Abdulrahman Alqhatani (2), Srihari Cattamanchi (2), Prasit Wuthisuthimethawee (2), Majed Aljohani (2), Amalia Voskanyan (2), S

1. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT), Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland
2. Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA
3. Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland
4. Massachusetts MIRAD Laboratory, Worcester Polytechnic Institute, Worcester, MA, USA

Corresponding author: mickmolloy@mac.com

Keywords: Response times, Dispatch delays, EMS systems

Introduction

Lives depend on the timely response of Emergency Medical Services (EMS) and the quality of care they provide. The world's population has experienced rapid growth in recent decades and this directly impacts how effectively EMS can respond, stabilise and transport the rising number of emergency 911 calls.

As a result of increased 911 call volume in the United States, intra and inter-agency communication delays have been rising. The response times can be improved if these delays are minimized. Delays result from the complex world of 911 calls and their responding systems. Multiple calls and transmissions from multiple sources filter through a single bifurcation point, the Dispatch Center, which must prioritize 911 calls, and organize rapid and effective ambulance response.

National Emergency Number Association states the number of 911 calls in the United States was approximately 240 million in 2012. A 911 call is subject to many delays. These delays can be classified into three branches: people, environment, and technology

Each 911 call goes through a different initial process depending on origin of call ie cell vs landline, then call will be connected to the call taker, and finally the dispatcher who will assign the appropriate response units.

Method

We conducted literature searches, visits to dispatch centers, and interviews with EMS personnel in order to

analyze and study the 911 call and response-decision making process. We examined response time data collected between 2009-11 for Boston and the different types of EMS personnel, equipment technology and transportation methods.

Control theory was used to analyze delays occurring with the 911 call process and how delay interaction compounding total delay throughout the process using a nonlinear stochastic control model utilising the Hopf-Markov Decision Process.

Using data from the report card on Emergency Medicine a mathematical feedback controller equation was used to construct the main delay equation. This equation helps determine which 911 call to prioritize, as well as organize the responses and administer rapid interventions or ambulance transportation.

To further understand delays several 911 systems which ameliorate EMS response times currently in use were studied.

Results

In graphical form to be presented in detail at meeting Analysis/Discussion

During period studied response time increased for high priority 911 calls from 5.5 minutes to 5.7 minutes, with a relative difference of 12 seconds.

Distance and call volume are the two main delay factors within the 911call process. Distance is part of the environmental delay branch (Fig.6) delays could occur due to the location of the caller, traffic, or weather. Call volume delays are a result of increased population and inefficient technology.

Response time delays were broken down into 3 main categories Technology, Environment and People and these were further subdivided as outlined in Fig.6.

Delays accumulate from the moment a 911 call is placed, until help is provided at either the emergency scene or a hospital. Ideally, the response time should be kept under seven minutes. Thus, the call taker needs to obtain the caller's information in an effective manner by asking the appropriate questions. This also applies to the caller, who should be prepared to provide useful information.

The Variable Dispatch Time Delays (VDTD) are the ones that can be reduced. To do this, the call taker should collect the caller's information more effectively. The digital checklist created for this project is one of the possible solutions. This checklist contains the Emergency Medical Dispatch Guidecards, detailing the general dispatch procedures that dispatchers should adhere to. Using this method, the call taker has Augmented Data Assimilation Visualization (ADAV) by being able to provide accurate and useful advice more efficiently, which will in return speed up the overall 911 call process.

Conclusions

Improving 911 response times is vital for an efficient and effective emergency response service. Out of the systems analyzed, those equipped with real-time GPS, real-time system overview, compatibility with Computer Aided Dispatch, and emergency vehicle preemption are the most useful. The nationwide implementation of such 911 systems should be supported. Additionally, the interface of

the digitized checklist created for this project should be developed and researched further.

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Pre-Hospital-EMS 2

NON-INVASIVE BIOREACTANCE HEMODYNAMIC MONITORING IN PRE-HOSPITAL EMERGENCY MEDICINE : A FEASIBILITY STUDY

Arnaud Delahaye (1), Julie Oudet (2)

1. Réanimation, Centre Hospitalier Bourran, Rodez, France
2. SAMU 31, CHU Toulouse, Toulouse, France

Corresponding author: julyborninjury@gmail.com

Keywords: Hemodynamic monitoring, Bioreactance, Prehospital care

Introduction: Hemodynamic assessment, such as vital parameters and signs, is an essential part of management of some patients (shock, severe brain damage, acute respiratory distress) from assessing acute circulatory failure to guide fluid resuscitation. Clinical evaluation of underlying hemodynamic profiles of these patients by emergency physicians does not seem accurate and sufficient. Hemodynamic monitoring still remains complex and underemployed in some particular conditions, especially in emergency medicine. Use of non-invasive tools may allow an hemodynamic evaluation in the specific extreme conditions of pre-hospital emergency medicine. **Methods:** Pre-hospital emergency medicine teams (including emergency physicians within the framework of French SAMU/SMUR) were asked to use a bioreactance hemodynamic monitoring device (NICOM®) while a 45 days period, and to fill an evaluation sheet of its feasibility through 7 analogic visual scales (AVS). The different AVS were about ease to use and transport of the device, quickness and readability of hemodynamic data, global feasibility of monitoring, felt utility in clinical management, and global interest of monitoring. Users were also invited to add comments about the device. Primary endpoint was a feasibility score obtained by balancing means of the AVS. Secondary endpoints were mean of the results of each AVS, stability of the bioreactance signal during transport and traceability of therapeutic procedures on the hemodynamic data recorded on the device. **Results:** 12 uses of the device occurred during the study. The mean score of feasibility calculated by balancing means of the 7 AVS is 57.6 / 100 [Confidence Interval 0.95 : 48.5-66.8]. The whole 7 means of each AVS reach greater scores than 50/100. Hemodynamic data analysis shows a good stability of the bioreactance signal and remarkable sensitivity to therapeutic procedures (e.g. fluid resuscitation). **Discussion:** The main limitation of the study is the poor number of uses of the device. The NICOM® device allows an easy, operator-independent, reliable, continuous and non-invasive cardiac output and stroke-volume-variation monitoring. However, this device hasn't any charging indicator light, and no defibrillation module; these characteristics limit its

acceptability in a pre-hospital setting. **Conclusion:** As clinical applications of bioreactance technology spread, especially in emergency rooms through the world, the use of a bioreactance hemodynamic monitoring in the particular field of the prehospital emergency medicine is possible. It may be clinically helpful in extra-hospital early management of acutely ill or injured patients.

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Pre-Hospital-EMS 2

USE OF LIGHTS AND SIREN: IS THERE ROOM FOR IMPROVEMENT?

Pierre-Nicolas Carron (1), Fabrice Dami (1), Mathieu Pasquier (1)

1. Emergency department, Lausanne University Hospital, Lausanne, Switzerland

Corresponding author: fabrice.dami@chuv.ch

Keywords: lights and siren, transport time, severity status

Background

The use of lights and siren (L&S) by emergency response vehicles increases the incidence of ambulance accidents and fatalities in paramedics, patients, as well as the general population. Evidence that the benefits of time saved "running hot" outweigh the risks, is scarce at best. The objective of the study was to analyse the use of L&S during transport to the hospital according to the prehospital severity status of the patient (NACA score), and the time saved by the time of the day.

Methods

We searched our state's Public Health Services data from January 1 to December 31, 2010.

Results

During the study period, 24'506 ambulance transports meted the inclusion criteria. Most (95.5%) missions involved adults (above 16 years old), with a male-female sex ratio of 1.05. Traumatic injuries represented 32% of the cases. L&S were used on the way to the hospital 4'066 times, representing 16.5% of all missions. The higher was the NACA score, the higher was the proportion of L&S use, and this was the case for trauma as well as non-trauma patient (Table 3). The mean total transport time back to hospital was 11.09 min (CI 10.84-11.34) with L&S and 12.84 min (CI 12.72-12.96) without. The difference was 1.75 min (105 sec), which was statistically significant ($p < 0.001$) (table 4). When specifically looking at duration of transport during nighttime, this mean difference of transport duration with or without L&S was much smaller (0.17 minutes or 10.2 sec), and did not reached statistical significance ($p = 0.2683$).

Discussion

Of the 24'506 runs included, 4'066 (16.59%) courses to the hospital were performed with L&S. Forty percent of the missions with L&S (1'638) graded NACA 0 to 3, which are not life-threatening emergencies. There were also 1'567 NACA 4 runs with L&S. Although the NACA 4 describes a

severe case that may present a near-term development of a life-threatening emergency, not all situations described as NACA 4 may deserve the use of L&S. A more precise algorithm based on the clinical situation is warranted to optimise the use of L&S in this situation. The expected transport time to destination could also be considered when deciding to use L&S for a NACA 4 victim, as the time saved may only be statistically significant for long runs or during traffic hours. The mean time saved using L&S in 2010 was 1.75 min (105 sec). While this is statistically significant ($p < 0.001$), it does not necessarily indicate clinical relevance. When looking at only nighttime missions, the use of L&S shortened the transport by only 0.17 minutes (10.2 sec). This minor reduction should prompt the implementation of differentiated regulations for using L&S during the night.

A global principle to justify a transport with L&S is that a life-saving ED intervention is needed within 15 minutes after hospital arrival or a proven benefit with an in-hospital fast-track (STEMI, ischemic stroke) applying the adage "time is muscle" or "time is brain". The definition of "intervention" is an action not possible to provide out of the hospital (angioplasty, securing the airways, complete homeostasis, acute stroke thrombolysis, etc.). Our work was not conceived to analyse if this time saved was beneficial for the patient, particularly in terms of mortality and morbidity.

We are well aware of the difficulty to implement restrictions in the use of L&S. But medical directors and healthcare authorities who endorse responsibilities for the EMS system have a duty to weigh risks and benefits with the aim to diminish the number of accidents without harming the patients. A reduction in the use of L&S implies a cultural change, especially for paramedics. There are significant hurdles to overcome.

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Pain Management/Analgesia/Anesthesia

ORAL TRANSMUCOSAL FENTANYL CITRATE AS A PATIENT CONTROLLED ANALGESIA FOR ACUTE TRAUMATIC INJURY.

Jason Van Der Velde (1), Matthew Wiepking (1), Elaine O'farrell (1), Iomhar O'sullivan (1), Stephn Cusack (1)

1. Emergency Department, Cork University Hospital, Cork, Ireland

Corresponding author: matt@uimail.ucc.ie

Keywords: PCA, fentanyl lollipop, acute traumatic pain

Background: We have previously reported on the barriers to traditional analgesic methods in challenging environments. We propose that an "ideal agent" would be easy and safe to administer by a wide range of emergency service personnel. It should provide potent pain relief quickly to enable rescue from entrapment or initial management of significant injury such as fracture stabilisation or dressing of a burn. Importantly, this maximal effect should be relatively short lived but still

maintain duration of background analgesia, conveying a high degree of patient and practitioner satisfaction. Being a patient controlled analgesic (PCA), it would have very low or no incidences of adverse events and effects and be easily reversible if required.

Aim: To investigate the use of high dose oral transmucosal fentanyl citrate (OTFC) for acute severe traumatic pain in an opioid naïve adult population.

Method: Ethical approval was granted for this study by the Clinical Research Ethics Committee of the Cork Teaching Hospitals. We recruited 47 ASA I & II patients, aged 18-59yrs presenting to Cork University Hospital Emergency Department with an acute traumatic injury with Visual Analogue Scale (VAS) pain score $\geq 7/10$ and no prior opioid administration. Following consent, they were administered 1G paracetamol and 400mg ibuprofen orally and offered a very high dose, 1200mcg fentanyl lollipop (Actiq) with instructions for its use as a PCA. Patients were nursed 1:1 with heart and respiratory rate, non-invasive blood pressure, SpO₂ and the VAS pain score was monitored continuously and recorded at 5-minute intervals. Predictable effect was assessed against previously published data using VAS pain scores. At 20 minutes, patients were evaluated for pain management failure, defined as pain Score $\geq 3/10$ and a further management plan was then put in place. Telephone follow-up was conducted using a validated Pain Treatment Satisfaction Scale 2 to 3 weeks post event. Results: 47 patients with a mean age of 36 (SD+-11) were enrolled. 7 patients were lost to subsequent telephone follow up. No adverse patient events occurred in our study population. OTFC was highly predictable in effect, keeping with previously published data, reducing all but 1 patient's severe pain to below a VAS score of 3/10 within 20 minutes. This patient was noted to have ischaemic pain from a rapidly developing compartment syndrome. 90% of respondents found the lollipop easy-to-use, with 87.5% stating OTFC met or exceeded their expectations. The only complaint about the device was its aftertaste (22.5%). Patients reported satisfaction or high levels of satisfaction with their pain relief onset (75%), level (82.5%), and duration (77.5%). Of particular note, all patients that reported a bothersome adverse effect such as nausea (12.5%), drowsiness (20%), or dizziness (10%) were either satisfied or very satisfied with their level of analgesia, stating that despite the adverse effect, the lollipop exceeded or greatly exceeded their expectations. Unexpectedly, 52% of injuries involving joint dislocations were reduced with OTFC alone, requiring no sedation.

Conclusion: Fentanyl lollipops are an easy to use, highly effective patient controlled analgesic agent associated with high levels of patient satisfaction. OTFC is associated with low levels of adverse events and effects in an opioid naïve fit and healthy adult trauma population. Its pharmacodynamic effects appear to fit in well with our description of an ideal analgesic agent for acute traumatic injuries.

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Pain Management/Analgesia/Anesthesia

RISK ASSESSMENT OF OPIOID MISUSE AMONG PATIENTS WITH CANCER PRESENTING TO THE EMERGENCY DEPARTMENT USING THE SOAPP-R SCALE

Natascha Bass (1), Valda D Page (1), Cielito C Reyes-gibby (1), Knox H Todd (1), Monica K Wattana (1)

1. Emergency Department, MD Anderson Cancer Center, Houston, United States

Corresponding author: mwattana@mdanderson.org

Keywords: Public Health, Oncologic Emergency Medicine, Opioid Misuse

Introduction: Cancer is evolving towards a chronic disease state, and with chronic pain arising from therapies including surgery, chemotherapy, and radiation, both disease and symptom management of the cancer patient increases in complexity. The treatment of severe and persistent pain in cancer patients is one of the most challenging areas of Oncologic Emergency Medicine. While opioids remain the drug of choice for active cancer pain syndromes, use of these medications for treatment of chronic pain remains debatable and there is increasing concern for the risk of aberrant drug taking behaviors in this population. Therefore this study aimed to determine the proportion of emergency department (ED) patients with cancer at high risk for opioid misuse.

Methods: Prospective observational single-center study conducted in the ED of a comprehensive cancer center. Study subjects were ED patients with cancer presenting with exacerbations of chronic pain, who were taking prescribed schedule II opioids on a regular basis, aged 18 or older, and English or Spanish speaking. Opioid misuse risk was assessed using the Screener and Opioid Assessment for Patients with Pain-Revised (SOAPP-R), a 24-item questionnaire designed to predict aberrant medication-related behaviors among persons with chronic pain. A cutoff of 18 or higher is used to separate those at higher or lower risk (SOAPP+ vs. SOAPP-). The state online prescription drug monitoring program (PDMP) was queried for the past twelve months and the number of prescriptions for controlled substances, the number of pharmacies used, and the number of providers involved was recorded. Descriptive statistics were calculated and comparisons between SOAPP+ and SOAPP- patients were made using chi squared and t-tests.

Results: A total of 70 patients were recruited from the Department of Emergency Medicine at MD Anderson Cancer Center in Houston, Texas. Of 65 subjects with complete SOAPP survey data, 27 (42%) scored 18 or greater (SOAPP+), indicating a higher risk for aberrant drug-related behaviors. For 63 subjects with PDMP information, the mean number of prescriptions for controlled substances per subject over the past year was 11.7 (range 0-60), the mean number of providers was 4 (range 0-19), and prescriptions were filled at a mean of 2 pharmacies (range 0-6). SOAPP+ subjects received a higher mean number of prescriptions than SOAPP- subjects (19.1 vs. 6.7, P=0.001),

from a higher mean number of medical providers (5.2 vs. 3.0, P=0.011), and tended to fill prescriptions at more pharmacies (2.4 vs. 1.7, P=0.08). SOAPP+ subjects were somewhat younger (50 vs. 56, P=0.076) and more likely to be married (82% vs. 44%, P<0.002). No significant differences were seen for gender, education, or employment between SOAPP+ and SOAPP- subjects. This study is ongoing with a recruitment target of 250 subjects.

Conclusion: These results suggest that a significant proportion of ED patients with chronic cancer-related pain are at risk for aberrant drug-related behavior. Those with chronic cancer-related pain are often perceived to be at lower risk for aberrant drug-related behavior than those with chronic non-cancer pain and this perception may be incorrect. Information from this study will be used to develop opioid misuse risk stratification approaches for assessment and treatment of chronic pain with the goal of ameliorating prescription opioid risk while adequately treating pain in this complex population.

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Pain Management/Analgesia/Anesthesia

STUDY OF THE PRE-HOSPITAL ANALGESIA PRACTICES FOR INJURED PATIENTS

Anne-claire Michel Ep. Mlynski (1), Hugues Lefort (1), Gwenaëlle Majoufre (1), Daniel Jost (1), Catherine Verret (2), Romain Jouffroy (1), Michaël Lemaire (3), Sylvie Margerin (3), Jean-pierre Tourtier (1), Laurent Domanski (1)

1. Emergency medicine departement, Fire Brigade of Paris, Paris, France

2. Centre d'Epidémiologie et de Santé publique des Armées, Hopital d'instruction des Armées Bégin, Saint-Mandé, France

3. Pharmacy and biomedical engineering departement, Fire Brigade of Paris, Paris, France

Corresponding author: anne-claire@mlynski.net

Keywords: Analgesia, Ketamine, Wounds and Injuries

Introduction: The most recent recommendations for pre-hospital analgesia are dated 2010. The aim of this study was to determine the frequency of use of the various analgesic combinations (AC) including morphine and determining the most effective AC in pre-hospital injury settings.

Materials and methods: Observational, prospective study of practices. Inclusion criteria: victim in pain necessitating morphine titration by a pre-hospital medical team and undergoing 2 pain measurements using the digital scale. **Data collected:** age, gender, causal disease, Numeric rate scale (NRS), analgesics used. The AC efficacy assessment criterion was the reduction in the number of points on the NRS.

Results: From 09/2010 to 06/2011, 76 patients were included. The median age was 41 years [19-55] and there were 54 men (67%). The cause of pain was injury (n = 40), medical (n = 22) or poorly determined (n = 14). The 4 AC most frequently used were morphine + paracetamol (MP)

(n = 25), morphine alone (M) (n = 21), morphine + ketamine (MK) (n = 8), morphine + paracetamol + ketamine (MPK) (n = 8). In the context of injury, the analysis of the data by AC included 29 patients. The AC inducing a reduction in NRS were: morphine alone (n = 7 patients) with a median reduction of 3 NRS points (interquartile range: [2-4]), MP (n = 10) with a reduction of 5 NRS points [3-5.5], MPK (n = 6) with a median reduction of 5.5 NRS points [4-6] and MK (n = 6) with a reduction of 6.5 NRS points [6-7]. In the context of injuries, the analgesic efficacy of MK was significantly superior to that of M ($p = 0.03$).

Discussion: In injuries, the most effective AC (MK) was not the one most frequently used (MP). On the basis of the recent literature, MK should be considered more frequently.

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Pain Management/Analgesia/Anesthesia

KETAMINE/PROPOFOL VERSUS ETOMIDATE/FENTANYL FOR PROCEDURAL SEDATION AND ANALGESIA IN THE EMERGENCY DEPARTMENT: A PROSPECTIVE, RANDOMIZED TRIAL.

Erkman Sanri (1), Sinan Karacabey (1), Haldun Akoglu (2), Ozlem Guneyssel (1)

1. emergency department, Lutfi Kirdar Kartal Education and Research Hospital, Istanbul, Turkey

2. emergency department, Marmara university faculty of medicine, Istanbul, Turkey

Corresponding author: erkman00@gmail.com

Keywords: procedural sedation and analgesia, Ketamine propofol, etomidate fentanyl

Study objectives: The primary objective is to compare the effectiveness, sedation time and adverse events between ketamine/propofol (ketofol) combination and etomidate/fentanyl (etofen) combination, in patients requiring procedural sedation and analgesia (PSA) for orthopedic procedures in emergency department (ED). Secondary objectives are to compare the changes in vital signs and the peak time of the change, satisfaction scores and Ramsay Sedation Scores (RSS).

Methods: We performed a randomized, prospective trial to patients who presented to ED between June 2012 and February 2013, requiring PSA for management of an orthopedic injury. Patients >14 years and American Society of Anesthesia (ASA) physical status ≤ 2 were randomized to receive either ketofol or etofen. Ketofol patients received an initial intravenous (IV) bolus dose of ketamine 0.75 mg/kg and propofol 0.75 mg/kg, if additional doses were required ketamine 0.375 mg/kg IV and propofol 0.375 mg/kg IV every 3 minutes were administered. Etofen patients received an initial IV bolus dose of etomidate 0.15 mg/kg and fentanyl 1.5 mcg/kg IV, if additional doses were required etomidate 0.1 mg/kg IV every 2 minutes were administered. Physiologic data, medication doses, adverse

events, sedation times, RSS and physician satisfactions were recorded.

Results: A total of 113 patients were enrolled. Fifty-six (49,6%) patients were in ketofol group and 57 (50,4%) patients were in etofen group. Twenty-four (42,1%) patients receiving etofen and 1 (1,8%) patient receiving ketofol required repeated medication dosing ($p=0,001$). Adverse events in ketofol group (62,5%) were significantly higher than in etofen group (33,3%) ($p=0,004$). Patients who experienced O₂ desaturation ($p=0,004$) and emergence reaction ($p=0,013$) were significantly higher in ketofol group and myoclonus was significantly higher in etofen group ($p=0,012$). Only 3 (10,7%) patients in ketofen group required bag-mask ventilation and none of them were intubated. There were significant differences in changes of vital signs between the groups. There were significant changes in blood pressure (BP) between groups ($p=0,001$). All patients in ketofol group had increased BP's. The increase in systolic and diastolic BP in ketofol group is significantly higher than etofen group ($p=0,001$). O₂ saturation levels in etofen group were higher than ketofol group ($p=0,042$). Sedation time of etofen group was shorter than ketofol group ($p=0,001$). Median sedation time in etofen group is 8 minutes (8,53 \pm 4,17; 95% confidence interval [CI]= 7,41 to 9,63 minutes) and in ketofol group is 18 minutes (18,18 \pm 2,34; 95% CI = 17,55 to 18,80 minutes). The Ramsay Sedation Score (RSS) of ketofol group was significantly higher than etofen group ($p=0,001$). Median RSS of ketofol group is 5 (5,43 \pm 0,50; 95% CI =5,29 to 5,56) and etofen group is 4 (4,16 \pm 0,67; 95% CI =4,06 to 4,25). Perceived pain; before and after the procedure in ketofol group, as measured by the Visual Analog Scale (VAS), was significantly higher than in ketofol group ($p=0,001$; $p=0,001$). Although the difference between before and after procedure VAS's is higher in etofen group compared to ketofol group, there were no significant differences ($p=0,076$). The physician satisfaction, as measured by the Visual Analog Scale (VAS), in ketofol group is significantly higher than etofen group ($p=0,018$).

Conclusions: The etomidate/fentanyl combination provides an effective and safe procedural sedation and analgesia in emergency department. Etomidate/Fentanyl combination causes less adverse events, fewer effects on vital signs, shorter sedation times and lighter sedation level when compared to the ketamine/propofol combination.

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Pain Management/Analgesia/Anesthesia

EFFICIENCY OF FEMORAL NERVE BLOCK FOR ACUTE SEVERE PAIN IN FEMORAL DIAPHYSEAL FRACTURE IN PREHOSPITAL SETTINGS.

Guillaume Courtiol (1), François-xavier Ageron (1), David Delagdo (1), Gael Gheno (1), Stephanie Tisserand (2), Marion Lume (2), Dominique Savary (1)

1. Haute Savoie, Centre Hospitalier de la Région d'Annecy, Annecy, France

2. Haute Savoie, Centre Hospitalier de la Région Annecienne, Annecy, France

Corresponding author: carabinos21@gmail.com

Keywords: femoral nerve block, prehospital, femoral fracture

Background: Acute severe pain in traumatology is a frequent problem in prehospital setting. The EMS System in France is two-tiered. Advanced Life Support is provided by mobile intensive care unit (MICU) with emergency physician on board. For each femoral fracture, a MICU is dispatched, prior to treat potential haemorrhagic shock and otherwise for analgesia. Femoral regional anaesthesia (FRA) as femoral nerve block or fascia iliaca compartment nerve block is simple technique easily performed by trained physicians on the injury site. The aim of the study was to assess the efficiency of femoral nerve block associated with intra-venous analgesia and sedation compared to intra-venous drugs alone in the prehospital setting.

Methods: Observational retrospective study based on propensity score matching analysis. **Inclusion criteria:** Any suspected femoral diaphyseal fracture with Initial Numeric Scale (NS) superior or equal to 6 between 2007 and 2012 whom the MICU of Annecy (SAMU 74, France) was dispatched in the prehospital setting. **Exclusion criteria** were patients presenting multiple trauma, patients with tracheal intubation and missing data regarding as pain assessment. The primary endpoint was pain numeric scale at the arrival in the hospital (end of the prehospital intervention). The secondary endpoint was pain relief at the arrival in the hospital and considered as NS inferior or equal to 3. We collected data including age, sex, initial and final NS, use of morphine, synthetic opioid (fentanyl or sufentanyl), ketamine, midazolam and doses used, traction and FRA. Emergency physician could chosen any femoral nerve block technique (Femoral nerve Block or Fascia Iliaca compartment Block). Local anaesthetic used was lidocaine or mepivacaine. We compared means with Student T-test and frequencies with Chi-2 test. To control for potential bias and confounders, we conducted a full non-parsimonious propensity score matching with a method of nearest neighbor. We hypothesized a difference in mean for the primary endpoint of 1.3 corresponding to clinical relevant difference. The two-sided significance level was $P < .05$.

Results: During the study period, we recorded 269 patients with suspected femoral fracture. Among them 133 fulfilled the inclusion criteria. 139 patients did not met inclusion criteria (10 tracheal intubations, 22 multiple trauma, 114 missing initial or final NS, 22 initial NS inferior to 6). Among the two groups with FRA (treated) $n=93$ or without FRA (control) $n=40$, we did not observe any difference except a trend for age (48 vs 40 $p=.12$). The mean morphine dose used was not significantly different between two groups (5,7 vs 5,6 mg $p=.85$). The frequency of opioid used including morphine, fentanyl or sufentanyl was not different between groups (96% vs 93% $p=.45$). Regarding as primary endpoint, the mean NS in the treated group was significantly lower than the control group (1,41 vs 2,75 $p<.001$) corresponding to a NS difference of 1,34 point. Pain relief was significantly higher in FRA group compared to control group (89% vs 65% $p=.001$). In propensity score matching patients, we observed a mean NS for treated

group of 1,41 and 3,39 in the control group ($p<.001$) corresponding to a NS difference of 1,99. Pain relief in the propensity score matching patients, was significantly higher in the treated group (89% vs 47% $p<.001$), corresponding to an absolute risk reduction of 42% and a number needed to treat of 2 patients. If we consider the observed difference in mean of the primary endpoint, we need 40 patients in each group to provide a power of 80% with an alpha risk 5% and considered the difference observed in the propensity score matching patients we need 27 patients in each group to provide a power of 90% with an alpha risk 5%.

Conclusion: Despite the limitation of a retrospective study, femoral regional anaesthesia seems to be more efficient to manage pain compared to intra-venous analgesia alone in the prehospital setting for femoral diaphyseal fracture. As the patients of the study were not randomly assigned, we performed a propensity score matching analysis which finds a more consistent difference in pain in favour of regional anaesthesia. Both differences were clinically relevant. Further studies have to be conducted in prospective and randomized trial.

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Pain Management/Analgesia/Anesthesia

COMPARISON OF THE EFFICACY OF OXYCODONE AND NAPROXEN TO RELIEF PAIN FROM SOFT TISSUE INJURIES IN THE EMERGENCY DEPARTMENT

Mohammad Amin Zare (1), Marzieh Fathipirboudagh (1), Peyman Hafezimoghadam (1), Saeed Abbasi (1), Davood Farsi (1), Hamidreza Bahmani (1)

1. Emergency department, Iran University of Medical Sciences, Tehran, Iran, Islamic Republic of

Corresponding author: mazare74@yahoo.com

Keywords: Soft tissue injury, Pain relief, Naproxen

Background and objective: Soft tissue injuries are considered one of the important reasons for referring patients to emergency departments which usually associated with pain and great distress in patients. Non-steroidal anti-inflammatory drugs (NSAIDs) and opioid analgesics are used to relieve this pain. The purpose of this study was to compare the therapeutic effects and side effects of oral naproxen and oral oxycodone in soft tissue injuries.

Methods: In this double blind randomized clinical trial, 150 patients with soft tissue injuries were randomly divided in the two treatment groups of oral oxycodone (75 cases) and oral naproxen (75 patients) and compared about the effectiveness of treatment in reducing pain severity. Two groups were matched in terms of age distribution, gender, type of soft tissue injury and the severity of pain. Pain severity (pain score in visual analog scale) and incidence of complications were evaluated in two groups 30 and 60 minutes after drug administration. Also the need for rescue dose was assessed 24 hours after drug administration.

Results: 30 minutes after drug administration, mean pain severity was 4.5 ± 1.4 in the oxycodone group, and 4.4 ± 1.2 in the naproxen group which was not significantly different between the two groups ($P = 0.76$). Also, one hour after drug administration the two groups had similar pain severity (respectively, 2.5 ± 1.3 , versus 2.6 ± 1.3 ; $P = 0.45$). Pain severity was significantly reduced in both groups 30 minutes and 60 minutes after intervention ($P = 0.0001$). Side effects in the group treated with oxycodone was significantly higher than naproxen group (respectively, 33.3% versus 5.3%; $P = 0.0001$). Pain severity in patients who had splint was significantly lower ($P = 0.007$). In follow up 24 hours after treatment, 12 patients (16%) among the oxycodone group and 5 patients (6.6%) in the naproxen group needed rescue dose. But this difference was not statistically significant ($P = 0.07$).

Conclusions: Naproxen and oxycodone both have similar effects in relieving pain caused by soft tissue injury, although Naproxen had lesser side effects than oxycodone and thus Naproxen is recommended for the treatment of acute soft tissue injury.

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Pain Management/Analgesia/Anesthesia

ORAL OXYCODONE PLUS INTRAVENOUS ACETAMINOPHEN FOR ACUTE PAIN CONTROL IN EMERGENCY DEPARTMENT: A DOUBLE BLIND PLACEBO CONTROLLED RANDOMIZED CLINICAL TRIAL

Marzieh Fathipirboudagh (1), Mohammad Amin Zare (1), Peyman Hafezimoghadam (1), Alireza Hasanghalyayi (1)

1. Emergency department, Iran University of Medical Sciences, Tehran, Iran, Islamic Republic of

Corresponding author: mazare74@yahoo.com

Keywords: Oral Oxycodone, Intravenous Acetaminophen, Fracture

Objectives: Bone fracture is a common cause of acute pain in emergency departments targeting the multifaceted mechanisms of pain with combinations of multiple analgesics (multimodal analgesia) can increase the pain control efforts efficacy and decrease the adverse effects of each medication.

Method: 153 patients with acute bone fracture were randomly allocated to two groups receiving intravenous morphine sulfate (74 patients) or oral oxycodone plus intravenous acetaminophen (79 patients). Pain scores and drugs' adverse effects were assessed 10, 30 and 60 minutes after treatment.

Results: Pain scores were similar between groups before, 30 and 60 minutes after medication but patients in morphine sulfate group experienced less pain 10 minutes after medication. Eight (10.8%) patients in morphine sulfate group and 26 (32.9%) patients in acetaminophen/oxycodone group experienced nausea which was statistically significant higher (P -value=0.001).

itching was seen in 12 (15.1%) patients of acetaminophen/oxycodone group and 3 (4.0%) patients of patients in morphine sulfate group (P -value= 0.02).

Conclusion: intravenous acetaminophen plus oral oxycodone is as effective as intravenous morphine sulfate in acute pain control in ED but with a less desirable safety profile.

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Pain Management/Analgesia/Anesthesia

ACUPUNCTURE FOR THE TREATMENT OF BACK PAIN IN THE EMERGENCY DEPARTMENT

Phrom Adi (1), Samuel Bar Chaim (2), Almog Guy (3), Cardush Ramy (4), Mirovsky Ygal (4), Moritz Yohav (1), Amos Ziv (5)

1. Complementary Medicine Unit, Asaf Harofe Med.Center, Beer Yaakov, Israel

2. Emergency Department, Asaf Harofe Med.Center, Beer Yaakov, Israel

3. Complementary Medicine Unit, Asaf Harofe Med.Center, Beer Yaakov, Israel

4. Orthopedic Division, Asaf Harofe Med.Center, Beer Yaakov, Israel

5. Complementary Medicine Unit, Asaf Harofe Medical Center, Beer Yaakov, Israel

Corresponding author: bar_sam@asaf.health.gov.il

Keywords: Acupuncture, Pain, Emergency Department

Background:

Acute pain due to trauma is a common complaint in hospital Emergency Departments (ED) and often remains severe at time of

release. The effect of Acupuncture as add-on therapy to standard medication

care was assessed in patients with acute back or neck pain in the ED.

Methods: 67 patients were randomly assigned to either standard care in

conjunction to real acupuncture, standard care in conjunction to placebo

acupuncture or standard care alone. Pain scores were recorded before and

after medication and again after acupuncture. The Numeric Rating Scale (NRS)

1-10 was used for pain scores. Range of motion was measured by goniometer

degrees and anxiety was assessed by short check list (SCL) questionnaire.

Results: Medication effect was similar in all groups (-1.48, -1.57, -1.4;

between group $p=0.123$). Additional pain reductions and pain scores at time

of release were lowest after real acupuncture (-2.58, -0.83, -0.68; between

group $p=0.02$) and (8/3.9, 7.6/5.2, 8.8/6.8 admittance Vs. release scores;

$p=0.002$) for real acupuncture, placebo acupuncture and standard care only

respectively. Real acupuncture demonstrated a greater increase in back flexion (26.6, 7.4, 3.42 degrees; between group $p=0.004$ for real acupuncture, placebo acupuncture and standard care respectively). Both real acupuncture and placebo acupuncture groups demonstrated a decrease in anxiety SCL score compared standard care alone.
Conclusions: In this randomized controlled trial, real acupuncture showed significant pain reduction and increased back flexion and seems to be an effective add-on treatment in patients visiting ED for acute back or neck pain. Further investigation is therefore warranted

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Pain Management/Analgesia/Anesthesia

THE VALUE OF COMBINED MORPHINE AND KETAMINE IN PRE-HOSPITAL MULTIMODAL ANALGESIA.

Hugues Lefort (1), Anne-claire Michel Ep. Mlynski (1), Gwenaëlle Majoufre (1), Romain Jouffroy (1), Catherine Verret (2), Flora Jourquin (3), Sylvie Margerin (3), Jean-pierre Tourtier (1), Daniel Jost (1), Laurent Domanski (1)

1. Emergency medicine departement, Fire Brigade of Paris, Paris, France
2. Centre d'Epidémiologie et de Santé publique des Armées, Hopital d'instruction des Armées Bégin, Saint-Mandé, France
3. Pharmacy and biomedical engineering departement, Fire Brigade of Paris, Paris, France

Corresponding author: anne-claire@mlynski.net

Keywords: Conscious Sedation, Ketamine, Drugs combinations

Introduction: Pre-hospital analgesia is subject to the most recent recommendations formulated by experts in 2010 (Ann fr Med Urgence (2011) 1:57-71). The aim of this study was to determine the value of adding ketamine to multimodal analgesia including at least one opioid.
Materials and methods: Non-randomized, open-label, prospective, observational study comparing patients who had and patients who had not received ketamine. Inclusion criteria: victim in pain managed by a pre-hospital medical team with pain evaluation using a digital scale (DS) at least twice and having required at least 1 intravenous titrated morphine injection before arrival at the hospital. The data collected were age, gender, causal disease, DS before arrival at the hospital and analgesic treatments administered. The analgesics available to the emergency physician were: morphine, paracetamol, ketamine and nitrous oxide. The multimodal administration decision was left to the discretion of the physician. The primary assessment criterion was the analgesia gain estimated by the DS reduction (median reduction in the number of

points) in the 'with ketamine' and 'without ketamine' groups.

Results: Over 10 months, 76 patients were included. The median age was 41 years [19-55] and there were 54 (67%) men. For all diseases taken together, the DS reduction was significantly greater in the patients who received ketamine ($n = 26$) than in those who did not ($n = 50$): -6 [-7;-3] vs. -4 [-5;-3], respectively, $p = 0.001$. For injured victims ($n = 34$), the reduction in VAS was -6 [-7;-5] in the patients with ketamine ($n = 19$) vs. -4 [-5;-2] in the patients without ketamine ($n = 15$), $p = 0.02$.

Discussion. The addition of ketamine during pre-hospital multimodal analgesia, after having initiated morphine titration, procured a significant benefit in terms of DS reduction, in particular in injured victims. The findings are in line with those of recent publications on the subject (Jennings et al. Ann Emerg Med. 2012 Jun; 59(6): 497-503).

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Cardiovascular 1

WHAT IS THE RATE OF ADVERSE CARDIAC EVENTS IN PATIENTS WITH TROPONIN I ASSAYS LESS THAN 99TH CENTILE USING A SENSITIVE ASSAY?

Anne-maree Kelly (1), Sharon Klim (1)

1. Joseph Epstein Centre for Emergency Medicine Research, Western Health, Australia, St Albans, Australia

Corresponding author: anne-maree.kelly@wh.org.au

Keywords: chest pain, troponin, risk stratification

Aim: Potentially cardiac chest pain is a common presentation to emergency departments (ED). For patients who rule out for acute coronary syndrome (ACS), current Australasian guidelines recommend further testing such as exercise stress test, nuclear medicine scans or CT coronary angiography to identify coronary artery disease (CAD). Evidence of improved outcome from this approach is scarce and the recommendation has not changed with the advent of sensitive biomarker assays. Our aim was to determine the rate of adverse cardiac events at 30 days in ED chest pain patients without known CAD who have troponin I (TnI) assays <99th centile using a sensitive troponin assay.

Methods: Prospective observational cohort study. Clinical and investigational data were collected. Primary outcome of interest was the proportion of patients with TnI assays <99th centile and no known CAD who suffered a major adverse cardiac events (MACE: defined as death, new myocardial infarction, serious arrhythmia, cardiac arrest) within 30 days. Secondary outcome was MACE or revascularization.

Results: 476 patients were studied. 251 patients had all TnI assays in the ED <99th centile. There were no MACE (0%, 95% CI 0-1.5%) and 3 revascularizations within 30 days (0.1%, 95% CI 0.04-3.5%). Negative predictive value (NPV) for MACE was 100% (95% CI 98.1-100%). NPV for MAC or revascularization was 98.8% (95% CI 96.3-99.7%).

Conclusion: Adverse cardiac events at 30 days are rare in patients with sensitive Tnl <99th centile. Recommendations for routine further testing should be revisited.

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Cardiovascular 1

PRESENTING HEMODYNAMIC PROFILES OF ACUTELY ILL EMERGENCY DEPARTMENT PATIENTS WITH SUSPECTED HEART FAILURE, SEPSIS OR STROKE MEASURED USING CONTINUOUS NONINVASIVE FINGER CUFF TECHNOLOGY

Richard Nowak (1), Prabath Nanayakkara (2), Salvatore Disomma (3), Phillip Levy (4), Edmee Schrijver (2), Alessandro Autunno (3), Michele Moyer (5)

1. Emergency Medicine, Henry Ford Health System, Detroit, Michigan, United States
2. Emergency Medicine, VU University Medical Center, Amsterdam, Netherlands
3. Emergency Medicine, Sant' Andrea Hospital, Rome, Italy
4. Emergency Medicine, Detroit Receiving Hospital, Detroit, Michigan, United States
5. Emergency Medicine, Henry Ford Health System, Detroit, Michigan, United States

Corresponding author: rnowak1@hfhs.org

Keywords: Emergency medicine, Noninvasive continuous hemodynamic monitoring, Acute heart failure, sepsis, stroke

Background: Many specialists, including Emergency Physicians, cannot reliably estimate the underlying hemodynamic (HD) profiles of acutely ill patients using only clinical assessments. Objective HD measurements in the Emergency Department (ED) could assist in the diagnosis, therapeutic plan development and disposition and risk stratification decisions for individual patients with similar suspected diseases. The PREMIUM registry is a multinational effort to noninvasively measure and describe the underlying HD profiles of acutely ill ED patients. Methods: Four centers (2 European, 2 United States) enrolled on ED presentation acutely ill patients with clinically suspected heart failure (AHF) exacerbation (known heart failure history with a natriuretic peptide ordered), sepsis (lactate and/or blood cultures requested) or stroke (head CT ordered). These patients underwent 2-4 hours of continuous noninvasive hemodynamic monitoring using the Nexfin finger cuff device (Edwards Lifesciences, Bmeye, Amsterdam, The Netherlands). The beat to beat HD measurements were averaged for the initial 15 minutes of monitoring (prior to any therapeutic interventions) resulting in a HD profile for each patient. Group differences were compared using ANOVA. Results: 514 patients were enrolled. The HD recordings of 510 were analyzed: 185 (36.3%) AHF, 194 (38.0%) sepsis and 131 (25.7%) stroke. Mean (standard deviations) age (years) amongst the groups differed: 69.3 ± 15.9 AHF, 64.5 ± 16.9 sepsis, and 67.5 ±

15.4 stroke (p=0.01) while gender and race did not. Most patients were African/Caribbean or Caucasian. The AHF, sepsis, and stroke groups initial 15 minute averaged HD parameters differed significantly (all p<0.0001). Mean initial values with standard deviations and ranges for blood pressures (BP) (mmHg), cardiac output (CO) (L/min) and systemic vascular resistance (SVR) (dynes-sec-cm⁻⁵) were as follows respectively. Systolic BP: 125 ± 29.1 (55.9, 233.2), 115.6 ± 28.4 (39.1, 233.2), 142.8 ± 30.6 (76.2, 240.8). Diastolic BP: 69.5 ± 16.0 (32.5, 114.3), 65.0 ± 13.4 (312.8, 106.6), 78.0 ± 16.5 (44.6, 142.1). Mean BP: 89.4 ± 19.5 (43.9, 154.9), 84.3 ± 18.4 (39.8, 152.1), 102.4 ± 20.6 (57.1, 178.4). CO: 5.4 ± 1.9 (1.1, 12.3), 6.5 ± 2.0 (0.9, 11.7), 5.5 ± 2.1 (2.0, 12.6). SVR: 1483.7 ± 613.7 (660.6, 5216.8), 1172.1 ± 618.4 (525.6, 6173.9), 1787.6 ± 927.4 (630.7, 7235.5). Discussion: The initial HD profiles for patients with suspected acute AHF, sepsis and stroke differ significantly. These data suggest a potential role for early HD profiling in the diagnosis of patients, especially with different diseases presenting with overlapping clinical features (eg, AHF and sepsis). More importantly, however, individual patients presenting to the ED with similar symptoms and signs suspicious for either suspected AHF, sepsis and stroke do have very different unrecognized underlying presenting HD profiles, with large standard deviations and ranges for BP, CO and SVR. This suggests that therapy for each acute disease could be tailored at the individual patient level based on assessments of their underlying measured unique HD profile. Conclusions: Advances in technology now allow for routine noninvasive continuous measurement of the underlying HD parameters of acutely ill patients. The measurement of these HD parameters in the ED may be very important for more accurate patient diagnosis and the development of an individualized therapeutic management plan and disposition decision for each person. Further clinical studies are needed to determine how best to utilize these individual HD measurements to direct ED patient care and improve outcomes.

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Cardiovascular 1

FACILITATED PCI OR PRIMARY PCI? REPERFUSION STRATEGIES FOR STEMI PATIENTS.

Sreejib Das (1)

1. Emergency Department, Colchester General Hospital, Ipswich, United Kingdom

Corresponding author: sreejibdas@hotmail.com

Keywords: Facilitated PCI, PCI, STEMI

Background

Primary percutaneous coronary intervention (P-PCI) is the preferred treatment in patients with ST elevation myocardial infarction (STEMI). The time to treatment with primary PCI is an important determinant of the clinical outcome among patients who have had an acute myocardial infarction. For patients presenting to a PCI

capable hospital, this is rarely an issue. It is more complicated in patients who first present to a hospital without PCI capabilities. The logistics of transporting patients between hospitals greatly increases the time to treatment. Various approaches have been tried to bridge the gap between door to balloon time (DBT).

Aims

The objective was to evaluate the evidence of fibrinolysis facilitated PCI (F-PCI) versus Primary PCI for patients presenting to a hospital that lacks catheterisation facilities.

Methods

A compressive literature search of MEDLINE, EMBASE, and CINAHL databases was performed. Mesh terms were used when available. Key terms used were Facilitated PCI, Failed PCI, PCI Rapid PCI, early PCI Rescue PCI, PCI, Thrombolytic therapy, and blood clot lysis. They were limited to clinical trials or randomised controlled trials. 10 studies were identified. The composite outcome was chosen for evaluation and a meta-analysis was done using revman 5 software. One study was excluded, as composite outcome was unavailable.

Also an audit cycle was done with facilitated PCI as the mainstay of treatment or P-PCI as mainstay of treatment. 28 patients were identified with STEMI in the initial phase and 12 in the secondary phase and the composite outcome measured.

Results

A total of nine RCT were included in the study. In the F-PCI group of 2284 patients, 335 patients had an adverse event. In P-PCI group comprising of 2327 patient only 274 patients had an adverse event. Using Mantel-Haenszel test a 95% CI risk ratio was 1.25 (1.079-1.449) in favour of P-PCI than F-PCI.

In the initial audit cycle 14% of patient died 11 % had re-infract within 30 days and 7% had CCF. Subsequent audit there was no deaths 17 % had CCF, and 17% continued to have angina.

Conclusion

There is overall an improved outcome for patient undergoing P-PCI in comparison to F-PCI irrespective of where they initially present. The argument for F-PCI has been finally put to rest, and efforts must be made to ensure early transport of patients to a PCI capable hospital.

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Cardiovascular 1

FACTORS ASSOCIATED WITH SURVIVAL AFTER OUT-OF-HOSPITAL CARDIAC ARRESTS PROVIDED BY ACLS TEAMS.

Karolina Borsukiewicz (1), Gemma Smout-mattiazzo (1)

1. Emergency department, Reinier de Graaf Hospital, Delft, Netherlands

Corresponding author: karolabo@hotmail.com

Keywords: out-of-hospital cardiac arrest, resuscitation, ROSC

Abstract

INTRODUCTION AND OBJECTIVES: The majority of published reports about the survival after out-of-hospital cardiac arrests differs from 17.5% to 36.1% (1). The purpose of the study is to describe the epidemiological characteristics of cardiac arrests provided by advanced cardiovascular life support teams in the small community town of Delft in the Netherlands and look for factors associated with successful cardiopulmonary resuscitation.

METHODS: A retrospective review of charts was carried out and 104 adult patients (age>18 years) with nontraumatic cardiac arrest were included. All cases of cardiac arrest between February 2009 and January 2013 were considered. The variables measured were the delay time to basic life support, the prehospital and in-hospital resuscitation time, primary cardiac rhythm, age, gender, previous diseases, autopsy outcome and the number and characteristics of patients discharged from hospital with good neurological outcome.

RESULTS:

In these 104 subjects the mean age was 70 years (SD 12.8). 71 subjects (68.3%) were men. Previous heart disease was documented in 54 cases [coronary heart disease in 22, arterial hypertension in 12 and other cardiac history in 20]. In 95 cases the primary rhythm was known: nonshockable rhythm in 55 and shockable rhythm in 40. In 19 (18.3%) of cases an autopsy was carried out and 50% of the results showed myocardial infarction. Return of spontaneous circulation (ROSC) was achieved in 43 (41.3%) patients. 17 (16.3%) patients survived to hospital discharge and had good neurological outcome. There was significant difference ($p<0.01$) between the mean prehospital resuscitation time of the patients who survived to hospital discharge and had good neurological outcome (13.3 min; SD 16.3) and the patients without ROSC or patients with ROSC and who did not survive to discharge (27.4 min; SD 15.2). The mean in-hospital reanimation time of the patients who survived to hospital discharge and had good neurological outcome was 7.7 min (SD 6.6) and the patients without ROSC or patients with ROSC and who did not survive to discharge 24 min (SD 15.2; $p<0.07$) respectively.

CONCLUSIONS: Cardiac arrest survival with a good neurological outcome was 16.3%. The out and in-hospital resuscitation time were predictors of successful CPR. The patients who did survive cardiac arrest and had good neurological outcome had the reanimation time at least half time shorter than the patients without ROSC or patients with ROSC and who did not survive to discharge. References: Circulation. 2003 Jun 10;107(22):2780-5. Epub 2003 May 19. Temporal trends in sudden cardiac arrest: a 25-year emergency medical services perspective. Rea TD, Eisenberg MS, Becker LJ, Murray JA, Hearne T.

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Cardiovascular 1

PROGNOSIS OF ACUTE PULMONARY EMBOLISM: RETROSPECTIVE ASSESSMENT OF THE CORRELATION BETWEEN THE PULMONARY EMBOLISM SEVERITY INDEX (PESI) AND THE INVERSION OF THE RIGHT-TO-

LEFT VENTRICULAR DIAMETER RATIO ON INITIAL COMPUTED TOMOGRAPHY

Nicolas Dublanchet (1), Lucie Cassagnes (2), Fares Moustafa (1), Nicolas Vincent (1), Julien Raconnat (1), Pascal Chabrot (2), Louis Boyer (2), Jeannot Schmidt (1)

1. Emergency department, CHU Gabriel Montpied, Clermont-Ferand, France

2. Visceral and Vascular Imaging Department, CHU Gabriel Montpied, Clermont-Ferand, France

Corresponding author: ndublanchet@chu-clermontferrand.fr

Keywords: Acute Pulmonary Embolism, Computed tomography, Clinical Score

Objectives : In acute pulmonary embolism (PE), prognosis is correlated to the right ventricular dysfunction. It can be assessed by a clinical score (Pulmonary Embolism Severity Index, PESI) but also by identifying severity markers on the initial computed tomography (CT). The main objective of our study was to evaluate the correlation between the PESI and one of the most common markers on computed tomography: inversion of right-to-left ventricular diameter ratio on axial views (RV/LV). The secondary objective was to correlate the RV/LV disruption to one-year mortality rates.

Material, Methods : 207 consecutive patients presenting acute PE in our emergency unit have been included from 2007 to 2009 (mean age 69.8 ± 17 years). RV/LV ratios were retrospectively measured on axial views by two practitioners blinded from clinical and outcome data, and correlated with PESI and one-year mortality. A cut-off value of $RV/LV > 0.9$ has been employed to define its inversion. Statistical analysis used correlation tests; a cut-off value for PESI predicting a RV/LV inversion has been established by a ROC curve. Surviving analysis have been made with Kaplan Meier method and compared by a Mantel-Cox.

Results : Patients presenting a RV/LV ratio > 0.9 had a significantly higher PESI ($p < 0.001$). A PESI cut-off value of 88 is a good predictor of RV/LV inversion ($Se=Sp=0.68$). This value is very close to 85, which is the limit between "low risk" PE and "intermediate risk" PE, as defined by Aujesky et al. In patients presenting a RV/LV > 0.9 a higher one-year mortality was observed, close to significance ($p = 0.056$); 90.9% of patients with massive acute PE according had a RV/LV > 0.9 . Mortality rates in our study were similar to those predicted by PESI values.

Discussion : In acute PE prognosis assessment, an inversion of RV/LV ratio on the initial computed tomography is correlated with and increased PESI clinical score. RV/LV seems to be also a predictor of middle-term (one year) mortality. Computed Tomography is not only the first-line imaging test for acute PE, but an important tool in prognosis assessment.

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Cardiovascular 1

DIAGNOSTIC OF ELECTROCARDIOGRAM ABNORMALITIES BY RESIDENTS

Hayatte Akodad (1), Nicolas Javaud (1), Tomislav Petrovic (1), Paul-georges Reuter (1), Pascal Orer (2), Frédéric Adnet (2), Frédéric Lapostolle (3)

1. Université Paris 13, Sorbonne Paris Cité, EA 3509 Hôpital Avicenne, 125, rue de Stalingrad, 93009, Bobigny, France, SAMU 93 - UF Recherche-Enseignement-Qualité, Bobigny, France

2. SAMU 93 - UF Recherche-Enseignement-Qualité, Université Paris 13, Sorbonne Paris Cité, EA 3509 Hôpital Avicenne, 125, rue de Stalingrad, 93009, Bobigny, France, Bobigny, France

3. 5) AP-HP, Urgences - SAMU 93, Hôpital Avicenne, F-93000 Bobigny, France, Université Paris 13, Sorbonne Paris Cité, EA 3509, SAMU 93 - UF Recherche-Enseignement-Qualité, Bobigny, France

Corresponding author: frederic.lapostolle@avc.aphp.fr

Keywords: ECG, Training, Resident

Context and objective:

ECG is a routine decision tool in emergency care. A good analysis is essential to decision making. The objective of this study was to evaluate ECG knowledge in residents.

• Methods

A series of 14 ECG with rhythm disorders (ventricular fibrillation, Brugada, atrial fibrillation, atrial flutter, WPW, twist of point = torsade de pointe), of myocardial ischaemia (3 STEMI), other abnormalities (long QT, pericarditis) and a normal ECG was submitted to residents. They had to establish a diagnosis of each ECG. Data regarding training and ease to analyze the ECG were collected.

Primary end-point: acceptable diagnosis, i.e. identification of the main abnormality (for example STEMI even with inaccurate territory).

• Results

- 17 residents (12 in emergency and 5 in general medicine) analyzed each of the 14 ECG.

- 76% stated they received training on ECG.

- 25% said they were "ill-at-ease" with the ECG analysis, 35% were comfortable and 40% of a variable ease.

- An acceptable diagnosis was given in 141 of 238 analyzed ECG (59 %). The percentage of acceptable answers according to the category of diagnosis is as follow : 76% for rhythm disturbances, 76% for myocardial ischemia, 53% for other abnormalities and 35% for normal ECG.

• Conclusion

Residents performance in ECG analysis is globally "acceptable". It is variable according to the type of abnormalities. It is perfectible. Specific training for residents in emergency medicine should be organized.

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Cardiovascular 1

CLINICAL PROFILE OF ACUTE HEART FAILURE IN PATIENTS TREATED IN THE EMERGENCY DEPARTMENT OF THE GENERAL HOSPITAL OF ALBACETE. EAHFE-III STUDY.

Tanilu Christie Grande Montalvo, Javier Francisco Lucas Imbernón, Graciela Cueto González, Raúl Salmerón Ríos, Miguel Ángel Callejas Montoya, Nilda Patricia De La Cruz Castro, Sergio Salmerón Ríos.

Emergency Department, General Hospital of Albacete, Albacete, Spain

Corresponding author: tanilu_grande@yahoo.com

Keywords: Acute Heart Failure, Clinical profile, Treatment

Introduction: Acute heart failure (AHF) has become one of the most important problems of public health in developed countries. Its prevalence in people over 70 years is estimated between 7% and 18%, is one of the most frequent causes of consultation in the hospital emergency department (ED) and the leading cause of hospitalization in elderly patients. In addition, 86% of the hospital income for this pathology is done through emergency department, so that, the perspective that can offer from the urgency is key. Another important aspect is about the emerging changes in the treatment of Heart Failure in the acute phase such as the application of new non-invasive ventilation and the use of new inotropics agents that can change the course of this disease and can be applied from the emergency department.

Objective: To assess the clinical profile and treatment of the patients with Acute Heart Failure (AHF) who are seen in the Emergency Department of the General Hospital of Albacete.

Method: It is a descriptive, cross-sectional and prospective study, including patients with Acute Heart Failure who were seen in the Emergency Department of the General Hospital of Albacete, from November 1st to December 31st, 2011. This study is integrated into the EAHFE-III project, that is a descriptive, cross-sectional, multicenter study of all patients with AHF who have been seen in that period in Spanish tertiary hospitals, belonging to the working group of Acute Heart Failure of the Spanish Society of Emergency Medicine (ICA-SEMES Group).

In this study, the information was recorded for all patients with a final diagnosis of AHF treated in the Emergency Department of the General Hospital of Albacete, according to Framingham diagnostic criteria. Patients were classified according to the guidelines of Acute Heart Failure of the European Society of Cardiology. Registered variables: a. Demographic; b. Symptoms and signs; c. Degree of cardiac involvement; d. Laboratory and other complementary tests performed; e. Treatment given in the emergency department.

Statistical Analysis: To describe the qualitative variables, absolute and relative frequency of each of the values of the variables were performed. For quantitative variables, we used the mean with standard deviation. For data collection and statistical analysis of the data we used SPSS 12.0 version.

Results: Patients included in the study were 259: 65.3% female (169) and 34.7% (90) males. The average age is 79.8 years. Ninety-three percent of patients with AHF (n = 243) had associated comorbidity: The 84.9% hypertension,

41.3% Diabetes, 49.8% dyslipidemia, 32.8% had Chronic Obstructive Pulmonary Disease, the 29% ischemic heart disease, 39.4% had Atrial Fibrillation, 10.4% arterial and 22% had valvular disease.

In the chronic treatment of patients: 76% were receiving treatment with diuretics, 29.8% were treated with beta-blockers, 41.1% took antiplatelet drugs, 33.7% were treated with oral anticoagulants; 29.8% were taking ACE inhibitors and 26.7% ARA II. Seventy-three percent of patients enrolled were normotensive at the moment of the income; cases of congestive heart failure and hypotensive shock associated with acute coronary syndrome in percentage was respectively 0.8% and 1, 6%. Dyspnea was observed in 93.03% (n = 241) patients, swelling in legs were found in 80.3%. Pleural effusion was found in 50.6% of patients. According to the NYHA severity scale, 116 patients (44.8%) were classified as level III, 40.9% as level IV and only 12.4% of Level II. The treatment performed was according to the comorbidities of the patients and 50% of them were administered oxygen from a noninvasive manner. Eighty percent received furosemide bolus and bronchodilator therapy and ipratropium bromide by 29.4% and 32.4% respectively. Oral anticoagulants, antibiotics and steroids did not exceed the 20% threshold. Mortality at 3 months was 12.7% (N = 32). Year mortality was 25.11%.

Conclusions: The Acute Heart Failure is a common condition in the Emergency Department of the General Hospital of Albacete, and is associated with advanced age and important comorbidity; and congestive symptoms predominate from mild to moderate intensity. The vast majority are handled in units attached to the Emergency Department. It is necessary to implement clinical guidelines and protocols and conduct joint adequate records to enable us to know the real situation of the patients with AHF to reduce mortality.

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Cardiovascular 1

HELICOPTER TRANSPORT OF PATIENTS WITH ACUTE CORONARY SYNDROMES IN THE NORTH-EAST ROMANIA

Diana Cimpoesu (1), Dana Cazacu (2), Simona Durchi (2), Paul Nedelea (2)

1. *Emergency Medicine, UMF "Gr.T.Popa", Iasi, Romania*

2. *Emergency Department, Clinical Emergency County Hospital "Sf.Spiridon", Iasi, Romania*

Corresponding author: dcimpoesu@yahoo.com

Keywords: aerial medical service, acute coronary syndromes, door-to-balloon time

Background: Starting April 2010, Romanian patients diagnosed with acute coronary syndromes can benefit from the ideal treatment through a national program for invasive treatment of myocardial infarction according to international guidelines. From this point of view we all

know that the door-to-balloon time is very important, this is why medical aerial Interventions increased in importance. Aims: Evaluate the importance of helicopter transport of patients with acute coronary syndrome in a region with a deficit of emergency specialists and only one Interventional Cardiology Centre.

Methods: Retrospective study of the interventions by helicopter for patients with acute coronary syndrome in the North-East Region of Romania between March 15 2011 and March 15 2013. North-East Romania has 30,949 km² and 3.84 million inhabitants. It was intervened with an MY 8 helicopter and a Eurocopter 135 helicopter, having mobile intensive care medical equipment, 2 pilots, 1 doctor and 1 nurse. The data collected were processed in SPSS Statistics 19.

Results: The study includes 71 adult patient cases that needed medical intervention and sequent transportation to hospital via helicopter. The decisions to send the helicopter were taken on medical criteria (diagnostic confirmation of an acute coronary syndrome – STEMI/non-STEMI), the big distances to the Interventional Cardiology Centre and the lack of a local emergency crew to transport the patient. The average distance to the intervention places, measured by land, was 162 km, the closest being at 34 km and the farthest at 250 km. The average time of transport of the patient by air was 39,3 ± 14,6 minutes compared to 108,7 ± 47,3 minutes estimated by land from the same locations (p>0,01) with an average time since the beginning of the chest pain of 6,32 ± 4,7 hours. 66,2% of the patients were males with ages between 25 to 85 years old. 92,96% of the patients were initially diagnosed with STEMI. Three patients suffered cardiopulmonary arrest during transportation, 2 were pronounced dead after receiving CPR. Regarding the medical specific treatment before PCI we note the administration of Aspirin/Clopidogrel in 69,01% cases and of Heparin in only 28,16% cases. The thrombolytic was administrated in 7,04% (5 patients) in prehospital setting among whom 2 deceased (p>0,01). 4,22% of the patients needed oro-tracheal intubation and mechanical ventilation due to a state of cardiogenic shock.

Discussion: The helicopter is a very important means of transportation for patients living in either far or inaccessible by land areas. The potential of reducing the door-to-balloon times in patients with acute coronary syndromes should make the helicopter the main way of transportation in this type of areas.

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Cardiovascular 1

IMPACT OF A NEW PROTOCOL ON NON-TRAUMATIC CHEST PAIN : COSTS, BENEFITS AND EFFECT ON ED OVERCROWDING

Cinzia Cancrini (1), Donatella Livoli (2), Alessandra Revello (3), Antonio Simone (3), Mohamed Salim (1), Cristina Magliocco (1), Francesco Rocco Pugliese Pugliese (4)

1. Emergency Department, Hospital Sandro Pertini, Rome, Italy

2. Pronto Soccorso, Ospedale Sandro Pertini, Roma, Italy

3. Pronto Soccorso, ospedale Sandro Pertini, Roma, Italy

4. Emergency department, Ospedale Sandro Pertini, Roma, Italy

Corresponding author: donalivoli@yahoo.it

Keywords: heart score, chest pain, ED overcrowding

Background A missed diagnosis of Acute Coronary Syndrome (ACS) may lead to further ischemic events and potentially preventable death or disability. Therefore, patient with symptoms suggestive of ACS often undergo a lengthy assessment in ED, yet up to 85% do not have a final diagnosis of ACS. Prolonged assessment contributes to high cost and ED overcrowding, which leads to adverse patient outcomes, including mortality. The need for accurate identification of a low-risk group that may be safely discharged without risk of an adverse event from ACS, is therefore a priority.

Objectives Cost-effectiveness assessment of a new fast diagnostic protocol (0-3 h) and application of Heart score for the management of chest pain in ED.

Method The study confronted the results of the first 3 months 2012 with the same period 2013 through a retrospective analysis outcome of all ED patients who presented for non-traumatic chest pain, excluded STEMI . From January 2013 highly sensitive troponin performed only as biomarkers at 0 -3 h, while in 2012 the protocol provided for 0-6-12h samplers. HEART score was calculated for all patient: low risk patients (score 0-3), with MACE risk 0.9% were early discharged; medium risk patients(scores 4-6 -MACE 12%) were included in a clinical- diagnostic track for suspected ACS awaiting final diagnosis(hsTn 0-3 h; ETT); High risk patients (score ≥ 7 points-MACE 65%) call for early aggressive treatments possibly including invasive strategies and provided the admission. The primary endpoint was major adverse cardiac event (MACE) within 30 days; were also assessed admission, ETT performed and average Long Of Stay (LOS) in the ED.

Result In the first 3 months of 2012 were assessed 153 patient, and the 12.4 % admitted for ACS; 15% with HEART score 3-4, was subjected to ETT in the ED (positive in 2 patient) and 19.4% discharged but sent to ETT outpatient, while those with Heart score > 4 (22.3%) were hospitalized. The patient with Heart score <3 (77.8%) were discharged directly. The average LOS in the ED was 18.4 h. In 2013, 329 patients were evaluated: 5% hospitalized for ACS. The 18.7% with Heart score 3-4 were subjected to ETT, of which 13.5% positive / doubts have required hospitalization, while 10% discharged and sent to the clinical follow shortly. The patient with Heart score <3 (77.8%) were discharged directly, while those with a score > 4 (22.9%) were hospitalized. Average LOS the ED was 8.2 h. No adverse events recorded.

Conclusion The combination of Heart score HsTn at 0-3 h are an effective tool in identifying patients at very low risk of major cardiac events that can be discharged directly from the ED, and that in patients with low/ moderate risk is need to perform ETT in the ED. Although there has been an increase testing ETT, the hospitalizations are the same and above mean time LOS decreased of 45%, contributing to the reduce ED crowding and the cost.

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Disease/Injury Prevention, and Wound Care

VIOLENCE AGAINST WOMEN: A LOCAL PROGRAM FOR IDENTIFICATION AND RECEPTION

Roberta Marino (1), Francesco Moschella (1), Roberta Petrino (1), Elizabeth Salvador (1)

1. Emergency department, S. Andrea Hospital, Vercelli, Italy

Corresponding author: ropetrino@gmail.com

Keywords: Violence against women, education and prevention, multidisciplinary protocol

The WHO acknowledges that violence against women (VAW) is a major violation of women's human rights and a public health problem affecting millions of women and girls. Women and children experience short and long-term physical, mental, sexual and reproductive health consequences of such violence.

In Europe VAW is one the first causes of death and disability for women between 16 and 44 years old.

In 2012 in Italy 124 women died because of VAW, bad we don't know accurate data regarding victims of violence and injuries.

According with with local and regional policy of socio-legislative frameworks, since 2012

we started to develop and implement a specific program to receive victims of VAW in our Emergency department. The first intervention was to enhance the attention and sensibility of Health care providers to support victims of violence so we organized specific courses to train doctors and nurses of the ED staff.

Afterwards, a specific protocol for victims of VAW was implemented, with a specific triage label, a questionnaire for the visit, and a kit ready to collect legal evidences and laboratory test. The protocol includes the involvement of police, social workers and psychologists.

In the first year of implementation of all the procedures (2012) we have seen and recognized 50 women victims of domestic violence, between 17 and 60 years old (mean 40 years), with different types of lesions (face 14 %, cranium 8%, nose 6 %, rib 8 %, arms 20%, hip 4%, psychiatric symptoms 12 %, multiple trauma 12 %, wounds 16%) and suspected sexual abuse in 4 cases (8%); the aggressor was the husband/partner in 48%, the former-husband/partner in 12 %, acquaintance (28%); son (10%); mother-in-law 2%. In 16 % of cases the prognosis was greater than 21 days, and this implies ex-officio low action.

Our experience show that education and awareness of Health providers about VAW improve the identification of the problem, and the use of local protocols for the reception of victims improve the detection of sings of violence in the Emergency department by nurses and doctors.

Emergency medicine has a critical role to play in prevention and provision of services as part of a multi-disciplinary response to VAW. Health care providers need

to be trained in providing services and referrals to support victims of violence.

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Disease/Injury Prevention, and Wound Care

LESSONS FROM A EUROPEAN EMERGENCY DEPARTMENT HIV SCREENING PROGRAMME. EXPERIENCE OF THE IMPLEMENTATION AND INITIAL OPERATIONAL PHASES OF THE MATER-BRONX RAPID HIV TESTING PROJECT (M-BRIHT).

Gerard O'connor (1), Ailbhe Ni Flaitheartaigh (2), Kathleen Coyle (2), Jane O'halloran (2), Eamon Brazil (1), Yvette Calderon (3), Patrick Mallon (2)

1. Department of Emergency Medicine, Mater Misericordiae University Hospital, Dublin, Ireland

2. HIV Molecular Research Group, School of Medicine and Medical Science, University College, Dublin, Dublin, Ireland

3. Department of Emergency Medicine, Jacobi Medical Centre, Bronx, New York, United States

Corresponding author: geroconnor@me.com

Keywords: HIV screening, Point of care test, Interactive video counselling

Introduction:

In recent years routine HIV screening has been adopted by many Emergency Departments and has been recommended by many public health authorities and academic organizations. The Mater Bronx Rapid HIV Testing (M-BRIHT) project is a large-scale ED based HIV screening programme. It utilizes innovative approaches in screening of attendees and also collects information on risk & behaviour from an unselected general ED population. The key aim of this project involves early diagnosis of HIV in an ED setting. Additionally we look to provide contemporary robust risk factor data for HIV acquisition.

Methods:

In the M-BRIHT project, unselected ED attendees are invited to undergo a rapid point-of-care HIV test (Orasure), with detailed information on risk factors gathered using a novel interactive video interface testing tool. De-identified data is collected in this regard and mapped to a secure database. We present the experience of the first 3000 participants.

Results:

Between 10th September 2012 and 12th April 2013, 3000 subjects were recruited, of whom 2311 agreed to undergo rapid HIV testing and provide more detailed risk factor information (acceptability of 77.0% [95% CI 75.49 - 78.5%]). Overall median age was 39 (IQR 29 - 55) years. 81.5% were of Irish nationality. The other main geographical continental areas were represented as follows: Other European 10.9%; Asian 2.8%; and African 2.6%. 91.9% of patients were of Caucasian origin.

Those agreeing to undergo a HIV test were of a lower median age (37y) than those who did not (48y). HIV transmission risk behaviours are presented in Table 1, with

high rates of multiple sexual partners within the year prior to enrollment (15.3%) and a high prevalence of unsafe sex in this grouping (only 15.5% of individuals using condoms during every sexual encounter). 7.4% of individuals admitted to previous injecting drug use. 2.4% of individuals admitted to exchanging sex for money or drugs in the past. Six individuals tested positive for HIV during this period, giving a crude prevalence rate of 2.60/1000.

Conclusion:

This large scale ED based screening programme has high acceptability among those attending the ED and has demonstrated significant on-going HIV transmission risk factors, in particular relating to injecting drug use, unsafe sex and exchange of money for sex. In addition it provides a window into other health characteristics in an unselected ED population.

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Disease/Injury Prevention, and Wound Care

UTILIZATION OF PREVENTIVE INSTRUCTIONS AGAINST BLOOD-BORNE DISEASES AMONG EMERGENCY RESIDENTS

Alireza Baratloo (1), Hamidreza Hatamabadi (1), Kiandokht Karimian (2), Soad Mahfoozpour (3), Alaleh Rouhipour (4)

1. Emergency department, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of

2. Emergency department, Arak University of Medical Sciences, Arak, Iran, Islamic Republic of

3. Health department, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of

4. Pediatric, Private, Karaj, Iran, Islamic Republic of

Corresponding author: alirezabaratloo@yahoo.com

Keywords: Preventive instructions, Emergency residents, Blood-borne diseases

Objectives: This study was aimed to assess the rate of preventive measures utilization (PMU) against blood-borne diseases (BBD) and its probable barriers among emergency residents.

Methods: In this descriptive cross-sectional study, 80 emergency residents of an educational public hospital were observed regarding the use of preventive measures from March to May 2010.

Results: Cleaning the bloody skin before phlebotomy or IV line Preparation and hand washing before wearing the latex glove achieve maximum (88/150) and minimum (0/150) score of performance. The most observed barriers of PMU were high patients' attendance (85%), high work load (80%), and need for high speed at work (68%).

Conclusions: It seems that, the preventive instructions are not optimally respected by ERs and it could be due to crowded wards, high work load and need for high speed in performing the duties.

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Disease/Injury Prevention, and Wound Care

WORK STRESS RELATED PROBLEMS IN EMERGENCY PHYSICIANS

Francis Somville (1), Francis Somville (2)

1. Dept. of Emergency and Traumatology, Erica AZ, Campus Geel & Mol, Geel, Belgium

2. Dept. Health Psychology University of Leiden, The Netherlands, University Leiden Netherlands, Leiden, Netherlands

Corresponding author: francissom@hotmail.com

Keywords: emergency physicians, burnout, workstress

Purpose of the study: This study provides a synthesis and analysis of available scientific literature to look at the degree of burnout among doctors in emergency, compared to other professions in the health sector, and to identify the specific work situation factors that have a role in this.

Method: For this study we systematically sought through NCBI Pubmed, ISI Web of Knowledge, Cochrane and Embase. Comparative primary studies, both longitudinal and cross-sectional, where burnout in case of emergency physicians was quantified, were included. Only studies published in the period from 01.01.1998 to 12.31.2008 in English, French or Dutch, were retained. By searching manually an additional supplement was accomplished. Search key synonyms sets were composed for "strain & stress", "emergency", "medical doctor" and "burn-out & PTSD". Eventually, 15 papers were retained for further investigation. Of each study the following points were assessed: the design, research methodology and the validity of the research instruments, before analyzing the results.

Results: In all studies burnout was quantified with the Maslach Burnout Inventory. The doctors in emergency care scored significantly worse for all dimensions of burnout in comparison to other professions groups in the health care sector. They had higher scores for emotional exhaustion and depersonalization. Significant positive correlations for burnout were found with chronic environmental factors such as workload, job control, social support from supervisors and team members and communication. As the main acute environmental factors critical incidents and aggression were withheld. With regard to these factors connections have been found with the development of Post-Traumatic Stress Disorder. Personal factors such as age, personality, past experiences and coping strategies also play a role in the development of burnout. Several authors have also showed some physiological abnormalities, in line with the occurrence of burnout with possible impact on the physical health of the physician in the emergency department.

Conclusion: Available scientific studies show that emergency physicians report high scores of emotional deprivation and depersonalization. Work characteristics contribute to this, but acute environmental factors such as radical incidents and aggression are also important determinants. Apart from this, personal characteristics such as age, personality, previous experiences and coping

strategies seem to be important. From this literature research we conclude that emergency physicians are one of the most vulnerable to work stress related problems in the healthcare sector.

Key words: Emergency Physicians, Burnout, Workstress

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Disease/Injury Prevention, and Wound Care

TACKLING KNIFE CRIME AND DOMESTIC VIOLENCE - A JOINT VENTURE BETWEEN THE EMERGENCY DEPARTMENT AND POLICE IN REDBRIDGE TO IDENTIFY PATTERNS OF ATTENDANCE OF DOMESTIC VIOLENCE VICTIMS.

Saleyha Ahsan (1), Derek Hicks (1), Jonathan Leung (1)
1. Emergency Department, Queens Hospital, Romford, United Kingdom

Corresponding author: saleyhaahsan@yahoo.co.uk

Keywords: Domestic violence, Police, Emergency department

Tackling Knife Crime and Domestic Violence - a joint venture between the emergency department and police in Redbridge to identify patterns of attendance of domestic violence victims.

Saleyha Ahsan
Jonathan Leung
Derek Hicks

ABSTRACT

Background

The Redbridge Tackling Knife Crime Programme was an initiative run between the Redbridge safer communities partnership team in conjunction with a London-based police force and Barking, Havering and Redbridge University Hospital Trust. It comprised of a data collection programme resulting in the analysis of types of assault, areas they are carried out, demographics of both assailant and victim and whether or not police were informed. Domestic violence (DV) was identified as a category of assault.

The inspiration came from the 1996 'Cardiff-model' - where the multi-agency Violence Prevention Group collected and shared ED assault data with its local police force. This led to the data becoming an integral part of a large scale, multi agency programme with the aim of tackling alcohol-related street crime in Cardiff. The outcome led to an enhanced effectiveness of the police in managing alcohol-related violence.

Aim

The aim is to identify DV locations and patterns, otherwise unknown to the police by improved intelligence gathered through data collected at the ED. As a result of such cooperation police deployment can reflect areas of need. It will also allow police to compare figures with their own assessments thus allowing a more informed service for DV victims.

Methods

The patient recording system, Symphony, was adjusted to accommodate data vital for intelligence gathering.

Parameters recorded included arrival in the ED date and time, assault date and time, location, were the police called, number of attackers, relationship to the victim, body part assaulted, object if any used, or body part and was this a repeat assault. If the assailant was either a family member, spouse or partner the assault is identified as DV.

Results

The key findings for the tackling knife crime data collection from the 10-month period of June 2011 to March 2012 are as follows. A total of 221 patients were identified as domestic violence out of the 2011 total figure of assault victims from TKAP. The ED data showed 66% were female and 24% were male, differing from police data which shows 83% as female. The majority of females were aged 18-44 years at 74%, with males aged 35-59 years at 58% and a further 29% between 1-25 years. For both male and female, 5% were under 16 years old.

Results identified 22% of the females were Asian - which is disproportionate to the Redbridge population. The BME population in Redbridge is 51.4% of the whole Redbridge population. For male patients 50% were white, 33% were Asian and 4% were black.

DV patients attending the ED between 1300 hours - 14.59 hours was 19% and 43% were between 2000 hours and 0159 hours.

DV assaults had multiple injury types. Victims were punched, pushed, stabbed and throttled. A sharp object was used in 7% of DV assaults. In 26% of the cases police were not called. It was found that 28% of the DV patients had been assaulted more than once in the previous 12 months. Out of these 19% had been assaulted twice before and female patients accounted for 86% of all the patients that had been assaulted repeatedly.

Conclusions

The data identified that a significant number of female assault patients who were DV victims were repeat victims and had not called the police.

In the overall figures it was acknowledged that some DV victims treated in the ED were not involved in the data collection. This is attributed to the common pattern of the victim refusing to implicate the assailant in DV. However those that did participate were those who had the most significant injuries - a suggestion that they were subject to an extended cycle of abuse and may be coming to a decision to seek an end to the assaults - thus reaching out for help.

This will now be used to implement police enforcement activities and prevention work, hence improving safe-guarding.

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Disease/Injury Prevention, and Wound Care

TACKLING KNIFE CRIME - A JOINT VENTURE BETWEEN THE EMERGENCY DEPARTMENT AND POLICE IN REDBRIDGE, UK TO IDENTIFY FUTURE MAN-POWER DEPLOYMENTS TO REDUCE KNIFE CRIME ATTACKS.

Saleyha Ahsan (1), Derek Hicks (1), Jonathan Leung (1)

1. Emergency Department, Queens Hospital, Romford, United Kingdom

Corresponding author: saleyhaahsan@yahoo.co.uk

Keywords: Reducing Knife Crime, Police, Emergency department

ABSTRACT

Background

The Redbridge Tackling Knife Crime Programme was an initiative run between the Redbridge safer communities partnership team in conjunction with a London-based police force and Barking, Havering and Redbridge University Hospital Trust. It comprised of a data collection programme resulting in the analysis of types of assault, areas they are carried out, demographics of both assailant and victim and whether or not police were informed.

The inspiration came from the 1996 'Cardiff-model' – where the multi-agency Violence Prevention Group collected and shared ED assault data with its local police force. This led to the data becoming an integral part of a large scale, multi agency programme with the aim of tackling alcohol-related street crime in Cardiff. The outcome led to an enhanced effectiveness of the police to manage alcohol-related violence.

Aim

The aim is to identify violent crime locations and patterns, otherwise unknown to the police or unreported, by improved intelligence gathered through data collected at the ED. The presentation looks at the street violence category of TKAP. As a result of such cooperation police deployment can reflect areas of need both geographically and time of day in an effort to reduce violent attacks.

Methods

The patient recording system, Symphony, was adjusted to accommodate extra data vital for intelligence gathering, which included specifics of an assault. Parameters recorded included arrival in the ED date and time, assault date and time, location, were the police called, number of attackers, relationship to the victim, body part assaulted, object if any used, or body part and was this a repeat assault. Non-domestic descriptions of attack refer to those not identified as domestic assaults between partners.

Results

The key findings from the tackling knife crime data collection from the 10-month period of June 2011 to March 2012 are as follows. A total of 2011 assaults were recorded, giving an average of 6.6 assaults a day. Weekends saw the largest incidence of non-domestic assaults at 52% with 51% of them happening between 18 hours to 02.59 hours. Hence in Redbridge, a strong link to the night-time economy was identified with 12% with the assaults attributed specifically to a pub or club and in 50% of these police were not called. Male victims were predominant at 74%. Out of these, 38% had not called the police and out of these 31% were serious enough to require management in majors. Repeat assaults in the last 12 months were identified in 10% of those who had not reported to the police. In terms of overall ED management, 48% of all the assault patients were treated in majors and 7% of all incidents involved a sharp or bladed instrument.

Conclusions

The data indicated that there is a significant pattern of male assault patients between the ages of 10-25 years not reporting to the police. The analysis was shared with local police and will enable increased monitoring of licensed premises where a recurrence of assaults had been recorded. This will now be used to implement police enforcement activities and prevention work, hence improving safe-guarding. This ultimately will help reduce the workload on the ED using an integrated holistic, prevention method arrived at through a joint police and ED initiative.

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Disease/Injury Prevention, and Wound Care

EVALUATION OF FACTORS INFLUENCING KNOWLEDGE AND ATTITUDES OF MOTHERS WITH PRE-SCHOOL CHILDREN REGARDING THEIR ADOPTION OF PREVENTIVE MEASURES FOR HOME INJURIES REFERRED TO ACADEMIC EMERGENCY CENTERS TEHRAN-IRAN

Hamid Reza Hatamabadi (1), Soad Mahfoozpour (2), Somaieh Younesian (3)

1. Emergency department, Safety promotion and injury prevention center, Tehran, Iran, Islamic Republic of
2. Shahid beheshti university of medical sciences, Safety promotion and injury prevention center, Tehran, Iran, Islamic Republic of
3. Emergency department, Shahid beheshti university of medical sciences, Tehran, Iran, Islamic Republic of

Corresponding author: hhatamabadi@yahoo.com

Keywords: knowledge, attitude, pre-school children

Introduction: Excessive dependence of pre-school children on their parents and a high susceptibility of these children have led to a significant increase in home injuries incidence for this group. Therefore, the present study aimed to evaluate factors influencing the knowledge and attitudes of mothers with pre-school children regarding their adoption of preventive measures for home injuries.

Methods: The subjects in this descriptive/analytical study consisted of all the mothers of pre-school children with home injuries, who had referred to the emergency wards of Imam Hussein Hospital and Haftom Tir Hospital in Tehran, Iran. Mothers' data were collected using a valid and reliable questionnaire. After knowledge levels and attitudes of mothers were divided into two groups, multivariate logistic regression analysis and chi-squared test were used to evaluate the relationship between the facts under study and knowledge and attitudes of the mothers.

Results: Finally, 230 mothers, with a mean age of 29.4±5.2 years, were evaluated, 75.0% of whom had proper knowledge and 46.2% had positive attitudes. High level of education (OR=0.08), having at least 3 children (OR=0.2) or two pre-school children (OR=0.06), absence of mother from home for at least 8 hours daily (OR=0.015) and a history of home injury during the previous three weeks (OR=0.02) were associated with poor knowledge of mothers.

However, there was a higher prevalence of proper knowledge in mothers with positive attitudes (OR=9.2). In addition, high school education and higher levels (OR=0.006), mothers' employment (OR=0.015) and mothers' absence from home for at least 8 hours daily (OR=0.17) were factors predicting poor attitudes of mothers. On the other hand, there was a close correlation between mothers' knowledge and attitudes (OR=12.5).

Conclusion: The results of this study showed that mothers' high educational status, absence, occupation, and the number of children in the family and history of accidents during the previous three weeks are important predicting factors in relation to the knowledge and attitudes of mothers about adoption of preventive measures.

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Disease/Injury Prevention, and Wound Care

ACCESS TO BURN CENTERS IN METROPOLITAN FRANCE

Benjamin Dahan (1), Jean-françois Cornu (2), Christophe Vinsonneau (3), Hocine Foudi (4), Lahcène Foudi (4), Stéphane Rican (5), Gérard Salem (5), Karim Tazarourte (4)

1. Département des Urgences/SMUR, CHU Cochin-Hôtel-Dieu, Assistance publique-hôpitaux de Paris, Université Paris Descartes, INSERM U970, Paris, France

2. UMR BOREA, Département Milieux et Peuplements Aquatiques, MNHN, CNRS 7208, IRD 207, UPMC, Muséum National d'Histoire Naturelle, Paris, France

3. Service de Réanimation, Hôpital Marc Jacquet, Melun, France

4. Service d'aide médicale urgente (SAMU) 77, Pôle Urgence, Hôpital Marc Jacquet, Melun, France

5. Laboratoire Espace Santé Territoire, Université Paris X-Nanterre, Nanterre, France

Corresponding author: bdahan@hotmail.com

Keywords: Access, Burn Centers, Health Geography

Background: In France 500 000 burn injuries occur every year, causing 10 000 hospitalization and 1 000 burn-related deaths. More severely burned patient should benefit from a specific management by experienced personnel. Optimal burn care to these patients is a resource intensive endeavor in term of equipment and personnel. These resources are available at dedicated burn centers. There are in France 16 burn centers for almost 120 beds in total. The optimal geographic distribution of these centers on the territory was never debated. The aim of this study is to determine if equity exists in French population to access burn centers.

Method: We defined access as the time to reach a burn center by ambulance from the place of the accident. Burn centers and population data were entered into a geographic information system (GIS). We used driving speed estimation by ambulance drivers to estimate driving time from each municipality to the closest burn center.

Results: In 2012, there were 16 burn centers in France, which represents almost 120 dedicated beds. Overall, the number of burn care beds was 0.20 beds per 100 000

French population. The number of beds varied by inter-region from 0.31 per 100 000 people in Ile-de-France to 0.04 per 100 000 people in North-West. In France, by day time, 58% of the population lives within one hour of a burn center and 91% lives within two hours. Geographic access to burn centers varies greatly across region in France. Population coverage is the highest around Paris, in the North and in the South-East and the lowest in the Center and in the West. In some part of the territory ground transport route to the closest burn center can take more than 4 hours.

Conclusion: This study shows significant inequalities in access to burn centers on French territory. A part of the population is at risk of not receiving appropriate cares. In the future, resource allocation in burn care and distribution of burn centers should be guide by geographic access studies and epidemiologic data from a national burned patient registry.

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Disease/Injury Prevention, and Wound Care

PROPHYLACTIC ANTIBIOTIC THERAPY FOR CONTAMINATED SIMPLE TRAUMATIC WOUNDS: THREE DAYS ORAL AZITHROMYCIN VERSUS FIVE DAYS ORAL CEPHALEXIN TREATMENT

Niloofer Abazarian (1), Abbas Edalatkhah (1), Hamed-basir Ghafouri (1), Tayeb Ramim (2), Farhad Shokraneh (3)

1. Emergency Medicine, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of

2. Sina Trauma and Surgery Research Center, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of

3. Research Deputy, Kerman University of Medical Sciences, Kerman, Iran, Islamic Republic of

Corresponding author: h-basirghafouri@tums.ac.ir

Keywords: Azithromycin, Cephalexin, Simple Traumatic Wounds

Introduction: There is a question that whether an easy-to-use (single dose daily) antibiotic such as azithromycin which covers the same microorganisms and have lower prices than cephalexin could be a suitable alternative for use in wound infection prophylaxis in the emergency room.

Methods: A singled-blind controlled clinical trial was conducted including patients over 16-year-old referred to Sina Hospital for traumatic wound repair. Patients were divided randomly into two groups using table of random numbers. The first group was treated by oral azithromycin for three days (500mg prior to manipulation, and then 250mg daily) and the second group was treated by oral cephalexin for 5-days (1000mg before manipulation and 2000mg daily, divided to 4 doses every 6 hours). The patients were followed two and seven days after wound repair for wound infection. All participants signed the informed consent form prior to the study.

Results: three hundred sixty six patients were enrolled in this study. Twenty seven and 36 patients in cephalexin and

azithromycin groups were excluded respectively, due to lack of follow-up visit. Mean age of patients were 32.79 ± 15.59 years and 84.5% of them were male. Most injuries were in head and neck. There was no statistically significant differences between two groups in sex, age, location of wounds, wounds form, length and depth of the wound and repair time. Fifty patients in the cephalexin group and eight patients in the azithromycin group were infected that was not statistically significant (p=0.17).

Conclusions: Findings from the study shows that the use of azithromycin as prophylaxis in contaminated and simple wounds have a similar effect with cephalexin but a shorter duration of treatment and the treatment cost is more economical.

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Cardiovascular 2

ACUTE CORONARY SYNDROME WITH ST-SEGMENT ELEVATION (STEMI): "LIVES SAVED" BEFORE HOSPITAL

Frédéric Lapostolle (1), Xavier Mouranche (2), Lionel Lamhaut (3), François Xavier Laborne (4), Thévy Boche (5), Hugues Lefort (6), Sophie Bataille (2), Yves Lambert (7)

1. SAMU 93 - UF Recherche-Enseignement-Qualité, AP-HP, Hôpital Avicenne, Bobigny, Université Paris 13, Sorbonne Paris Cité, EA 3509, France

2. Ile de France Health Regional Agency (ARSIF), Paris, France

3. AP-HP - Necker Hospital, EMS Department, SAMU 75, Paris, France

4. Sud Francilien Hospital, SAMU 91, Corbeil-Essonnes, France

5. AP-HP - Mondor Hospital, SAMU 94, Creteil, France

6. Brigade des Sapeurs Pompiers de Paris (BSPP), Emergency Department, Paris, France

7. Versailles Hospital, SAMU 78, Versailles, France

Corresponding author: frederic.lapostolle@avc.aphp.fr

Keywords: STEMI, Cardiac Arrest, Pre-hospital

Introduction

STEMI may be complicated by cardiac arrest (CA) often by ventricular fibrillation. The risk of AC justified the creation of the Cardiologic Intensive Care Units few decades ago. The impact of the French pre-hospital medical management of patients suffering from STEMI on AC outcome remains unknown.

Objective

To study outcome of victims of AC among patients managed by a physician in pre-hospital setting (by SAMU Mobile Intensive Care Unit) for STEMI.

Methods

Data are obtained from the prospective registry that lists all STEMI managed by eight SAMU of Paris area (11 millions inhabitants). Patients requiring cardiopulmonary resuscitation were specifically studied. Primary endpoint, "lives saved", was defined as prehospital and hospital survival. Quantitative variables were studied on average

(confidence interval) and qualitative variables were studied in percent (confidence interval).

Results

From 2002 to 2011, 16.346 STEMI managed by French SAMU emergency physician in prehospital settings were included in the registry. 959 (6%) AC complicating STEMI were reported. 760 (79%) occurred in men. The overall average age was 59 years (58-60). Survival to hospital arrival was 90% (88-92). Discharge survival rate was 63% (60-66). The evolution of survival regarding time is reported in the Figure.

Conclusion

Over 90% of patients treated in a pre-hospital for AC complicating STEMI arrived alive at the hospital. Final outcome was high. These results justify, by themselves, an intensive pre-hospital management of patients with suspected ACS.

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Cardiovascular 2

DOOR TO KNIFE TIME; THE TIMELINE OF PATIENTS PRESENTING WITH ACUTE TYPE A AORTIC DISSECTION

Jane Maraka (1), Priya Sastry (1), Narain Moorjani (1)

1. Surgery, Papworth Hospital, Cambridge, United Kingdom

Corresponding author: janemaraka@gmail.com

Keywords: Aortic dissection, Acute coronary syndrome, Surgery

Background

Acute aortic dissection (AAD) is a life-threatening emergency with a high mortality and morbidity rate (1-2% mortality per hour for the first 24 hours). Rapid accurate diagnosis and treatment are imperative to optimise clinical outcomes for AAD (and Acute Coronary Syndrome, ACS) patients.

Objective

This study was designed to assess the time-course of events that occur between presentation to medical services and surgical intervention ('door to knife' time), with a view to identifying modifiable delays.

Methods

A single centre retrospective case note review of patients who underwent emergency repair of an acute type A aortic dissection between 2006 and 2011 was performed. Records from ambulance services, referring hospitals and cardiac surgery specialist hospital were reviewed in order to construct timelines for each patient. There were a total of 8 time points recorded; from the time of presentation to the accident and emergency department, when they were first seen by a clinician, through the diagnosis pathway including time of CT scan, times involved in ambulance transfer and then time arrived at cardiac specialist centre, anaesthetic time and knife to skin time.

Results

50 patients were identified from the electronic theatre records. These comprised referrals from 14 different

hospitals. The mean age was 62 with a male : female ratio of 31:19. The mean time (\pm SEM) between arrival in the referring hospital and commencement of the operation was 15 hours 59 minutes (\pm 17 hours 15 minutes).

The longest delay (8 hours 45 minutes \pm 14 hours 37 minutes) occurred following review by the doctor at the referring hospital and obtaining a CT scan. 31/50 (62%) of patients in our sample presented with chest pain and 11/50 (22%) were diagnosed and treated for ACS. 7/50 (14%) of patients had a dissection flap evident on echocardiography prior to CT scanning.

A further delay of 6 hours (\pm 13 hours 35 minutes) was encountered between the patient arriving at the specialist hospital and commencement of surgery.

Discussion

The longest delay remains in diagnosis. Our data corroborates previous studies demonstrating that the overlap in clinical presentation of AAD and ACS leads to a high incidence of misdiagnosis (39% in some studies) and therefore inappropriate management with antithrombotic agents, leading to higher rates of major bleeding and a trend toward greater in-hospital mortality.

The UK (NICE) guidelines for management of acute chest pain encourage ACS to be the default diagnosis to optimise 'door-to-balloon times'. Thus AAD is only considered once 12-hour troponin and ECG changes are negative. This automatically incurs diagnostic delay for AAD patients and of course myocardial infarction does not preclude aortic dissection if the coronary ostia have been dissected also.

The equivalent American guidelines, however, focus on three key points; significant risk factors, high risk chest pain history, and high risk examination findings (e.g. new aortic regurgitation), and advocates expedited echo and/ or CT if any of these are present.

It is probable that incorporating this idea into UK practice may address the diagnostic delay and optimise outcomes for AAD patients. Education for junior emergency medicine staff may also help to lower the threshold of suspicion for acute aortic pathology in patients presenting with chest pain.

Conclusion

Our study identified delays in the management of patients with AAD and these must be optimised to improve patient outcomes. The prominent reversible delays are in diagnosis and commencing the operation once the patient has arrived.

The authors propose that AAD should be considered earlier within existing chest pain protocols. Transthoracic echo (\pm CT scan) prior to ACS treatment may help to improve accuracy of diagnosis, thus optimising outcomes for AAD and ACS patients.

Greater efficiency is also required in preparing patients for theatre after arrival at the cardiac surgical centre and these must be sensitive to the services and resources of the centre.

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Cardiovascular 2

THE ADJUNCTIVE THERAPY CAN INCREASE THE EFFICACY OF STREPTOKINASE IN ST ELEVATION MYOCARDIAL INFARCTION?

Khadija Zaouche (1), Sami Souissi (1), Hanène Ghazali (1), Asma Chargui (1), Naila Mghaieth (1), Olfa Mathlouthi (1), Sawssen Chiboub (1), Moez Mougaida (1), Anwar Yahmadi (1)

Emergency department, Regional Hospital, Ben Arous, Tunisia

Corresponding author: samisouissi@yahoo.fr

Keywords: STEMI, fibrinolysis with streptokinase, efficacy and bleeding events

Introduction: Streptokinase is frequently used in developing countries as fibrinolytic treatment for acute ST-segment elevation myocardial infarction (STEMI) because of its cost-effectiveness (1/12 times less expensive than other fibrinolytic-based regimens). The most studies evaluating the efficacy of streptokinase in STEMI were conducted before the advent of the adjunctive antiplatelets and anticoagulant therapy.

The purpose of this study is to evaluate clinical efficacy of streptokinase combined to adjunctive therapy in patient with STEMI.

Methods: Comparative study of two prospective series included patients admitted for STEMI presented within 12 hours after symptom onset and treated with streptokinase. Group 1: 46 patients were enrolled in 2008 and received streptokinase plus aspirin plus bolus of unfractionated heparin. Group 2: 225 patient were enrolled from 2009 to 2012, received streptokinase plus adjunctive therapy (dual antiplatelets: aspirin plus clopidogrel and anticoagulant: low weight molecular heparin). The primary end point was the success of fibrinolysis which is complete resolution of pain as well as resolution of more than 50% of the ST segment elevation in infarction leading at 90 minutes. The secondary end point was the rate of major or minor bleeding events.

Results: The two groups were comparable regard to demographic, clinical parameters and delay from onset of chest pain - emergency admission (respectively 217 min in group 1 vs 240 min in group 2).

Primary end point occurred in 143 of 225 patients (64%) in the group who received streptokinase, and adjunctive therapy versus 20 of 46 patients in the group received streptokinase and aspirin (43%); $p < 0.001$. However, there was no statistically significant difference between the two groups neither in the frequency of major adverse bleeding events nor in minor bleeding events respectively 2 and 26 in the group 2 (adjunctive therapy) vs 0 and 2 in the group 1; $p = 0.78$.

Conclusion: Streptokinase combined to adjunctive therapy is an attractive fibrinolytic treatment in patients with STEMI because of its clinical efficacy in myocardial reperfusion, low bleeding risk and its cost - effectiveness.

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Cardiovascular 2

H-FABP AS AN EXCELLENT BIOCHEMICAL CARDIAC MARKER FOR DIAGNOSING ACUTE NON ST ELEVATION MYOCARDIAL INFARCTION (NSTEMI) IN FIRST 4 HOURS OF PRESENTATION TO AN EMERGENCY DEPARTMENT.

Srihari Cattamanchi (1), Karthikeyan Sundaramurthy (2), Ramakrishnan Venkatakrishnan Trichur (2)

1. Harvard Affiliated Fellowship in Disaster Medicine / Emergency Management, Harvard Medical School, Boston, United States
2. Dept. of Accident & Emergency Medicine, Sri Ramachandra Medical College Research Institute, Chennai, India

Corresponding author: c.srihari@gmail.com

Keywords: H-FABP, NSTEMI, Biochemical Cardiac Marker

Aim

To evaluate the diagnostic value of early H-FABP detection compared to other selected markers of myocardial necrosis such as Troponin I, Troponin T level. H-FABP was measured using the qualitative test CardioDetect med in Acute MI.

Methods

A prospective, diagnostic, analytical study done in the Accident & Emergency Department at Sri Ramachandra Medical College & Research Institute, Porur, Chennai, from September 2009 to February 2010. Consecutive sampling technique employed. A preformatted proforma was used as an instrument in the study. All patients irrespective of age & sex registered in the ED with complaints of chest pain less than 4 hrs duration. An EKG taken and if NSTEMI is present the patient is included in the study. Written informed consent was obtained and blood samples taken for Troponin T, Troponin I and H-FABPs as early as possible and sent for analysis. The patient's demographic data, presenting complaints past history, EKG changes and vitals are recorded. The values of Troponin T, Troponin I and H-FABPs are analyzed. Statistical analysis was done using SPSS software ver. 15.0.

Results

A total of 55 chest pain patients with equivocal ECG findings were enrolled in study. There were 39 males and 16 females with mean age of 59.65 years. H-FABP had sensitivity of 83.63% and specificity of 98.18% compared with 62.21% and 98.46% for cTnT and 67.96% and 98.14% for cTnI in initial 4 hours after onset of chest pain. Altogether, 46 patients had acute myocardial infarction as confirmed by positive troponin levels (gold standard test).

Conclusion

Qualitative H-FABP test (CardioDetect med) showed excellent sensitivity, higher than measurements of cTnI and cTnT in first 4 hours of hospital admission, and high specificity in patient group with NSTEMI ACS. H-FABP is excellent biochemical cardiac marker for diagnosing NSTEMI, especially in its early phase, allowing exclusion of myocardial necrosis.

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Cardiovascular 2

CHEST PAIN AND NORMAL ELECTROCARDIOGRAM IN EMERGENCY DEPARTMENT: FACTORS ASSOCIATED WITH ACUTE CORONARY SYNDROME

Jihen Essid, Hanen Ghazali, Sami Souissi, Rebeh Daoudi, Saida Zelfani, Anware Yahmadi, Noura Laamouri, Mahbouba Chkir

Service d'Accueil des Urgences, Hôpital Ben Arous, Tunis, Tunisia

Corresponding author: hanene.ghazali@yahoo.fr

Keywords: acute coronary syndrome, chest pain, electrocardiogram

Background: Lack of changes on an electrocardiogram (ECG) performed in patients presenting with chest pain is often thought to reflect less likelihood of acute coronary syndrome (ACS). Pope et al (1), found that a normal ECG was a factor independently associated with missed ACS in the emergency department (ED) (4%). An early identification of these patients in ED was important to limit medicolegal consequences.

Objective: The study objective was to investigate the clinical characteristics and the factors associated with ACS in patients who presented to our ED with the chief complaint of chest pain and whose initial ED ECG was interpreted as normal.

Methods: This was a prospective study of ED patients with chest pain, had normal ECGs, and was admitted for evaluation for ACS over 2 years period.

Our study group comprised all patients who met the following criteria: 1) age \geq 18 years, 2) chief complaint of nontraumatic chest pain suspicious for ACS, 3) normal ECG, and 4) admission for evaluation for ACS.

Normal ECG criteria were as follow: 1) normal sinus rhythm with heart rate of 55–105 beats / min, 2) normal QRS interval and ST segment, and 3) normal T-wave morphology or T-wave flattening.

Patients' initial ED ECGs were interpreted as normal or abnormal by two emergency physicians (EPs); differences in interpretation were resolved by a cardiologist.

The diagnosis of ACS was focused on coronary angiography demonstrating $>70\%$ stenosis in a major coronary artery.

All the study subjects were divided into ACS and non ACS groups.

Results: Fifty (50) patients were included. The mean age was 58 +/- 11 years old, and males comprised 32 patients (64%). There were 19 patients (38 %) in the ACS group and 31 patients (62%) in the non ACS group.

There were difference between the two groups ACS vs non ACS in: age (64+/-10 years vs 54+/-9 years, $p=0,001$); comorbidities: diabetes (53% vs 19% ,OR= 4.6, $p=0,014$), known coronary artery disease (CAD) (47% vs 19%, OR = 3.75 , $p= 0,03$); history of percutaneous coronary intervention (PCI) (37% vs 6%, OR= 8.45, $p=0,018$) and positive troponine (37% vs 6% ,OR=8.45, $p=0,018$).

Conclusions: Advanced age, history of diabetes or known CAD and history of PCI are the main factors associated with ACS in patient presented with chest pain and had normal

ECG. Early identification of these factors by physicians in the ED is critical for adequate management and treatment.
1. Pope JH, Aufderheide TP, Ruthazer R, et al. Missed diagnoses of acute cardiac ischemic in the emergency department. *N Engl J Med.* 2000; 342:1163–70.

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Cardiovascular 2

ECG IN EMERGENCY MEDICINE. THE ELECTRODES ON THE BREAST OR UNDER THE BREAST ?

Pranesh Mahadevan (1), Tomislav Petrovic (1), Hayatte Akodad (1), Paul-georges Reuter (1), Nicolas Javaud (1), Frédéric Adnet (2), Frédéric Lapostolle (3)
1. Université Paris 13, Sorbonne Paris Cité, EA 3509 Hôpital Avicenne, 125, rue de Stalingrad, 93009, Bobigny, France, SAMU 93 - UF Recherche-Enseignement-Qualité, Bobigny, France
2. SAMU 93 - UF Recherche-Enseignement-Qualité, Université Paris 13, Sorbonne Paris Cité, EA 3509 Hôpital Avicenne, 125, rue de Stalingrad, 93009, Bobigny, France, Bobigny, France
3. 5) AP-HP, Urgences - SAMU 93, Hôpital Avicenne, F-93000 Bobigny, France, Université Paris 13, Sorbonne Paris Cité, EA 3509, SAMU 93 - UF Recherche-Enseignement-Qualité, Bobigny, France

Corresponding author: frederic.lapostolle@avc.aphp.fr

Keywords: ECG, Electrodes, Quality

Introduction

This is a daily issue. Yet, it is not resolved. Should electrodes be positioned on the breast, with the risk of getting amortized signal or under the breast, with the risk of alteration of anatomical landmarks?

Methods

Prospective, single-center study. Ethic committee agreement.

Inclusion: patient with indication to perform an ECG and a chest X-ray.

Parameters collected: BMI, chest and breast sizes, ECG quality (artifacts and baseline stability) according to previously validated scale [Lapostolle, *Ann Emerg Med*, 2010]

Analysis: P, QRS and T deflections amplitude and electrodes position on chest X-ray.

End-point: ECG quality and changes in deflections amplitude.

Results

19 pairs of ECG were analyzed. There was no difference in quality between the two groups.

P waves in V3, S waves in V5 and V3 and T waves in V3 to V6 were significantly larger on than under the breast. The median difference was respectively: 0,5 mm for P waves, 1,5 mm for S waves and 1,5 for S waves.

The correlation (R2) between deflections size and BMI, chest and breast size was always less than 0.2. The median distance between the electrodes located on and under the breast was 8 cm and 11 cm on the radio. This difference was not correlated with the deflections amplitude (R2 = 0.4).

Conclusion

Impact of electrodes position on ECG had only minor. Physician can then freely choose according to situations.

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Cardiovascular 2

CARDIAC RISK STRATIFICATION AND UTILIZATION OF RESOURCES BY EMERGENCY PHYSICIANS AT A UNIVERSITY TEACHING HOSPITAL

Benjamin Lee (1), Lisa Moreno-walton (1), Nicholas Otts (2)

1. *Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, United States*

2. *Medical Student, Louisiana State University Health Sciences Center, New Orleans, United States*

Corresponding author: DoctorMoreno@gmail.com

Keywords: Cardiac risk, Resource utilization, Risk stratification

Background: Efficient use of medical resources is a significant national concern. ED disposition of patients with chest pain presents a challenge of balancing adequate cardiac care against unnecessary admissions. With efficient resource utilization, the percentage of positive stress tests should be higher in patients that are admitted than in patients that were placed on ED observation.

Objective: Primary: To evaluate the efficiency of resource utilization for chest pain patients by determining the percentage of positive stress test results in the admitted group vs. the ED observation group. Secondary: To calculate the impact of co-morbidities on the likelihood of positive stress test results.

METHODS: Charts of all patients admitted from ED for inpatient cardiac workup (Group 1) or placed in ED observation status for stress testing prior to discharge (Group 2) during the 1 year study period were retrospectively reviewed. Demographic data and co-morbidities were recorded. ED Observation units were not available on Friday nights and Saturdays. Patients admitted on those days were excluded. Aggregate data was analyzed for characterization of the cohorts, with percent of positive stress tests as the primary outcome measure. Cardiologist referral to direct catheterization was considered a surrogate marker for a positive stress test. Non-parametric data was analyzed using logistic regression to calculate the relationship between specific demographic characteristics, co-morbidities, or distinct ECG characteristics on dichotomous stress test outcome.

RESULTS: 98.04% of the positive stress tests came from Group 1, but 63.17% of Group 1 patients had a negative stress test. 97.84% of Group 2 patients had negative stress tests. Patients with hyperlipidemia were 1.61x more likely to have a positive stress test (CI -1.1593, 2.2228; patients with heart disease, 1.92x more likely (CI- 1.3264, 2.7738); with coronary artery disease, 3.28x more likely (CI- 2.3363, 4.5998). Among those who had a positive stress test, 77.29% had hypertension, 43.13% hyperlipidemia, and 31.87% diabetes.

Limitations: Study was done at one site.

Conclusions: Although 98.04% of positive stress tests were from Group 1, a significant number of patients in that group had negative results and could have been placed in ED observation. Known risk factors for positive results were validated in our cohort and can be helpful in stratifying patients to inpatient vs. ED observation status.

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Cardiovascular 2

CAN EMERGENCY PHYSICIANS 'RULE IN' OR 'RULE OUT' ACUTE MYOCARDIAL INFARCTION WITH CLINICAL JUDGEMENT?

Body Richard (1), Gillian Burrows (2), Gary Cook (3), Philip S Lewis (4)

1. Emergency Department, Central Manchester University Hospitals NHS Foundation Trust, Manchester, United Kingdom

2. Department of Laboratory Medicine, Stockport NHS Foundation Trust, Manchester, United Kingdom

3. Department of Public Health, Stockport NHS Foundation Trust, Manchester, United Kingdom

4. Cardiology Department, Stockport NHS Foundation Trust, Manchester, United Kingdom

Corresponding author: richard.body@manchester.ac.uk

Keywords: Sensitivity and specificity, Acute myocardial infarction, Clinical judgement

Background

Suspected cardiac chest pain accounts for over a quarter of acute medical admissions although less than a quarter of these patients are diagnosed with an acute coronary syndrome (ACS). Atypical symptoms are common, which makes diagnosis challenging. Once the diagnosis of ACS is suspected, current diagnostic strategies rely heavily on biomarkers, ECGs and other investigations rather than clinical judgement or 'gestalt'.

Objective

To evaluate whether the 'gestalt' of emergency physicians, in combination with investigations available at the time of presentation, can 'rule in' and/or 'rule out' acute myocardial infarction (AMI).

Methods

This is a secondary analysis from a prospective diagnostic cohort study at Stepping Hill Hospital, Stockport, United Kingdom. We included adult patients presenting to the ED with suspected cardiac chest pain. Clinicians recorded their estimated probability of ACS ('gestalt') at the time of presentation (and therefore blinded to outcome) using a 5-point Likert scale. The primary outcome was AMI, adjudicated by two independent investigators who were blinded to clinician gestalt. Patients underwent troponin T testing at presentation and ≥ 12 hours after peak symptoms as a reference standard. Secondary outcomes included major adverse cardiac events (MACE; death, AMI or revascularisation) within 30 days.

Results

477 patients were included, 456 of whom had complete data and were included in this analysis. 81 (17.7%) patients had AMI. The area under the ROC curve for gestalt was 0.76 (95% CI 0.70-0.82). Among the 53 cases felt to have 'definite ACS' by the treating clinician, 27 (50.9%) had AMI and 28 (52.8%) developed MACE. Among 11 cases felt to be 'definitely not ACS', 0 had AMI and 1 (9.1%) developed MACE within 30 days. In 112 cases where the clinician deemed that the diagnosis was 'probably not' ACS, 4 (3.6%) had AMI and 6 (5.4%) developed MACE.

If clinicians had decided not to investigate patients who had a normal admission ECG and troponin level when they felt the diagnosis was 'probably not' or 'definitely not' ACS, they would have achieved: sensitivity 100.0% (95% CI 95.6-100.0%); specificity 28.0% (23.5-32.8%), positive predictive value 23.1% (18.8-27.8%) and negative predictive value 100.0% (95% CI 96.6-100.0%).

Conclusions

Gestalt alone cannot be used to 'rule in' or 'rule out' ACS. By combining clinician gestalt with the admission ECG and troponin level, we found 100.0% sensitivity without the need for serial troponin testing. These findings have the potential to reduce unnecessary hospital admissions for suspected ACS but should be prospectively validated before considering clinical implementation.

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Cardiovascular 2

ECG QUALITY IN EMERGENCY MEDICINE. SUBJECTIVE AND OBJECTIVE ANALYSIS

Frédéric Lapostolle (1), Dorian Lapostolle (1), Kerwan Lapostolle (1), Abdelhafid Sayah (2), Hayatte Akodad (1), Nicolas Javaud (2), Paul-Georges Reuter (1), Frédéric Adnet (1)

1. SAMU 93 - UF Recherche-Enseignement-Qualité, AP-HP, Hôpital Avicenne, F-93000 Bobigny, Université Paris 13, Sorbonne Paris Cité, EA 3509, France

2. Service des Urgences, AP-HP, Hôpital Jean Verdier, F-93140 Bondy, Université Paris 13, Sorbonne Paris Cité, EA 3509, France

3. Service des Urgences, CH d'Auxerre, France

Corresponding author: frederic.lapostolle@avc.aphp.fr

Keywords: ECG, Quality, Training

Introduction

ECG quality is crucial for a meaningful analysis. The objective of this study was to compare the quality, evaluated objectively and subjectively, of ECG routinely recorded in emergency medicine.

Methods

Multicenter, prospective study. Ethic committee agreement.

ECG were collected from the record of the patients in three French emergency departments (ED). Quality of the ECG was analyzed (1) objectively, by an investigator (in each ED) using a previously validated scale (from 0-maximum quality to 72-worst quality) (Lapostolle, Ann Emerg Med, 2009) and

(2) submitted to five emergency physician of each ED who attributed a subjective score (from 0-worst quality to 10-maximum quality) and decided whether the ECG should be “re-recorded” or not.

Results

290 ECG were analyzed by 22 emergency physicians in ED, respectively 220, 40 and 30 ECG per ED ; 50 (40-50) ECG were analyzed per emergency physician.

Objective scores were respectively 4 (8-13), 2 (0-7) and 3 (0-9) in the three ED.

Subjective scores were respectively 8 (6-9), 7 (5-8) and 6 (5-8) in the three ED.

The percentages of “refused” ECG were respectively 31%, 52% and 47% in the three ED.

The correlation between objective and subjective evaluation was modest ($R^2 = 0.38$). The percentage of ECG “refused” by investigators was more related to the subjective evaluation ($R^2 = 0.69$) than with the objective score ($R^2 = 0.34$).

Conclusion

More than a third of the ECG (collected from the record of the patients in emergency departments) have been rejected by the investigators! The ED where ECG had the worst objective median score was the ED that gave the best subjective scores and that rejected the less proportion of ECG. There seems to be a double sensitivity, individual and collective, to ECG quality !

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Pediatrics

TEMPORAL TRENDS IN EMERGENCY DEPARTMENT VISITS FOR BRONCHIOLITIS IN THE UNITED STATES, 2006-2010

Kohei Hasegawa (1), David Brown (1), Carlos Camargo, Jr. (1), Jonathan Mansbach (2), Yusuke Tsugawa (3)

1. Department of Emergency Medicine, Massachusetts General Hospital, Boston, United States
2. Medicine, Boston Children's Hospital, Boston, United States
3. Department of Health Policy, Harvard Medical School, Boston, United States

Corresponding author: koheihasegawamd@gmail.com

Keywords: bronchiolitis, trend, incidence

Background:

Bronchiolitis is a major public health problem in the United States. However, recent national estimates are not available for the incidence of bronchiolitis emergency department (ED) visits, hospital admission rates, and economic burden.

Objectives:

To examine temporal trends in ED visits for bronchiolitis among US children between 2006 and 2010.

Design, Setting, and Patients:

Serial, cross-sectional analysis of the Nationwide Emergency Department Sample, a nationally-representative

sample of ED patients. We used ICD-9-CM code 466.1 to identify children <2 years of age with bronchiolitis.

Main Outcome Measures:

Incidence rate of bronchiolitis ED visits, hospital admission rate, and ED charges.

Results:

Between 2006 and 2010, the weighted national discharge data included 1 435 110 ED visits with bronchiolitis, accounting for 4.3% of all ED visits for US children <2 years. There was a modest increase in incidence rate of bronchiolitis ED visits, from 35.6 to 36.3 per 1000 person-years (2% increase; $P_{trend}=0.008$), due to an increase in incidence rate among children from 12 months to 23 months (24% increase; $P_{trend}<0.001$). By contrast, there was a significant decline in incidence rate among infants (4% decrease; $P_{trend}<0.001$). Although the unadjusted admission rate did not change between 2006 and 2010 (26% in both years), the admission rate declined significantly after adjusting for potential patient- and ED-level confounders (adjusted OR for comparison of 2010 with 2006, 0.84; 95%CI, 0.76-0.93; $P<0.001$). Nationwide ED charges for bronchiolitis increased from \$337 million to \$389 million (16% increase; $P_{trend}<0.001$), adjusted for inflation. This increase was driven by a rise in the geometric mean of ED charges per case from \$887 to \$1059 (19% increase; $P_{trend}<0.001$). Multivariable-adjusted ED charges were higher for more recent years (25 % higher for comparison of 2010 with 2006; 95%CI, 20%-29%), and children with Medicaid (25% higher; 95%CI, 20%-29%); lower for EDs with high bronchiolitis volume (14% lower; 95%CI, 7%-22%; all $P<0.001$).

Conclusions:

Between 2006 and 2010, we found a divergent temporal trend in incidence of bronchiolitis ED visits by age group. Despite a significant increase in associated charges, hospital admission rates for bronchiolitis significantly decreased over this same period.

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Pediatrics

IMPROVING SAFEGUARDING DOCUMENTATION IN CHILDREN PRESENTING TO THE PAEDIATRIC EMERGENCY DEPARTMENT: LESS IS MORE!

Peter Heinz (1), Ravi Jobanputra (2)

1. Paediatric Emergency Department, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom
2. Paediatrics, CUHFT, Cambridge, UK, United Kingdom

Corresponding author: peter.heinz@addenbrookes.nhs.uk

Keywords: safeguarding, child protection, documentation

Background:

Consideration of safeguarding concerns in children presenting to the paediatric emergency Department (ED) is an essential part of their assessment. It is estimated that child abuse causes 1-2 deaths per week in England, possibly more and the clinician seeing a child in the ED may be the

only person to raise the alarm and to instigate safeguarding proceedings. In the UK, the National Institute of Clinical Excellence (NICE) released official guidelines in 2009 mandating clinicians to consider safeguarding issues in every child and to ensure appropriate intervention if child abuse is suspected. In order to show that safeguarding has been considered, one relies on documentation in the clinical notes stating the presence or –thankfully in most cases- absence of concerning features. There is ample literature on how to try and improve this documentation but reality is that current practice falls way below the expected standard.

Method:

Our paediatric ED in a tertiary University Hospital sees 20,000 patients per year. We have been implementing prompts in the printed ED documentation for a number of years and regularly audited compliance of medical and nursing staff in documenting safeguarding concerns. When a detailed list of concerning features was used, documentation of safeguarding issues was poor: in 2008 only 23% of children had positive/negative safeguarding concerns documented in their notes when using a sticker. On re-audit in 2010 following launch of the NICE guidance and changing the layout of the ED cards using a list of eight prompts in every set of notes this had marginally improved to 29%. In addition, safeguarding training had become compulsory for all ED staff. We then took a different approach in removing detailed checklists and limiting documentation of safeguarding concerns to only two tick boxes for nursing and medical staff each, stating whether the member of staff had considered safeguarding issues and secondly whether they had any concerns. 100 consecutive sets of paediatric notes were reviewed and documentation of safeguarding considerations noted.

Results:

78% of patients had the safeguarding assessment completed by paediatric nurses. In comparison, 62% of patients had safeguarding assessment boxes ticked by medical staff in ED. Emergency Nurse Practitioners saw 10% of the patients and completed an assessment in all cases. Five patients were diverted to a General Practitioner co-located in the ED; despite using the same documentation, no safeguarding assessments were documented. 85 patients (89% excluding the GP referred patients) were assessed by at least a nurse or a doctor but 10 patients had no safeguarding assessment whatsoever.

Conclusion:

Safeguarding documentation is improved by emphasizing training of nursing and medical staff and by keeping documentation simple. Nurses are much better than doctors in completing safeguarding assessments and the reasons for this are unclear. Seniority and duration of employment in the department do not seem to impact on documentation behaviour. By targeting certain staff groups like GPs and medical staff levels of compliance are likely to increase further.

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Pediatrics

IMPACT OF VIDEO DISCHARGE INSTRUCTIONS FROM THE EMERGENCY DEPARTMENT IN REGARD TO CAREGIVER UNDERSTANDING OF THEIR CHILD'S FEVER AND CLOSED HEAD INJURY

Shareen Ismail (1), Mark McIntosh (1), Colleen Kalynych (1), Madeline Joseph (1), Todd Wylie (1), Ryan Butterfield (2), Carmen Smotherman (2), Dale Kraemer (2), Sarah Osian (2)

1. University of Florida COM Jacksonville, Department of Emergency Medicine, Jacksonville, United States

2. Center for Health Equity and Quality Research, University of Florida COM, Jacksonville, Jacksonville, United States

Corresponding author: Colleen.Kalynych@jax.ufl.edu

Keywords: video discharge instruction, pediatric discharge instructions, fever and closed head injury discharge instructions

Background:

Lack of understanding of diagnosis and disease process remains a major complaint of parents who bring their children to the Pediatric Emergency Department (PED). Misunderstanding of diagnosis and discharge instruction often leads to health disparities, and unnecessary return visits. Therefore, the objective of this pilot study was to determine if video discharge instructions improved caregivers understanding of their child's diagnosis, disease process, and discharge instructions.

Methods:

Parents of children who presented to the PED with a chief complaint of fever or Closed Head Injury (CHI) were included. Consented participants were randomly and blindly assigned to a usual care control or intervention group. Each group received regular printed discharge instructions provided by staff, however, the intervention group also viewed an informational video approximately 5 minutes in length specifically created for this project. Video* content covered information about diagnosis and discharge instructions. Participants completed a post-intervention test on knowledge and were called 2 weeks later to determine follow-up visits to health care providers. Categorical variables were described as counts and percentages and analyzed using Fisher's exact tests. Continuous variables were described using medians and analyzed using Wilcoxon Rank Sum tests. Bonferonni's adjustment was used to account for multiple comparisons.

Results:

Sixty-three parents participated in the study. There were 53 females, 10 males, with 12 white, 46 black, and 5 of other self-identified race. Eleven participants had less than high school (HS) education and 52 had more than a HS education. There were 31 who presented with fever (15 controls, 16 intervention), and 32 presented with CHI (17 controls, 15 intervention). The intervention group had significantly higher post-intervention test scores (presented as percentage correct; Mdn=88.89) than the control group (Mdn=75.73); $p < .0001$. Interestingly, participants in the intervention group with less than HS education (Mdn=89.47) and more than HS education (Mdn=88.89) had similar test scores, whereas those in the control group

with less than HS education (Mdn=66.67) had significantly lower test scores than those with more than HS education (Mdn=77.78); $p=.025$. When comparing fever vs CHI, there were no differences between groups, and there were no associations between test scores and age, race, education, or gender for either group (fever vs CHI).

Conclusions: For parents of children who present to the PED with common complaints such as fever and CHI, video discharge instructions improved parental understanding of the child's diagnosis, disease process, and post-care when added to verbal and written instructions. Incidentally, in the intervention group, the video discharge instructions were equally effective in parents of higher and lower education and those in the control group showed significant differences. Video delivery of education material may be a highly effective mechanism to improve parental knowledge, especially in underserved communities where education levels may be lower.

*Videos: The authors will show the videos at the conference whether poster or oral presentation. Videos are characterizations of staff who served as the "actors" to keep the cost of the videos reasonable, but of quality. A professional videographer was utilized to film, record, create the characterization, and edit the videos.

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Pediatrics

URINARY TRACT INFECTIONS IN INFANTS UNDER 90 DAYS OLD. PATIENTS WITH LOW RISK OF BACTEREMIA. PRELIMINARY RESULTS.

Velasco Roberto (1), Benito Helvia (1), Mozun Rebeca (1), Trujillo Juan Enrique (1), Merino Pedro (2), . Group For The Study Of The Young Febrile Infant Of Riseup-sperg Network (3)

1. PEDIATRICS, RIO HORTEGA UNIVERSITARY HOSPITAL, VALLADOLID, Spain
2. INTENSIVE CARE UNIT, RIO HORTEGA UNIVERSITARY HOSPITAL, VALLADOLID, Spain
3. PEDIATRICS, RISEUP-SPERG, ., Spain

Corresponding author: robertovelascozuniga@gmail.com

Keywords: urinary tract infection, bacteremia, infant

Background

Clinical guidelines recommend inpatient treatment of febrile infants less than 90 days old diagnosed with urinary tract infection (UTI) due to the risk of adverse events, mainly bacteremia.

Objective

To determine whether the risk of complications, mainly bacteremia, associated with UTIs in febrile infants less than 90 days old is different in those patients with one or more risk factors compared to those without any risk factors

Patients and methods

Prospective multicentric study carried out in 19 Spanish Paediatric Emergency Departments members of the RISEUP-SPERG (Spanish Pediatric Emergency Research

Group), including febrile infants less than three months old diagnosed with UTI between October-2011 and September-2012. UTI was defined as the growth of more than 50000 CFU/ml of a single pathogen in urine culture, or the growth of more than 10000 CFU/ml if the urinalysis showed leukocyturia and/or nitrituria. It was considered a complication of the UTI the development of bacteremia (with or without associated sepsis) or meningitis by the same bacterium isolated in the urine culture or exitus.

Results

A total of 2173 infants were included. After exclusion criteria, 1790 (82.3%) were analyzed, being 350 (19.7 %) diagnosed with UTI. 17 (4.83%) of them developed complications.

Most frequently germs isolated in urine cultures were *Escherichia coli* (83.7%), *Klebsiella pneumoniae* (6.6%) and *Enterococcus faecalis* (3.1%). *Escherichia coli* grew in 16 of 17 positive blood cultures (94.1%). The other one was *Enterobacter cloacae*.

In univariate analysis, the variables significantly associated with the development of bacteremia secondary to UTI were:

	UTI+BACTEREMIA	OR(CI95%)
Age		
≤ 28 ddd	11/112 (9.8%)	
>28 ddd	6/238 (2.5%)	4.21 (1.52-11.70)
Irritability		
Yes	7/71 (9.9%)	
No	10/279 (3.6%)	2.94 (1.08-8.03)
Not well-appearing		
Yes	5/37 (13.5%)	
No	12/313 (3.8%)	3.92 (1.30-11.83)
CRP		
< 40 mg/L	4/196 (2.0%)	
≥ 40 mg/L	13/154 (8.4%)	4.43 (1.41 -13.86)
PCT		
< 0,6 ng/ml	3/156 (1.9%)	
≥ 0,6 ng/ml	13/99 (12,4%)	7.71 (2.13 -27.81)

When a multivariate analysis was made with the 234 patients in whom a blood procalcitonin was determined, the only risk factors for complicated UTI with statistical significance were the represented in table 1.

Table 1

RISK FACTOR	OR	CI 95%
Age ≤ 28 days	5.29	1.66-16.81
Irritability	4.43	1.30-15.14
PCT ≥ 0.6 ng/mL	4.29	1.04-17.77

If the sample is divided into two groups, the one including patients with one or more risk factors (age ≤ 28 days, not-well appearing and/or PCT ≥ 0.6 ng/mL), and the other including those without any risk factor, we found the following results:

	UTI COMPLICATED	UTI	TOTAL
≥ 1 RF	128	16	144
NO RF	111	0	111
	239	16	255

This predictive model showed a sensitivity of 100% (CI95% 80.6-100), with a specificity of 46.4 (CI95% 40.2-52.8) and a negative predictive value of 100% (CI95% 96.7-100)

Conclusions

Well appearing infants between 29 and 90 days of age diagnosed with febrile UTI, and with blood procalcitonin less than 0.6 ng/ml showed a very low risk for complications and may be suitable for outpatient management.

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Pediatrics

IMPACT OF NATIONAL JAUNDICE GUIDANCE (NICE CG98) ON INAPPROPRIATE ATTENDANCES IN A PAEDIATRIC EMERGENCY DEPARTMENT

Emilia Bruton (1), Peter Heinz (2), Catherine Mcknight (3)

1. Paediatric Emergency Department, Cambridge University, Cambridge, United Kingdom
2. Paediatric Emergency Department, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom
3. Neonatology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

Corresponding author: peter.heinz@addenbrookes.nhs.uk

Keywords: jaundice, neonate, inappropriate

Background:

In May 2010 the National Institute of Health and Clinical Excellence (NICE) launched guidelines on neonatal jaundice, mandating quantitative bilirubin testing in every jaundiced neonate. It was not until August 2011 that this guidance was implemented by our local midwifery teams. As a consequence we experienced a significant influx of jaundiced but well neonates to our paediatric emergency department (ED) over the next 9 months for bilirubin assessment, putting a significant strain on services.

Method:

Review of hospital episode statistics and comparison of ED attendances against the background of local birth rates and in-patient admission of neonates with jaundice as diagnosis. Review of cost implications and measures taken to resolve inappropriate ED attendance of these children.

Results:

In the 14 months preceding implementation of the guideline, on average 14.5 neonates with jaundice presented to the paediatric ED (median 14 neonates per month). After implementation this rose to an average of 49 patients per month (median 39). Local birth rate had remained very constant at around 490 births per month. Admission of neonates to a paediatric in-patient ward with jaundice as a diagnosis did not rise significantly at approximately 15 cases per month. After introduction of transcutaneous bilirubinometers for community midwives (at the cost of £15,000/EUR 17,340) the attendance figures dropped back to the previous baseline. The cost of additional ED attendances to the health economy was in the range of £20,000/EUR 23,120, another £90,000/EUR 104,000 cost incurred by diverting jaundiced babies to additional outpatient clinics during office hours.

Conclusion:

Poorly implemented national guidance can create significant costs to the health system if not planned across primary and secondary care boundaries. Shying away from pump priming investment by local commissioners in times of financial constraints is likely to cause a protracted increase in healthcare costs. Most importantly though, emergency departments are likely to see the brunt of this type of mismanagement, causing significant inconvenience to patients and families. A careful assessment of the impact of national guidance on out of hours emergency services should be part of any national guideline development.

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Pediatrics

CHILDREN AND YOUNG PEOPLE UNDER 16 PRESENTING WITH SELF-HARM TO THE EMERGENCY DEPARTMENT OF A SINGLE CENTRE

Ho Tim Timothy Leung, Helen Bailie

Department of Paediatrics, Addenbrooke's Hospital, Cambridge, United Kingdom

Corresponding author: timothy.leung@cantab.net

Keywords: Self-harm, Children and adolescents, Emergency department

BACKGROUND: Self-harm presenting to the Paediatric Emergency Department (ED) is uncommon, but in the UK, it is often the first point of access to subsequent clinical services for these vulnerable patients. Specialists in emergency medicine, paediatrics and mental health services must therefore collaborate effectively to provide optimum care for these patients. Guidelines from the National Institute for Clinical Excellence (NICE) were introduced in 2004 for the management of children and young people under 16 presenting with self-harm. The standards recommend overnight admission of all patients to a paediatric ward or an adolescent psychiatric inpatient unit. If admitted to a paediatric ward, they should be under the care of a paediatrician and assessed by Child and Adolescent Mental Health Services (CAMHS) during the admission. **AIMS:** To investigate the characteristics of children and young people under 16 presenting with self-harm to our department, which sees approximately 20,000 patients of this age group per year; to review our adherence to the NICE standards for management of this group and identify areas where the service could be improved. **METHODS:** A retrospective search was performed using our ED coding system. We identified patients up to 16 years presenting to the ED with self-harm between 1 January 2011 and 31 December 2012 inclusive. The electronic medical records of these patients were accessed, comprising discharge summaries from their ED attendances and hospital admissions. Episodes were excluded if they did not accord with the definition of self-harm used by NICE or were cases of alcohol intoxication with no other self-injury or self-poisoning. Characteristics of

the patient (age, gender, previous self-harm, known to CAMHS), episode (time of presentation), management in ED (time till seen in ED, time till discharged from ED, destination on discharge), and subsequent management (overnight admission, specialty of clinician in charge of admission, assessment by CAMHS in hospital, planned follow-up) were recorded. The results were evaluated against NICE standards. RESULTS: 110 episodes met the inclusion criteria. The age at presentation ranged from 8 to 15, with 51.8% being 15 year-olds. 81.8% were female. 47.7% had recorded previous self-harm. 50.0% were previously known to CAMHS. 69.2% presented with self-poisoning only, 26.0% with self-injury only, and 4.9% with both. Overall, 59.1% presented out of the normal office hours for CAMHS, with 36.4% presenting between 1800h and 0000h. 41.1% were seen within 60 minutes of arrival in the ED, with a range of 2-277 minutes. 91.8% were discharged from ED by 4 hours. 52.6% waited over 2 hours between assessment by a clinician and discharge or transfer from the department. On discharge from the ED, 62.7% were admitted to a paediatric ward, 6.4% were admitted directly to an adolescent inpatient psychiatric unit and 10.0% were admitted to a non-paediatric ward. 20.9% were not admitted. Of those not admitted (n=23), 61.1% were cases of self-injury with no self-poisoning, and 71.4% were not recorded as having been assessed by a psychiatry team before discharge. In accordance with NICE recommendations, 87.3% of those admitted stayed overnight, 88.7% were under the care of a paediatrician, and 77.5% were documented as having been assessed by CAMHS during the inpatient admission. Planned follow-up was arranged with outpatient CAMHS in 59.1% of all presentations. 13.6% were admitted to an adolescent inpatient psychiatric unit on discharge from the ED or the ward. CONCLUSIONS: Over half of the children and young people under 16 presenting with self-harm to our ED wait between 2 and 4 hours before they are discharged or transferred from the department. This time is spent in a busy and noisy setting, which is not the optimum environment for these patients. Although the management of most patients adheres to NICE guidelines, we have identified several areas for service improvement. These include more timely admission to a ward; admission for those presenting with self-injury; overnight admission, which facilitates a more valid assessment of the young person's mental state; and ensuring assessment by CAMHS during admission, which forms the basis for future care of the young person. Reinforcement of the guidelines to clinical staff in both the emergency and paediatric departments would facilitate service improvement, and a programme of education should be implemented.

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Pediatrics

INTER RATER RELIABILITY OF CLINICAL APPEARANCE IN FEBRILE INFANTS AND TODDLERS

Paul Walsh (1), Justin Thornton (2), Julie Asato (2), Nicholas Walker (2), Lev Libet (2), Faried Banimahd (2)

1. Emergency Medicine, UC Davis, Sacramento, United States
2. Emergency Medicine, Kern Medical Center, Bakersfield, United States

Corresponding author: yousentwhohome@gmail.com

Keywords: fever, clinical appearance, inter rater agreement

Background: Deciding whether or not a febrile infant is ill appearing is a fundamental step in the evaluation of fever. Implicit in this construct is the assumption that clinicians would agree on whether a particular child is ill or not ill appearing. We also believe that appearance is a continuum and that it is sometimes acceptable to be unsure.

Objectives: To measure the agreement of emergency physicians'

assessment of the appearance of febrile children aged less than 24 months across the categories 'ill appearing', 'not ill appearing', and to allow for uncertainty 'not sure'.

Methods

Setting: A county hospital teaching emergency department (ED) with emergency medicine residency.

Design: Cross sectional observational study.

Subjects: The subjects whose reliability was being tested were board eligible or certified emergency medicine physicians (EP), mid level providers and residents. The patients in the study were children aged less than 24 months who presented to the ED with a complaint of fever, or a rectal temperature of 38°C or higher in triage. Two physicians were asked to give their assessment of infant

appearance using the categories 'ill appearing', 'not ill appearing' or 'not sure'. EPs were asked to do this both on a 'gestalt' basis and again after examining the infant. The details of how the exam performed was up to each individual physician. Each EP performed their evaluation without the other being present and was blinded to the other EP's results. The data was recorded on two data forms, one for each physician.

Data Analysis: Our primary analysis was graphical. We categorized agreement as follows, (1) reviewer 1 and reviewer 2 agree, (2) reviewer 1 considers infant more ill appearing by one category than reviewer 2, (3) reviewer 1 considers patient more ill appearing by two categories than reviewer 2, (4) reviewer 1 considers patient less ill appearing by one category than reviewer 2, (5) reviewer 1 considers patient more ill appearing by two categories than reviewer 2. We created a bar graph with a bar representing the proportion of patients each category. We also calculated Gwet's AC1 rather than a Cohen's Kappa because most infants were well appearing. Conservatively, we did not give credit for partial agreement.

Results: Physician pairs representing 29 different combinations of experience and training examined 139 patients. Twelve of these combinations of experience and training occurred only once. The median patient age was 9.1 months (IQR 4.3, 14.2) and 88/139 (63%) were male.

For the 'gestalt' impression the unadjusted AC1 was 0.49, following the full exam the AC1 was 0.62.

Conclusion: Physicians mostly, but not always, agree on their clinical impressions as to whether children less than 24 months are ill appearing. They agree more after a full exam than after a 'gestalt' assessment.

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Pediatrics

UTILIZATION AND EFFECTIVENESS OF A LANGUAGE INTERPRETER SERVICE IN THE PEDIATRIC EMERGENCY DEPARTMENT FOR HISPANIC PATIENTS WITH LIMITED ENGLISH PROFICIENCY

Martha Casamalhuapa (1) Jennyfer Urena (1) Roy Vega (2)

1. *Pediatrics, Bronx Lebanon Hospital Center, Bronx, United States*
2. *Emergency Medicine, Bronx Lebanon Hospital Center, Bronx, United States*

Corresponding author: rvega@bronxleb.org

Keywords: Hispanic, LEP: Limited English Proficiency, Translation service

BACKGROUND

Among children in the US ages <17, there were 17.1 million Latinos, or 23.1% of this age group, according to an analysis by the Pew Hispanic Center. The number of Latino children has grown 39% over the past decade. Recently there has been increased pressure, including new legal requirements, on healthcare systems to ensure equal treatment for caregivers with limited English proficiency (LEP). In 2008 the Latino Health Care Symposium defines LEP as individuals who do not speak English as their primary language and have a limited ability to read, speak, write, or understand English. A key to meeting this goal is reducing the barriers that arise when a health care provider (HCP) and patient do not speak the same language, such barriers that can negatively affect both patient and provider satisfaction.

In the setting of any Emergency Department (ED), physicians are routinely confronted with problems associated with language barriers. Miscommunication between patients and HCPs occurs commonly in the ED. Although HCPs must be comfortable making critical decisions often based on limited information, the ability to communicate well with patients is nevertheless an important goal to achieve.

Patient satisfaction is closely linked to the patient's treatment; follow up plans, and better treatment adherence. Maximizing patient satisfaction can increase the likelihood of a patient returning to the ED for care, in addition to reducing the likelihood of lawsuits.

Many studies have demonstrated that language barriers decrease the quality of health care received by LEP patients. Various methods have been used to overcome language barriers in the ED, including ad hoc interpreters (such as family and ED staff), telephone interpreter

services, and professional interpreters. Each method has its advantages and disadvantages.

OBJECTIVE:

1. To assess satisfaction in LEP patients in regards to translation services offered in the pediatric emergency department.
2. To determine if translation services were appropriately offered at all encounters in the hospital setting (registration, triage, MD, RN and any other departments such as Radiology).

METHODS:

Self administer anonymous questionnaires were provided to Spanish speaking caregivers and/or patients, who had been identified as having LEP by the nurse or by the treating HCP at discharge or admission. No patient identifiers were collected.

Analysis: Data were analyzed using percentage proportions and the W2 method. Statistical significance was set at $p < 0.05$. Analysis was performed with SPSS version 15 (SPSS, Inc, Chicago, Ill).

Study Site: Pediatric Emergency Department at BLHC

Study Population: Spanish speaking ED patients who were identified as LEP

SELECTION OF STUDY POPULATION:

Inclusion Criteria: ED patients who were identified as LEP: Individuals, who do not speak English as their primary language and have a limited ability to read, speak, write, or understand English.

Exclusion criteria: Patients who's primary language is English and/or do not have a limited ability to read, speak, write or understand English.

Results: Surveys were obtained from 150 patients. Translation services (TS) were offered on arrival in 58%, 17% responded that TS were offered in all areas of their stay, 56% responded that TS were offered at the MD encounter. Family members were used for TS in 65%. However the patient was utilized for TS in 80% of the time. Only 28% of respondents said that phone translation services were offered, and only 17% of these were very satisfied with the service. Eighty six percent stated that "Spanglish" was used at some point during their ED visit and only 0.08% denied the use of Spanglish. Fifty six percent of the respondents stated that they had the least problems in communication at the time of encounter with physician, as compared to 10.7% at the time of discharge.

Conclusions

The satisfaction with the translation services offered to patients who participated in this study was poor. The use of a pediatric patient for TS is potentially error prone. More needs to be done to ensure proper health care service to LEP patients. The use of in-house translators, or web cam based internet services may improve satisfaction with TS.

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Pediatrics

PEDIATRIC CARDIOPULMONARY RESUSCITATION HEALTH LITERACY: A SURVEY OF PARENTS OF PEDIATRIC EMERGENCY DEPARTMENT PATIENTS

Imran Faruqi (1), Rebecca Hutchings (2), Crystal Leach (3), Benjamin Lee (4), Lisa Moreno-walton (4), Christina Zeretzke (5)

1. Medical Student, University of Queensland Medical School, Queensland, Australia
2. Pediatric Emergency Medicine, Oschner Medical Center, New Orleans, United States
3. Medical Student, Louisiana State University Health Sciences Center, New Orleans, United States
4. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, United States
5. Pediatrics, Our Lady of the Lake Medical Center, Baton Rouge, United States

Corresponding author: DoctorMoreno@gmail.com

Keywords: cardiopulmonary resuscitation, pediatrics, health literacy

Background: Administering CPR in early stage cardiac arrest has been shown to decrease mortality and morbidity of infants and children. Most children who have an out-of-hospital cardiac arrest do not receive bystander CPR.

Objectives: To determine the percentage of parents who know how to effectively perform CPR on infants or children and if, after receiving pediatric CPR training, they would do so.

Methods: A convenience sample of 600 parents of Pediatric ED patients at 2 urban teaching hospitals in 2 cities were enrolled during all shifts. They completed an anonymous survey on p-CPR. Data was analyzed using Pearson's Chi Square Test and simple proportions.

Results: 50.3% of parents surveyed had a child <1 year old, 56.0% had a child 2-12 years, and 18.3% 13-18 years. 17.7% had a premature infant. 47.2% were able to define p-CPR. 81.4% are aware that CPR can save a child's life. 25.8% had trained in infant CPR, 25.9% had trained in child CPR, and 24.6% in adult. 66.8% had no CPR training experience. 9.5% had training <1 year ago, 7.0% had training 1-2 year ago, 5.3% had training 3-4 years ago, 11.5% had training more than 5 years ago. 2.4% had performed CPR on an infant, 1.9% on a child 2-12, and 2.0% on a child 13-18. The majority of those who did not train in p-CPR were not comfortable with performing CPR on children. If trained in CPR, 60.6% would be willing to perform it on their own child and 56.5% would be willing to perform p-CPR on someone else's child. 19.5% of surveyed parents had no access to training/ re-training. 44.7% of surveyed parents did not know where to go train or retrain. 35.8% did not know that parents could receive training.

Limitations: The study was conducted at only two sites, both in one state.

Conclusions: The study demonstrates the need for public education. Not knowing where to train was the greatest barrier to learning p-CPR. Most parents, if trained, would be willing to perform bystander p-CPR.

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HEALTH LITERACY AND PATIENT ACTIVATION LEVELS IN EMERGENCY DEPARTMENT PATIENTS

Phyllis Hendry (1), Colleen Kalynych (1), Jennifer Johnson (1), Dale Kraemer (2), Donna Carden (3)

1. Emergency Medicine, University of Florida College of Medicine/Jacksonville, Jacksonville, United States
2. Center for Health Equity and Quality Research, University of Florida College of Medicine/Jacksonville, Jacksonville, United States
3. Emergency Medicine, University of Florida College of Medicine/Gainesville, Gainesville, United States

Corresponding author: phyllis.hendry@jax.ufl.edu

Keywords: Health literacy, Patient activation measure levels, Discharge planning

Introduction: It has been well documented that people with low literacy often experience poorer health outcomes than those with higher health literacy. Additionally, it has recently been identified that low patient activation levels may also impact health outcomes. Patient activation levels are a reflection of a patient's motivation and ability to manage their own healthcare. A patient's health literacy, measured through the Rapid Estimate Adult Literacy in Medicine test (REALM), and their activation/motivation (measured through Patient Activation Measure- PAM-SF™) are relevant to the Emergency Department (ED) population as each may contribute to the need for or the patient's decision to seek care in the ED. This study aimed to determine the association of ED patients' REALM and PAM scores and their relationship to seeking care in the ED. This is the first known study to measure PAM-SF™ and activation levels in the ED setting.

Methods: This pilot study was completed at a large, urban academic medical center with an annual ED volume of 95,000 patients. A convenience sample of ED patients aged >18 years of age were approached through systematic sampling: every 6th patient based on registration time with 2/3rds of patients recruited from 11am-11pm and 1/3rd from 11pm-11am. **Study exclusions:** vision severely impaired, hearing-impaired, severely ill (i.e., triage level 1, hemodynamic instability, respiratory compromise), in police custody, incarcerated, unable to provide consent, or non-English speaking. Data collected on consented patients included REALM and PAM surveys, demographic information, reason for visit, self-evaluation of overall health, employment status, marital and education level. Scores of >61 on the REALM is considered adequate vs. <60 as inadequate (<8th grade reading level); and PAM scores <52.9 (Levels 1 and 2) as low activation and scores >56.4 (Levels 3 and 4) as high activation. Descriptive statistics were estimated for all variables and associations were assessed between demographic and admission characteristics and REALM and PAM scores. Associations were assessed using Spearman's rank correlation coefficient.

Results: We approached 140 patients with 32 refusals, leaving 108 for inclusion. Mean age was 51 years; 60% were Male; and 34% White, 63% African American, and 3% other. Education: 30% had less than a high school education, 35% graduated high school or had a GED, and 35% with some college or a college graduate. Most were unmarried (80%) and 50% rated their health as good or better with 62%

reporting they have a primary care doctor. The mean REALM score was 52, suggesting an average reading level of 8th grade or lower and an average PAM score of 64, which falls in the level 3 category of "just beginning to take action, but may lack the confidence and skill to support their behaviors." Those who had a high REALM score were more likely to be in the high activation category ($p=.0009$; $r=0.30$) and those who rated their overall health as very good to excellent were more likely to be in the high activation category ($p\leq.001$; $r=-0.31$). Additionally, those who are older were less likely to be in the high activation category ($p=.01$; $r=-0.24$)

Conclusion: Financial disincentives for hospital readmissions and ED overcrowding are key issues in the restructuring of the US healthcare system and ED functionality. Understanding the effects of health literacy levels and patient activation measures may offer solutions to improving ED discharge planning, patient satisfaction, and overall healthcare access and planning. This pilot study will lead to future studies regarding the use of patient activation levels in programs to improve discharge planning and decrease ED readmissions. Elderly patients make up a disproportionate share of hospital admits and ED visits. Programs to improve their PAM may result in decreased admissions. This study is being conducted at 2 additional sites with varying socioeconomic patient mixes. Additional data analysis will be conducted when all sites have completed PAM scoring.

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ASSESSMENT OF PATIENT SATISFACTION WITH EMERGENCY DEPARTMENT SERVICES

Mohammad Ali Fahimi (1), Hamid Reza Mehryar (2)

1. *Emergency medicine department of Ahvaz, jundishapur university of medical sciences, Ahvaz imam khomeini hospital, Ahvaz, Iran, Islamic Republic of*

2. *Department of Emergency Medicine, Faculty of Medicine, Urmia University of Medical Sciences, urmia imam khomeini hospital, urmia, Iran, Islamic Republic of*

Corresponding author: Fahimi76@yahoo.com

Keywords: Satisfaction, Quality of Medical Service, Emergency Department

Background and Objective: Patient satisfaction is an important indicator of quality of care and service delivery. Assessment of patients' satisfaction with their emergency department(ED) experience could have an effective role in improvement of emergency department services.

Materials and Methods: This study was carried out in three months and during all shifts, by trained researcher using standard Press Ganey questionnaire. The study questionnaire included 30 questions, based on likert scale, and comprised four sections namely: 1- Identification and waiting time, 2- Registration process, physical comfort and nursing care, 3- Physician care, 4- Overall satisfaction of emergency department. Data was analyzed descriptively.

Results: One hundred patients presenting to our ED were included in this study. The highest satisfaction rates were observed in the items of nursing care (75%) and Nursing skills and timely implementation of medical orders (74%). The patients rated high dissatisfaction with these items: The number of visits by physician (45%), the time that the doctor has spent with his or her patients (47%) and involving patients to choose treatment protocols (49%). The average length of stay of patients in the emergency department was calculated 15 hours. Sixty five percent (CI: 58/1, 71/9) of the patients rated their general satisfaction with emergency setting as good or very good.

Conclusion: The study findings indicate that satisfaction rate is relatively acceptable in the emergency care services, such as: nursing care, nursing skills and timely implementation of medical orders, courtesy of reception staff and explanation of the doctor to patient about the disease and the current problem. Efforts should focus on shortening patients stay time, increasing patients' satisfaction of medical care and improving patients' perceptions about waiting in ED.

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EMERGENCY DEPARTMENT VISITS AMONG CANCER PATIENTS IN HARRIS COUNTY, TEXAS

Kelly W Merriman (1), Knox H Todd (1), Monica K Wattana (1)

1. *Emergency Department, MD Anderson Cancer Center, Houston, United States*

Corresponding author: mwattana@mdanderson.org

Keywords: Oncologic Emergency Medicine, Cancer, Emergency Department Visit

Study Objective: To describe cancer-related ED visits made over one year in Harris County, Texas.

Methods: Retrospective chart review. We conducted a secondary analysis of data maintained by the University of Texas School of Public Health for the original purpose of monitoring access to primary care. This database contains information routinely collected for administrative use by all 28 hospitals with EDs serving residents of Harris County, Texas. The analysis included data from calendar year 2010. Descriptive statistics were calculated and multivariate models were constructed to estimate the odds ratios for hospital admission and death for cancer versus non-cancer related ED visits.

Results: Of 1,017,297 non-unique ED visits in 2010, 14,190 (1.4%) included an ICD-9 diagnosis of cancer within the first five positions, while 15,981 (1.6%) had a cancer diagnosis within the first ten positions. Patients with cancer diagnoses were older than those without cancer (57.5 vs. 33.9 years, $P<0.001$), were more often female (51.4% vs.48.6%, $P<0.001$); and more likely to be insured. Minority ethnicities were underrepresented. Cancer patients had higher ambulance use rates (23.7% vs. 14.9%,

P<0.001), hospital admission rates (22.2% vs.5.9%, P<0.001); ED death rates (3.2% vs. 0.4%, P<0.001); and longer ED lengths of stay (7.9 vs. 4.5, P<0.001). . After controlling for sex, race, age, payor status, type of transportation, and hospital ED site, patients with cancer-related visits were 3.14 (95% CI 3.02 -3.26) times more likely to be admitted than non-cancer related visits and 4.89 (95% CI 4.07-5.87) times more likely to die in the ED. Conclusion: This is the first study to provide a description of cancer-related ED visits by patients within a defined metropolitan area. Although persons with cancer represent a small proportion of all patients seen in the ED, they require a disproportionate share of treatment resources. These results may be used to compare cancer-related ED utilization for different geographic regions and suggest strategies to strengthen our systems of cancer care.

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PROJECT PORTE D'ENTRÉE: IS YOUR HAND HYGIENE A LIABILITY?

Abel Wei (1)

1. Emergency Department, University Medical Centre St. Radboud Nijmegen, Nijmegen, Netherlands

Corresponding author: Abelwei@gmail.com

Keywords: Hand Hygiene, quality of care, infection prevention

In the chaos of the emergency department (ED) we tend to forget the fundamentals of hand hygiene. Health care-associated infection is one of the most important patient safety problems. Without proper hand hygiene, the personnel of the ED become the vector of pathogens responsible for nosocomial infection.

An observational study on the compliance of hand hygiene was carried out in 2012 at ED of University Medical Centre St. Radboud Nijmegen. The subjects, include both ED nurses and physicians, are unaware of the identity of the observer. The compliance is rated on 5 indications advised by World Health Organization: before and after touching a patient, before an aseptic procedure, after exposed to patient's body fluid and after touching patient surroundings.

144 observations were recorded in the period of 3 weeks at random intervals during morning and evening shifts. The compliance of hand hygiene of the ED physicians is 25% and the ED nurses' 29%. We also looked at the compliance of each WHO indications (the graph below). Please note the indication of after touching patient surrounding is further specified as after leaving the patient room and after taking off non-sterile gloves.

Several interventions have been implemented after the observational study. In collaboration with department of hygiene and infection prevention we identified locations across our ED where the alcohol disinfectant dispensers are needed. We have doubled the amount of alcohol disinfectant dispensers at our ED department, from 25 to

55. 10 of which is mounted to intravenous drip and indwelling catheter trolleys, specifically targeting the zero compliance of hand hygiene before aseptic procedures. The choice of hand disinfectant has changed Sterillium Med because of 50% shortening of contact time compared to the previous product, efficacy against noro virus and proven skin friendliness.

To increase the personnel's awareness on hand hygiene we are planning to implement Theme of the week. During the first week of each month there'll be posters hanging up in the department, special attention paid to explaining 5 interventions to each other during the handovers, wearing buttons with "Ask me if I washed my hands?", black-light box to check the adequacy of applying the disinfectant. Most important of all, the compliance will be measured again to document improvement. The result will ready for publishing at the 7th Mediterranean Emergency Medicine Congress.

The project Porte d'entrée has been approved by the CEO of UMC St. Radboud Nijmegen and will be enforced at every patient related department. Our ED is the pilot in this hospital-wide project.

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EMERGENCIES DURING THE MONTH OF RAMADAN

Reda Hafiane (1), Khalid Khaleq (1), Basma Bilal (1), Mourad Nafaa (1), Mohamed Mouhaoui (2), Khalid Yaqini (1), Mohamed Moussaoui (1), El Houssaine Louardi (1)

1. Emergency departement, CHU IBN ROCHD CASABLANCA, Casablanca, Morocco

2. Emergency department, CHU IBN ROCHD, Casablanca, Morocco

Corresponding author: hafiane.reda@hotmail.fr

Keywords: Ramadan, Emergencies, Medical diseases, Carelessness accidents , road accidents

INTRODUCTION: The Ramadan's fast is one of the five pillars of Islam and is accompanied by significant changes in eating and sleeping habits of the moroccan muslim community.

OBJECTIVE: The aim of the study is to determine the qualitative and quantitative aspects of admissions to the Emergency department during the month of Ramadan with the study of their circadian rhythm to lead to recommendations for improving health situation during this month.

MATERIALS AND METHODS: This is a descriptive prospective observational study over a period of three months from 12 July 2010 to 09 October 2010 included with periods of 1 month before and 1 month after Ramadan.

The study is based on the collection of data from the records of the Emergency department comparing the study group of Ramadan with the control group of the period

before and after the month of Ramadan. The data collected included patient's age, date of admission and the diagnosis. RESULTS: The month of Ramadan was marked by a decline in the total number of admissions (5,875 admissions): down 3% compared to the previous month and 5% over the next month with a predominance of age between 25 and 50 years. Medical diseases were the most frequent (65% of total admissions), followed by carelessness' accidents (14%), then by road accidents (9%). The rate of medical disease is reduced by 5% compared to the month before Ramadan and 4% compared to the month after. Carelessness' accidents rate is increased by 0.85% compared to the month before Ramadan and 15% the next month and as well as for road accidents rate is increased by 16% compared to the previous month and decreased 9% over the month following Ramadan. Major medical diseases were cardiovascular diseases (38%): hypertensive urgency, myocardial infarction and strokes. Followed by digestive diseases (27%): functional bowel disorder and peptic ulcer disease. While diabetic imbalances represented only a minority (9% of medical diseases). Concerning the daily distribution of admissions, there was a peak of admissions for road accidents and aggressions that coincided with the time of breaking the fast.

CONCLUSION: The month of Ramadan is a month where the pace of life is altered and the observance to treatment is difficult because of fasting. Therefore there is an urgent need of pre Ramadan consultations to prevent decompensation and review work schedules to improve worker's efficiency. The peak of accidents and attacks coincides with the time of breaking the fast, it can be explained by the lack of vigilance and tolerance generated by food and toxic deprivation for some people so awareness programs can be introduced in order to improve the vigilance of the people to limit carelessness accidents and also road accidents.

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RE- ATTENDERS TO THE EMERGENCY DEPARTMENT OF A MAJOR URBAN HOSPITAL SERVING A POPULATION OF 290,000

benjamin Ramasubbu, Bryan Lee, Niamh Collins
Emergency Medicine, Connolly Hospital, Blanchardstown, Dublin, Ireland

Corresponding author: ramasubb@tcd.ie

Keywords: Re-Attender, Frequent Attender, Clinical Quality Indicators

Introduction

A re-attender was defined as any patient representing to the Emergency Department (ED) within 28 days with the same presenting complaint. The threshold most commonly used to define a frequent attender is any patient presenting greater than or equal to four times in the previous year. A recent study within the ED at Connolly Hospital found that

0.4% of patients made up 4% of attendances within a 1 year period thus, showing that re-attenders have a considerable effect on departmental workload and waiting times. The College of Emergency Medicine in the UK state that the rate of unplanned re attendance is a clinical quality indicator and recommend a re-attendance rate of 1-5%.

Aims

This audit was undertaken to investigate patient factors contributing to re-attendance.

Methods

A retrospective, electronic patient record audit was carried out on all re-attenders to Connolly ED during November 2012. Inclusion criteria: All adult patients who represented to the emergency department within 28 days with the same presenting complaint. Data was recorded on Excel and tests of significance for categorical data were calculated using X2 (Chi-squared test).

Results

There were 2919 attendances in Nov 2012 made up from 2530 patients; 230 patients re-attended a total of 389 times. There was no significant difference in gender; 110 (48%) female, 120 (52%) male ($p=0.5$). One hundred re-attenders (43%) were between 20-40 years, 64 (28%) were aged 40-60 and 60 (26%) >60 years.

At first attendance ($n=230$), 49 (21%) did not wait to be seen (DNW), 88 (38%) were referred to in house medical speciality teams (R/F) and 93 (41%) were discharged by ED staff. At second attendance ($n=230$), 16 (7%) DNW, 118 (51%) R/F and 96 (42%) discharged by ED staff. There was no significance between the number of patients referred for specialist opinion between the 1st and 2nd attendance ($p=0.2$) however, patients were significantly more likely to be admitted on second attendance than first as a re-attender ($p<0.01$).

Of the cohort of patients that were initially discharged by ED staff at first attendance who re-attended ($n=93$): 56 (57%) were discharged again by ED staff at second attendance, 36 (39%) were referred and 4 (4%) did not wait to be seen. Of those referred, 9 (25%) were discharged and 27 (75%) were admitted.

53% of re-attenders presented between 8am and 4pm Mon – Sun. 19% of patients who re-attended presented between midnight and 8am on initial presentation.

Frequent Attenders

Of the Frequent attenders ($n=63$), that is those who attended more than 4 times in one year: 27 (43%) were discharged at first attendance, 15 (24%) were referred to a speciality and admitted, 19 (30%) did not wait to be seen and 2 (3%) refused admission. At second attendance 26 (41%) were discharged, 27 (43%) were admitted, 8 (13%) did not wait to be seen, 1 (2%) refused admission and 1 (1%) died in the department.

Frequent attenders were significantly less likely to be discharged than non-frequent attenders at first and second attendances ($p=0.01$, $p=0.02$) however, there was no significant difference in the admission rates of frequent and non-frequent attenders at first and second attendance ($p=0.09$, $p=0.43$).

Frequent attenders were significantly more likely to be admitted at second attendance than at first ($p=0.02$).

Conclusions

Re-attendances made up 13% (389/2919) of attendances in this one month audit. As re-attenders were significantly more likely to be admitted on second attendance than first ($p < 0.01$) it must be investigated as to whether this was due to worsening pathology, missed clinical diagnoses or fear of missed diagnoses leading to overly cautious admissions? Additionally, 25% (57/230) of patients 'did not wait' until full ED completion of their care at first attendance (significantly higher than the number at second attendance ($p < 0.01$)). This suggests that departmental factors such as staff levels, overcrowding and long waiting times may need to be examined to determine their role in to re-attendance rates.

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REVISITS WITHIN 48 HOURS TO EMERGENCY DEPARTMENT OF THAI TERTIARY CARE HOSPITAL.

Jiraporn Sri-on (1)

1. Emergency department, Bangkok metropolitan university, Vajira hospital, Bangkok, Thailand

Corresponding author: jiraporn.rew@gmail.com

Keywords: revisit, emergency department, misdiagnosis

Background: It can be assumed that insufficient evaluations or treatments were given if the patients returned to the emergency department (ED) soon after been seen.

Objective: This study was initiated with the purpose of ascertaining causes and factors of revisits

Methods: This study was retrospective, observational chart review and administrative database at one tertiary care, urban hospital from October 1, 2009 through September 31, 2010. We identified patients who returned to the ED within 48 hours after their initial discharge. The underlying causes for their revisits were extracted into three categories'. Doctor related, illness and patients related was determined by three emergency physicians.

Result: Our study includes total 172 ED patients' charts. 86(50%) were men and 86(50%) were women. The mean age was 38 ± 5.6 (SD) years. The rates of revisits linked to factors such as doctors, illnesses and patients amounted to 86(50.0%), 61(35.5%) and 25(14.5%) respectively. Among the factor of doctors related 40 (46.5%) patients were due to misdiagnosis, 36 (41.8%) patients were suboptimal management. The most common recurring presentation were abdominal pain 69 (40.1%) patients, fever 27 (15.7%) patients and shortness of breath 25(14.5%)patients.

Conclusion: Misdiagnosis and suboptimal management by appears to contribute to half of the repeat visits of ED patients seen within 48 hours. It is important to identify potential in the quality of care among revisit patients.

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Pre-Hospital/EMS 3, Transportation, and Toxicology

ROLE OF A TRAUMA SPECIFIC COORDINATION CENTER IN AN EMERGING STATEWIDE TRAUMA SYSTEM

James Graham (1), R. Todd Maxson (2), John Recicar (3), Steven Shirm (1)

1. Pediatrics, University of Arkansas for Medical Sciences, Little Rock, United States

2. Surgery, University of Arkansas for Medical Sciences, Little Rock, United States

3. Surgery, Arkansas Children's Hospital, Little Rock, United States

Corresponding author: shirmstevenw@uams.edu

Keywords: Scene-to-hospital transfer, Hospital-to-hospital transfer, Trauma coordination center

Introduction

In order for a trauma system to perform at an optimal level, the transport of patients must be appropriately coordinated. The recently created trauma system in the U.S. state of Arkansas has established a trauma specific coordination center to assist emergency medical services (EMS) and hospital providers in determining the closest trauma center with available resources to appropriately care for patients with serious injuries. Prior to the implementation of the Arkansas Trauma Call Center(ATCC), paramedics and emergency physicians were unable to quickly assess which referral center had available resources to care for an injured patient. A pre-trauma system survey of trauma care providers in the state indicated that delays in acceptance of seriously injured patients were a common occurrence.

Methods

A retrospective review of the performance of the ATCC was performed. The review included all patient transports coordinated by ATCC over a two year period. The study included both scene-to-hospital and hospital-to-hospital transfers. Mean times to decision and disposition for hospital-hospital transfers were examined.

Results

In 2011, ATCC coordinated 5,458 hospital-to-hospital transfers and 8,189 EMS scene calls. ATCC coordinated 6,363 hospital-to-hospital transfers and 11,797 EMS scene calls in 2012. For hospital-to-hospital transfers, mean time from patient arrival at the initial emergency department until the provider contacted the ATCC requesting transfer varied from 55 minutes to 108 minutes depending on injury severity. Time from call to ATCC until patient acceptance at the appropriate referral center varied from 6 minutes, 15 seconds to 9 minutes, 6 seconds depending on injury severity.

Conclusion

The implementation of a centralized trauma coordination center has resulted in remarkably short times for identification of an appropriate trauma center with available resources and acceptance of these patients by

that facility. Given that severe injury is a time sensitive condition, this coordination is likely to result in better patient outcomes.

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Pre-Hospital/EMS 3, Transportation, and Toxicology

PROFILE OF PATIENTS ADMITTED IN ICU AFTER A STAY IN THE EMERGENCY ROOM.

Riadh Tfiha (1), Didier Honnart (1), Marc Freysz (1)
1. Emergency department, University Hospital Center Dijon, DIJON, France

Corresponding author: riadh.tfiha@gmail.com

Keywords: Emergency, prehospital, medical dispatching center

INTRODUCTION AND PURPOSE: It has been shown that pre-hospital medical care of critical ill patients is associated with a reduction in mortality (1,2). The transportation mode of these patients to emergency room (ER) and later admitted in ICU is variable: by themselves, simple ambulance, fire brigade and emergency physician staff team (SMUR). The purpose of the study is to evaluate the transportation mode of these patients and to determine the profile of patients brought to ER by a no prehospital medical management following the decision of the prehospital dispatching center (SAMU) and who will be admitted later in ICU.

METHODS: Over a period from June to September 2012, we study prospectively all the patients who called the prehospital medical dispatching center (SAMU) and later admitted in ICU after a stay in ER. Principal endpoints are the age, initial symptomatology, length stay in ER, final diagnosis and 30-day mortality, according to transportation mode. For statistical analysis, Chi2 test and Student test analysis were performed. $P < 0.05$ was considered as significant.

RESULTS: 201 patients included in this study. No prehospital management concern 110 patients (54.7%): 45 (41%) by fire brigade, 64 (58%) by simple ambulance and one (1%) by himself. These patients are more older (71 ± 12 years vs 62 ± 22 , $p = 0.001$) and stay more in ER (317 ± 196 minutes vs 249 ± 183 , $p = 0.013$) than patients having a prehospital management. Reasons of call to medical dispatching center are different between two groups (dyspnea, chest pain, faintness and weakness for patients receiving basic pre hospital management, chest pain, disorders of consciousness and traffic accidents for the other group). Principal diagnoses are acute coronary syndrome (18%) severe sepsis (15%) and acute exacerbation of the COPD (14%) for patients having no prehospital management, acute coronary syndrome, cerebral hemorrhage and blunt trauma for the other group. There is no difference in the 30-day mortality regarding the arrival mode to the ER ($p = 0.52$).

CONCLUSION: This study suggests that patients who have no prehospital management are older and stay more in ER. Transportation mode does not affect the mortality

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Pre-Hospital/EMS 3, Transportation, and Toxicology

RETROSPECTIVE EVALUATION OF MEDICAL ACTIVITY OF THE CIVIL SECURITY HELICOPTER (DRAGON)

Maïca Gimmig (1), Alexis Ferrière (2), Patrick Benner (1), François Topin (1)

1. Pre-hospital, Bataillon des Marins Pompiers de Marseille, Marseille, France

2. Pre-hospital, Hôpital Timone, Marseille, France

Corresponding author: maicagimmig@yahoo.fr

Keywords: medical activity of helicopter, Civil Security helicopter, Dragon

Introduction : Helicopters have been used for primary medical rescue for more than 50 years. The goal of this study was to assess the emergency medical activity of the Civil Security Base helicopter (Dragon) and point out its specificities.

Material and method : Retrospective observational study of the medical activity of Dragon from January to December 2011.

Results : Over the year 2011, 444 interventions were recorded, of which 86.4% were primary interventions. Dragon activity was more important during the spring and summer, on week-ends (1.5 flight per day Vs 1 on week days) and during day time (83% of daylight flight). The mean intervention duration was 1h48mn. Rescues in particular settings (cliffs, islands, sea, mountains) represented more than a third of the activity. The winch was used for 26.6% of the interventions with a mean of 3.26 winchings per intervention. The physician was winched down in 74% of the operations. Mean patient age was 45.2 years, with a sex ratio of 2/1. Trauma patients represented two thirds of the interventions due first to leisure incidents and second to car accidents. The most frequent cases were : polytrauma ($n = 73$), lower limb injuries ($n = 58$), neurotrauma ($n = 34$). Medical disorders encountered were mainly cardiovascular ($n = 45$) or neurological ($n = 35$). Patients transport was under medical surveillance in 70% while 14% did not require any physician. Patients who were not transported were either proo

Unced dead at scene (5.3%) or did not need further care (5.7%). At the hospital, 43% of the patients were admitted in the emergency ward, 23% in the general intensive care unit and 4% in the cardiologic intensive care unit.

Discussion : The expected benefits of helicopter emergency medical rescue were obtained: short intervention delay, accessibility in particular settings, critical patients requiring specific care. Physicians should be trained for winching and multivictim situations.

Conclusion : The specificities of helicopter emergency medical interventions are therefore : the hostile settings

(40%), the use of the winch (26%) and the high proportion of patients suffering polytrauma or requiring specific care (31%).

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Pre-Hospital/EMS 3, Transportation, and Toxicology

IS THERE A RELATION BETWEEN HEALTH INSURANCE STATUS AND WAYS OF TRANSPORTATION TO THE EMERGENCY DEPARTMENT ?

Kurt Anseeuw (1), Greet Dieltiens (1), An Van Schaeren (1)

1. *Emergency Department, ZNA Stuivenberg, Antwerp, Belgium*

Corresponding author: kurtanseeuw@yahoo.com

Keywords: socio-economic status, transportation, health insurance

INTRODUCTION: Patients with lower socio-economic status tend to present more often to emergency departments (ED) than patients with higher socio-economic status. We wonder if this vulnerable group uses different transportation ways than the general ED-population.

METHODS: A retrospective analysis of the dataset of all attendances to an urban emergency department in 2012 was performed. The following information was recorded: date, hour of attendance, referral, way of transportation, age, sex, address, health insurance status and disposal.

RESULTS: During the year 2012 were 31223 patients treated at the emergency department. There were no address data for 59 (0,18%) patients, suggesting they were homeless, of which 3 (5,08%) had a valid health insurance and 56 (94,92%) had no valid health insurance. 869 (2,79%) patients had an address abroad, while 440 (50,63%) of them had a valid health insurance and 429 (49,37%) had no valid health insurance. 30292 (97,03%) patients had a Belgian address. 26870 (88,70%) of them had a valid health insurance, and 3422 (11,30%) had no valid health insurance.

In general we found that 54.24 % of the homeless, 34.06% of the patients with a foreign address and only 25.88% of the Belgian residents were transported by EMS to the ED. The remainder come by their own means.

Of the homeless patients with a valid health insurance was 1 (33.33%) transported by Emergency Medical Services (EMS), and 2 (66.67%) without EMS. Of the homeless patients without a valid health insurance were 30 (53.57%) transported by EMS, and 26 (46.43%) without EMS. 128 (29.09%) patients with a foreign address and a valid health insurance were transported by EMS, where 312 (70.91%) were transported without EMS. Of the patients with a foreign address and without a valid health insurance were 168 (39.16%) transported by EMS, and 261 (60.84%) without EMS (8 being referred by a primary care physician). Of the patients with a Belgian address and a valid health insurance were 6641 (24.72%) transported by EMS, and 20229 (75.28%) without EMS. 1199 (35.04%) patients with a Belgian address and without a valid health insurance were

transported by EMS, while 2223 (64.96%) were transported without EMS.

Logistic regression analysis demonstrated that patients with a foreign address were 1.48 (95% CI: 1.28; 1.71) more likely, and homeless patients 3,39 (95% CI: 2.03; 5.67) more likely to be transported by EMS than Belgian patients. If we control these findings for the health insurance status, than are patients with a foreign address 1,22 (CI: 1.05; 1.41) more likely, and homeless people 2.26 (CI: 1.35; 3.79) more likely to be transported by the EMS than patients with a Belgian address. Patients with no valid health insurance are 1.64 (CI: 1.52; 1.76) more likely to come to the hospital by EMS than patients with a valid health insurance.

DISCUSSION: All Belgian residents are insured by an universal health insurance, if they are domiciled in Belgium and pay a small contribution. 40% of the patients with no Belgian address and no Belgian health insurance are transported by the EMS to the ED, whereas only 30% of the patients with no Belgian address but with a valid health insurance are transported by the EMS. Of the Belgian residents without a valid health insurance 35% are transported by the EMS, whereas 24% of the Belgian residents with a valid health insurance are transported by the EMS. This indicates that people without coverage by the health insurance use more often the EMS than those covered by the health insurance.

CONCLUSION: Patients without a valid health insurance are more often transported by EMS to the ED than patients with a valid health insurance. This tendency is even more pronounced when they have a lower socio-economic status (no health insurance, no address in Belgium).

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Pre-Hospital/EMS 3, Transportation, and Toxicology

VALIDATION OF A SCORE HELPING TO DECIDE MEDICAL ESCORT FOR INTERHOSPITAL TRANSFER OF PATIENTS WITH NON-ST ELEVATION MYOCARDIAL INFARCTION

Isabelle Fiancette (1), Anne-caroline Goze (1), Agnaly Desplantes (1), Catherine Pradeau (2), Eric Tentillier (2), Frederic Casassus (1), Benjamin Seguy (1), Warren Chasseriau (1), Pierre Coste (1), Michel Thicoipe (2), Lionel Leroux (1)

1. *Cardiology, CHU de Bordeaux, Bordeaux, France*

2. *SAMU, CHU de Bordeaux, Bordeaux, France*

Corresponding author: lionel.leroux@chu-bordeaux.fr

Keywords: medical escort for interhospital transfer, non-ST elevation myocardial infarction, score validation

Background

Request of medical escort for interhospital transfer for patients suffering from non-ST elevation myocardial infarction (NSTEMI) is very frequent. However, only few patients are at risk of complication during transport to the catheterization laboratory and a systematic medicalization would be time and money consuming. Currently, no score

exists in the aim to help the coordinator to make this choice. That's why, based on a retrospective study, we built a score to select only patients who need high level of medical assistance during transfer. This score has now to be prospectively validated.

Method

In the goal to build and test a helping score for the decision of medical escort for NSTEMI patients, we conducted a retrospective study involving 183 patients to identify predictive factors of event justifying an accompanying physician on board. Only 12 patients (6.6%) necessitated a medical escort but 55% were accompanied by a doctor. The tested predictive factors have been: age less than 60 years or above 75 years, prior known cardiovascular disease, number of cardiovascular risk factors, time between beginning of the symptoms and the call, time between the end of the symptoms and the call, ECG and cardiac monitoring data, systolic blood pressure, signs of cardiac failure and ongoing treatment. We applied a weighting coefficient to each factor, so the calculation of the score provided a number between 0 and 30. We retrospectively determined percentage of involved patients and negative predictive value (NPV) for different cut-off. With a cut-off at 8, we selected 48% of the patients with a NPV calculated at 98.95%, which was the best efficiency/safety ratio. To prospectively validate this score we built an easy-to-use software. Moreover, the coordinator is free of his decision. After prospectively enrollment, a phone contact is applied few days later to assess events occurred during transport.

Results

For the time being, 15 patients have been enrolled. The score is at 8 or above for 6 of them (40%). All except one were medicalized. In return, 3 of the 9 patients with a score less than 8 have been medicalized. Among these first 15 patients, only one experienced an event justifying the presence of a physician during transport (chest pain). His score was calculated at 9 and a physician was on board.

Conclusion

Save time and money while maintaining a good level of safety is an ongoing priority. A score for selection of high-risk patients justifying medical escort after NSTEMI would be very useful for this purpose. These preliminary results are encouraging but further inclusions are necessary to valid the score.

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Pre-Hospital/EMS 3, Transportation, and Toxicology

THE QUALITY OF INTER FACILITY TRANSFER FOR CRITICALLY ILL PATIENTS, SUNPASITHIPRASONG HOSPITAL, UBONRATCHATHANEE

Wimonwan Phonburee, Prapaporn Suwaratchai, Chaiyaporn Boonsri, Sunee Techathanachai

Emergency Deapartment, Sunprasitthiprasong Hospital, Ubonratchathani, Thailand

Corresponding author: suwaratchai@yahoo.com

Keywords: Inter facility transfer, Critical ill, risk

Background

Critically ill patient outcomes depend on expertise of medical personnel within health care system. Transfer of critically ill patients is intended to improve prognosis and outcome and the ultimate goal of transfer is safety and should not increase risk. The patients were care same as intensive care and the patient was cared in ambulance that call Mobile ICU Ambulance. The objective of this study is to evaluate the quality of inter facility transfer for critically ill patients.

Method

Retrospective descriptive study of the critically ill patient transports conducted between June and September 2012. Immediately after arrival, data were collected: patient's demographics, blood pressure, heart rate, oxygen saturation, oxygen saturation, blood glucose, error /adverse event. Severity of each adverse event was recorded to 5 categories: Extreme, Major, Moderate, Minor and Insignificant. Data were collected by receiving hospital nurse and analyzed.

Results

Total 2,362 patients requiring inter facility intensive care transfer were evaluated. Forty-four per cent of patients were mechanically ventilated. Adverse events occurred in 10.83% of transfers, incidence of airway management was 43.46%, incidence of respiratory, circulatory insufficiency was 18.69%, 42.90% and high alert drug incidence was 3.21%. Of 224 adverse events, 69.14 % were moderate severity, 21.88% were mild and 6.70 % were major.

Conclusion

Safety was the most important issue for critically ill patients. The patient was care same intensive care and adverse event was 10.83 % and severity was moderate. Further improvement was reduced adverse event by risk matrix and management.

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Pre-Hospital/EMS 3, Transportation, and Toxicology

CURRENT PATTERNS OF DRUG AND ALCOHOL USE IN A TRAUMA POPULATION

Elisa Chu, Cristobal Barrios, Jacqueline Pham, Allen Kong, Matthew Dolich, Nicole Bernal, Michael Lekawa
Trauma Surgery, University of California Irvine Medical Center, Orange, United States

Corresponding author: jacquekp@uci.edu

Keywords: trauma, toxicology patterns, management and prevention

INTRODUCTION: There is a known association between drug and alcohol (EtOH) use in the trauma population. It is important to be aware of the drug and EtOH use of trauma patients to improve management and prevention. With new drugs becoming popular and accessible, older studies showing a preference for marijuana (THC) may be

inaccurate. We sought to illustrate the changing drug screen profile of trauma patients and to characterize the relationship between EtOH and drug use. We hypothesized that patients positive for EtOH would be older than patients positive for drugs, that drug and alcohol use would commonly co-exist and physiology would be altered.

METHODS: We collected urine toxicology and blood EtOH results, prospectively when possible, from all trauma patients ≥ 14 years old (6707) who were admitted to our Level I Trauma Center during a 3 year period. EtOH levels ≥ 20 mg/dL were considered positive. Patient's age, heart rate, and Glasgow Coma Scale (GCS) were also noted.

RESULTS: A total of 6232 (92.9%) patients underwent EtOH screenings while 5318 patients (79.3%) underwent drug toxicology screenings. There was no mean age difference (34 vs 36) between those positive for EtOH [1714 (27.5%)] vs. drug use [1740 (32.7%)]. 502 patients (29.3% of EtOH+, 28.9% of tox+) were positive for both EtOH and drugs. Amphetamine users were most likely to be tachycardic. The most prevalent drugs were opiates, THC, amphetamines and benzodiazepines. Only THC and phencyclidine were significant in younger patients.

CONCLUSION: Our study indicates that age is not a determining factor for suspicion of EtOH vs. drug use and that drug use is more prevalent in patients with mildly altered physiologic or mental states. While overall drug rates were comparable, drug preference does vary by age, with THC and phencyclidine prevalent in younger patients and prescription drugs in older patients. In addition, patients were more likely to be positive for EtOH or drugs than they were for both. When evaluating trauma patients of any age, including the elderly, with altered mental status, the suspicion of EtOH, drugs (prescription or recreational), or both must be taken into account.

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Pre-Hospital/EMS 3, Transportation, and Toxicology

INTRAVENOUS LIPID EMULSION FOR TREATMENT OF TRICYCLIC ANTIDEPRESSANT TOXICITY A RANDOMIZED CONTROLLED TRIAL

Fatemeh Hosseini kasnavieh (1), Mohammad Hosseini kasnavieh (2), Soudabeh Jalali Nodoushan (3), Niloofar Abazarian (4), Hamed Basir Ghafouri (5), Behnam Movahedi (6), Omid Yahyaza (7), Amir Molaeifar (8)

1. *Psychiatry, Yazd/Shahid Sadoughi of Medical Sciences, Yazd, Iran, Islamic Republic of*

2. *Emergency departman, TUMS-IUMS, Tehran, Iran, Islamic Republic of*

3. *Emergency departmant, TUMS-IUMS, Tehran, Iran, Islamic Republic of*

4. *Emergency department, TUMS, tehran, Iran, Islamic Republic of*

5. *Emergency departman, IUMS-TUMS, tehran, Iran, Islamic Republic of*

6. *emergency department, IUMS, tehran, Iran, Islamic Republic of*

7. *Psychiatry, kish hospital, kish, Iran, Islamic Republic of*

8. *Emergency departman, TUMS.IUMS, Tehran, Iran, Islamic Republic of*

Corresponding author: mhoseini1346@gmail.com

Keywords: intralipid, Tricyclic antidepressants, TCA toxicity

Introduction: Tricyclic antidepressants are one the major causes of drug toxicity, and they can cause severe damage to cardiovascular and neurologic system. There has been some evidence which shows that intravenous lipid emulsions can effectively reverse TCA toxicity. This evidence is limited to some experimental animal studies and some case reports, so this study is the first randomized controlled trial on this issue.

Methods: from February 2012 to July 2012 all patients with severe TCA toxicity who were eligible according to our exclusion and inclusion criteria and attended Loghman Hospital (a referral toxicology center) were randomly divided to intervention and control groups. The control group received the standard treatment with bicarbonate and the intervention group received standard treatment plus intravenous lipid emulsion. The outcomes which were compared in the two groups were time that EKG becomes normal, the time that systolic BP got over 90 in hypotensive patients, number of hospitalization days, mortality and disabilities at the end of hospitalization.

Results: 108 patients entered the study and divided to 54 interventions and 54 controls. Only one of the patients died during the time of follow up; he belonged to control group and died because of ventricular dysrhythmia at the 5th day of hospitalization. No statistically significant difference was observed at the two groups for time needed for EKG changes reversing however the evaluated time was 20 minutes shorter in intervention group. As well no statistically significant difference has been observed between the two groups for BP at the time of EKG reversal and days of hospitalization. No adverse reaction occurred to intralipid treatment which led to death or discontinuation of treatment.

Discussion: since this study is the first one of its kind we cannot have a head to toe comparison with the previous studies. However animal experimental studies and case reports, which were all conducted in patients who did not respond to standard treatment, showed benefits for intralipid therapy, we did not observed any significant change in outcomes of TCA toxicity in patients who received intralipid as a part of initial treatment.

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Pre-Hospital/EMS 3, Transportation, and Toxicology

ABUSE OF ENERGY DRINKS AMONG YOUNG PEOPLE: EXPERIENCE OF THE PAVIA POISON CONTROL CENTER

Eleonora Buscaglia (1), Francesca Chiara (1), Andrea Giampreti (2), Carlo Locatelli (1), Davide Lonati (1), Valeria Petrolini (1), Claudia Rimondo (3), Catia Seri (4), Giovanni Serpelloni (5)

1. Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy
2. Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy
3. Department of Antidrug Policy, Presidency of the Council of Ministers, Rome, Italy, Rome, Italy
4. Presidency of the Council of Ministers, Rome, Italy, Department of Antidrug Policy, Pavia, Italy
5. Department of Antidrug Policy, Presidency of the Council of Ministers, Rome, Italy, Pavia, Italy

Corresponding author: davide.lonati@fsm.it

Keywords: energy drinks, abuse, toxicity

Objective: Abuse of energy drinks among young people, often in combination with alcohol or other substances, is a worrying and growing concern in Europe and the United States. The energy drinks, generally non alcoholic, contain mainly caffeine (80-200 mg) and other substances such as taurine, guarana, ginseng, yerba mate, ginko biloba, creatine, L-carnitine, glucuronolactone, sugars, antioxidants, vitamins. Consumers are often unaware of the potential health hazards. The aim of the study was to describe all cases of energy drink abuse referred to the Pavia Poison Control Center (PPC) and the clinical effects presented in these intoxications.

Methods: A retrospective analysis of all cases of acute poisoning related to ingestion of energy drinks in the period between 1 January 2007 and 30 June 2012 referred to the PPC was performed. Age, medical history, any co-consumed substances and the clinical picture were evaluated.

Results: Twenty-four cases were included (20 male; mean age 26.5 years). In 12 cases, the energy drink was ingested for the purpose or abuse, in combination with alcohol (7/12) and other drugs of abuse (4/12). In 6 other cases the energy drink has been used with a stimulant aim; in 4 cases for the purpose of suicide (together with medications) and accidentally in 2 cases (children aged 6 and 7 years). The symptoms most frequently presented on admission were: psychomotor agitation (46%), tachycardia (33%), vomiting (25%), palpitations (21%) and gastric pain (17%). Other reported signs of intoxication were mydriasis, confusion, drowsiness, hallucinations, delirium, fainting, high blood pressure, nausea, tremors, dyspnea, fever, flushing, headache, malaise, rhabdomyolysis, myoclonus, diaphoresis and motor incoordination. All patients fully recovered in a few hours with the exception of a young woman who died, after developing acute heart failure, and who was suspected to have taken slimming products, caffeine in large amounts and beta blockers.

Conclusions: The abuse of energy drinks should be suspected in patients, especially young people, who present to the emergency department with agitation and tachycardia. The ingestion may be associated with the abuse of alcohol and drugs of abuse.

Acknowledgements: Study performed with a grant from the Department of Antidrug Policy, 2012.

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CPR/Resuscitation

END TIDAL CARBON DIOXIDE AND AMPLITUDE SPECTRAL AREA AS NON-INVASIVE MARKERS OF CORONARY PERFUSION PRESSURE AND ARTERIAL PRESSURE IN A PORCINE MODEL OF CARDIAC ARREST

Nicolas Segal (1), Jennifer Rees (2), Lara India (2), Tim Matsuura (2), Scott Mcknite (2), Laura Puertas (2), Patrick Plaisance (1), Demetris Yannopoulos (2), Keith Lurie (2)

1. Emergency Department, Hôpital Lariboisière, Paris, France
2. Departments of Medicine-Cardiovascular Division, University of Minnesota, Minneapolis, United States

Corresponding author: dr.nicolas.segal@gmail.com

Keywords: AMSA, ETCO2, Resuscitation

Objective:

Amplitude Spectrum Area (AMSA) values during ventricular fibrillation (VF) correlate with myocardial energy stores and predict defibrillation success. By contrast, end tidal CO₂ (ETCO₂) values provide a non-invasive assessment of circulation during cardiopulmonary resuscitation (CPR). In an effort to develop an improved non-invasive means to determine the optimal time to deliver defibrillation during cardiac arrest and CPR, we tested the hypothesis that AMSA and ETCO₂ correlate during three different methods of CPR known to provide different levels of myocardial perfusion.

Methods:

VF was induced in 12 female anesthetized pigs (32±1Kg) followed by 6 minutes untreated arrest followed sequentially by 3 minute periods of standard (S) CPR, S-CPR + an impedance threshold device (ITD), and then active compression decompression (ACD) + ITD CPR. Hemodynamic, AMSA, and ETCO₂ measurements were made with each method of CPR. The Spearman correlation test and Friedman test were used to compare hemodynamic parameters and a Bland and Altman assessment was used to compare ETCO₂ and AMSA values.

Results:

ETCO₂, AMSA, coronary perfusion pressure, cerebral perfusion pressure, systolic aortic pressure, mean aortic pressure were lowest with STD CPR, increased with STD CPR + ITD and highest with ACD CPR + ITD.

Further analysis demonstrated a correlation between AMSA and ETCO₂ (r=0.374, p=0.025) and a correlation between AMSA and key hemodynamic parameters (coronary perfusion pressure, cerebral perfusion pressure, Aortic systolic, diastolic and mean pressure) (p<0.05). The Bland-Altman analysis indicate a strong association between AMSA and ETCO₂.

Conclusion:

Using 3 different methods of CPR, each known to provide different levels of vital organ perfusion in the absence of pharmacological intervention, this study established a firm correlation between ETCO₂ and AMSA. These findings provide the physiological basis for developing and testing a

novel non-invasive method that utilizes either ETCO₂ alone or the combination of ETCO₂ and AMSA to predict when defibrillation be successful.

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CPR/Resuscitation

RESUSCITATION WITH CHEST COMPRESSION SYNCHRONIZED VENTILATION OR INTERMITTENT POSITIVE PRESSURE VENTILATION: INFLUENCE ON GAS EXCHANGE AND ARTERIOVENOUS OXYGEN DIFFERENCES DURING RESUSCITATION AND AFTER RETURN OF SPONTANEOUS CIRCULATION IN A PIG MODEL.

Clemens Kill (1), Tobias Sebastian Imhof (2), Christian Neuhaus (3), Ulrich Palm (3), Elisabeth Boesl (4), Pascal Wallot (5), Oliver Hahn (5), Hinnerk Wulf (2), Wolfgang Dersch (6)

1. Dept of Emergency Medicine, Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany

2. Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany

3. Research and Development, Weinmann Geräte für Medizin GmbH+Co.KG, Hamburg, Germany

4. Dept of Emergency Medicine, Philipps-University, Marburg, Germany

5. Dept of Emergency Medicine, Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany

6. Dept of Emergency Medicine, Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany

Corresponding author: killc@staff.uni-marburg.de

Keywords: resuscitation, chest compressions, mechanical ventilation

Objective:

The major goal of resuscitation is the delivery of oxygen to all vital organs. Therefore, both perfusion and gas exchange should be optimized. Our aim was to investigate the influence of resuscitation by applying the novel ventilator mode Chest Compression Synchronized Ventilation (CCSV)[1] to a pig model.

We compared the effects of the novel mode with the recommended standard Intermittent Positive Pressure Ventilation (IPPV) [2,3] on gas exchange and acid-base-state during resuscitation and in the early period after return of spontaneous circulation (ROSC).

Methods:

After approval by local authorities 44 pigs underwent anesthesia with endotracheal intubation. Three minutes after induction of ventricular fibrillation (t=0 min) continuous chest compressions were started and the animals were mechanically ventilated either with IPPV (FiO₂ 1.0, tidal volumes 7ml/kg, respiratory rate 10/min, PEEP=0mbar) or CCSV, a pressure-controlled and with each chest compression synchronized breathing pattern. CCSV is designed to insufflate a pressure controlled gas flow (FiO₂ 1.0; P_{insp}=60mbar) triggered by the beginning of each passive expiration that is caused by each chest compression

(comparable to an inverse pressure support ventilation). The insufflation with a fixed inspiratory time of 265ms stopped before chest decompression began. Accompanying measures: Epinephrine 1mg iv at t=8min, vasopressin 0.8IU/kg iv at t=11 min, defibrillation at t=13min. Following ROSC, ventilation was changed to a pressure controlled mode with FiO₂ 0.4, tidal volume 7ml/kg and a respiratory rate of 10/min in both groups. Blood gas samples were drawn after 8 min and 12min during CPR from all animals and at t=15min and t=23min from those pigs achieving ROSC after a single defibrillation at t=13min. Arterial oxygen saturation (SaO₂), mixed venous oxygen saturation (SvO₂), arteriovenous oxygen difference (avDO₂) and arterial base excess (BE) were measured. Statistical analysis was performed by U-test, and results were presented as median (25%/75%percentiles). P<0.05 was considered to be significant.

Results:

1.) During CPR (CCSV vs. IPPV): t=8min SaO₂ 100% (99/100) vs. 93% (78/98), p<0.0001; SvO₂ 27% (18/42) vs. 21% (12/27), p=0.0189; avDO₂ 11.5ml/dl (9.3/13.3) vs. 10ml/dl (9/12.1), p=0.25; BE 1.2 (-0.5/2.7) vs. -1.2 (-1.8/0.6), p=0.005.

t=12 SaO₂ 100% (98/100) vs. 97% (80/99), p=0.001; SvO₂ 19% (11/30) vs. 21% (10/19), p=0.15; avDO₂ 13.1ml/dl (11.5/15) vs. 11.4ml/dl (9.6/13.2), p=0.0325; BE -1.2 (-3.5/-0.5) vs. -3 (-7/-0.85), p=0.002.

ROSC was achieved after the single defibrillation at t=13min in 22 pigs (CCSV n=11, IPPV n=11).

2.) "ROSC after defibrillation at t=13min" (CCSV vs. IPPV): t=15 min SaO₂ 99% (93/100) vs. 98% (94/100), p=0.57; SvO₂ 35% (29/36) vs. 16% (14/25), p<0.0001; avDO₂ 10,3ml/dl (9.8/11.3) vs. 13ml/dl (10.9/13.9), p=0.027; BE -2.5 (-5.3/-0.5) vs. -4.5 (-9.5/-2.2), p= 0.07. t=23min SaO₂ 99% (96/100) vs. 99% (98/100), p=0.06; SvO₂ 35% (32/37) vs. 18% (14/22), p<0.0001; avDO₂ 9.4ml/dl (8.7/10.5) vs. 14.3ml/dl (11.4/14.7), p=0.0014; BE -5.3 (-6.9/-3.8) vs. -6.9 (-10/-6), p=0.14.

Conclusions:

Resuscitation with Chest Compression Synchronized Ventilation (CCSV) led to higher arterial oxygen saturation and base excess during resuscitation compared with Intermittent Positive Pressure Ventilation (IPPV). In the early ROSC period mixed venous oxygen saturation was higher and avDO₂ lower in the CCSV group compared with the IPPV group. These findings can be interpreted as a sign of an improved perfusion and tissue oxygen delivery following resuscitation using Chest Compression Synchronized Ventilation (CCSV) [4].

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CPR/Resuscitation

MEASUREMENT OF CHEST COMPRESSION INTERRUPTIONS DURING MANAGEMENT OF OUT-

OF-HOSPITAL CARDIAC ARREST: PRELIMINARY RESULTS.

Benoît Frattini (1), Olga Maurin (2), Noémie Galinou (2), Nicolas Genotelle (1), Pascal Dang Minh (1), Sabine Lemoine (3), Vincent Lanoë (4), Frédéric Lemoine (1), Daniel Jost (4), Jean Pierre Tourtier (2), Laurent Domanski (5)

1. Emergency dépt, Paris Fire Brigade, Paris, France
2. Emergency Dept, Paris Fire Brigade, Paris, France
3. Emergency dépt, Paris Fire Brigade, Paris, France
4. Emergency Dépt, Paris Fire Brigade, Paris, France
5. Emergency Dept, Paris Fire Brigade, Paris, France

Corresponding author: daniel.jost2@wanadoo.fr

Keywords: Cardiac arrest, cardiopulmonary resuscitation, hands-off-time

Introduction. During treatment of Out-of-Hospital Cardiac Arrest (OHCA), interruptions of chest compression (CC) are multiple and impact the final prognosis. Some Out-of-Hospital Medical Emergency Teams use Automated Chest Compression Devices (ACCD). The switch from manual to Automated Chest Compression is one of the reasons for discontinuation of CC. The aim of this study was to measure the time intervals (Ti) of CC discontinuation, concomitant with External Electric Shocks (EES) and ACCD setup.

Materials and methods. This was a prospective observational study. The electrocardiographic (ECG) signals and the Thoracic Impedance Variation (TIV) were recorded by the Out-of-Hospital Emergency Teams using a specific software. TIV enables measurement of time intervals of chest compression interruption. The Inclusion criteria were : OHCA over 18 years, who were shocked and received first manual chest compression and then a switch from manual to automated chest compression. The main collected data were : Ti pre- and post- shock, Ti related to ACCD setup. In practice, ACCD needed setup of a dorsal support component (first) and a ventral component (secondly). The patients were classified in terms of ACCD setup in 1 or 2 time periods (groups 1 and 2).

Results. From 01/01/2012 to 31/10/2012, 54 patients were included. The results report a median pre shock CC interruption = 4 seconds (Interquartile : [2-20]), a median post shock CC interruption = 3.9 seconds [3-5.3]; Concerning the ACCD application (n=5), it generated median CC interruption = 27 seconds [24-34] when the device was set up in 1 time. When the ACCD was set up in 2 times, the dorsal support manipulation needed median CC interruption = 17 seconds [10-21] and the ventral component needed median CC interruption = 9.7 seconds [8.6-15].

Discussion. While the pre- and post-shock time interval of chest compression discontinuation were those reported in the literature, this was the first study to measure the chest compression interruption related to ACCD application. This preliminary study is ongoing.

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CPR/Resuscitation

THE EFFECT OF FEEDBACK ON THE ADEQUACY OF CHEST COMPRESSIONS PERFORMED BY EMERGENCY DEPARTMENT STAFF - A PROSPECTIVE OBSERVATIONAL STUDY.

Oliver Bannon

Emergency Department, Royal Victoria Hospital, Belfast, Northern Ireland

Corresponding author: Ollybannon@yahoo.co.uk

Keywords: Chest compressions, Resuscitation, Feedback

Background: Cardiac Arrest is a common occurrence in the Emergency Department. Immediate provision of high quality, minimally interrupted compressions are imperative in order to perfuse vital organs and improve chances of successful defibrillation being performed. Recent changes to resuscitation guidelines place greater emphasis on the delivery of consistent high quality and minimally interrupted chest compressions. Unfortunately, there is evidence that manual chest compressions are regularly performed poorly by manual providers.

Aims: To measure the quality of manual chest compressions delivered by Emergency Department staff and to identify if provision of feedback is related to an improvement in the quality of their chest compression delivery.

Methods: This was a prospective observational study. The study population was a convenience sample of 29 staff of a large urban Emergency Department. Participants performed 2 minutes of continuous chest compressions on a 2010 guideline compliant manikin. During these compressions participants wore a purpose designed strap containing a smartphone which was equipped with a pocket CPR application. This application incorporates an accelerometer to measure chest movement during CPR and it records both rate and depth of each compression performed. I was able to record and analyse this data, thus allowing me to calculate the percentage of adequate compressions performed. Following the initial period of compressions each participant received an update on the resuscitation council guidelines. They were also provided with a demonstration of adequate compressions. Participants were then requested to perform a further 2 minutes of compressions which were again recorded using the pocket CPR device. The primary outcome measure was the percentage improvement in adequate chest compressions following a period of feedback. A t-test was used to determine any significant difference between the percentage of adequate compressions performed by the group before feedback to the percentage adequate compressions performed after feedback.

Results: Compressions were performed poorly by the 29 participants both before and after feedback. The mean percentage of adequate compressions prior to feedback was 1.75% and the mean after feedback was 14.68% (p value 0.001)

Conclusion: The quality of chest compressions provided in our department was suboptimal across all grades of provider. Feedback and training appears to make a

significant improvement to the delivery of adequate chest compressions, but it remained suboptimal. Every effort should be made to focus on quality of chest compressions during cardiac arrest resuscitation. Regular practice of chest compressions and feedback on performance should be provided to Emergency Department staff, with an aim to maximise the adequacy of compressions in keeping with resuscitation council guidelines. Utilisation of realtime feedback devices and the potential benefits of mechanical compression devices may serve a longterm answer to this problem.

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CPR/Resuscitation

TELEPHONE DETECTION OF OUT-OF-HOSPITAL CARDIAC ARREST BY A CALL CENTER. OBSERVATIONAL STUDY.

Stéphane Travers (1), Emmanuel Blottiaux (2), Yann Gillard (1), Vincent Lanoë (3), Frédéric Lemoine (1), Daniel Jost (3), Pascal Dang Minh (1), Nicolas Genotelle (1), Sabine Lemoine (4), Jean Pierre Tourtier (5), Laurent Domanski (6)

1. Emergency dépt, Paris Fire Brigade, Paris, France
2. Emergency dépt, Paris Fire Brigade, Paris, France
3. Emergency Dépt, Paris Fire Brigade, Paris, France
4. Emergency dépt, Paris Fire Brigade, Paris, France
5. Emergency Dept, Paris Fire Brigade, Paris, France
6. Emergency Dept, Paris Fire Brigade, Paris, France

Corresponding author: daniel.jost2@wanadoo.fr

Keywords: cardiac arrest, Call center, Cardiopulmonary resuscitation

Introduction:

Recognition of out-of-hospital cardiac arrest (OHCA) by a call center and initiation of telephone-guided cardiopulmonary resuscitation (CPR) particularly chest compressions (CC) can impact patient's outcome.

The aim of this study was to assess OHCA detection rate of an urban call center and identify the causes of non-detection.

Materials and methods:

This was an observational retrospective study with review of the telephone recordings of cases of OHCA. The inclusion criteria were OHCA for which audio conversations were available. We collected the "Utstein variables", the type of questions the call center operator (CCO) asked to the caller, the CCO capacity to detect or not cardiac arrest and the type or advice (chest compressions or ventilation) the CCO gave to the caller.

The rates were compared using Fisher's exact test. We conducted univariate and multivariate analysis.

Results:

From 15 to 31 May 2012, 144 OHCA were included. The mean age was 66 ± 20 years. There were 87 (60.4%) men. When the telephone calls were reviewed, 66/144 (45.8%) OHCA were detected at the time of the call by the CCO. Among the non-detected OHCA (n= 78), 46 were classified

as 'non-detectable by the CCO' either due to the existence of an intermediary between the bystander and the emergency service system (n = 31) or due to the impossibility of the caller accessing the victim (n = 12) or due to cardiac arrest occurrence after the end of the call (n = 3). When the caller was near the victim, the CCO cardiac arrest detection rose to 61.9%. The significant factors linked to cardiac arrest non-detection were : occurrence of the CA in the street (p = 0.003), no evaluation of ventilation by the CCO (p = 0.004), the presence of unrecognized gasping (p = 0.02), no precise procedure requested in order for the caller to assess ventilation (p = 0.003). OHCA was better detected when ventilation assesment was conducted by placing the hand on the abdomen rather than by more complex procedures (p = 0.009).

Discussion:

The OHCA detection rate was in line with the published data. The choice of questions the CCO asked to the caller to determine ventilatory inefficacy remains the key to successful OHCA detection by telephone. On the basis of the results of this study, training efficacy follow-up operations have been initiated.

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CPR/Resuscitation

EFFECTIVENESS OF SINGLE DISPATCH CENTER AS PUBLIC SAFETY ANSWERING POINT IN A SYSTEM WITH SEVERAL NATIONAL EMERGENCY PHONE NUMBERS AMONG SURVIVAL OF OUT-OF-HOSPITAL CARDIAC ARRESTS

François-xavier Ageron (1), Guillaume Debaty (2), Arnaud Gaillard (3), Stéphane Bare (4), Marie-france Monnet (5), Loïc Belle (6), Vincet Danel (7), Jean-pierre Perfus (8), Dominique Savary (8)

1. Emergency department, Regional Hospital of ANNECY - SAMU 74, ANNECY, France
2. SAMU 38², Centre Hospitalier Universitaire de Grenoble, Grenoble, France
3. SSSM74, Service départemental d'incendie et de secours, ANNECY, France
4. SAMU 73, Centre Hospitalier de Chambéry, Chambéry, France
5. SSSM38, Service départemental d'incendie et de secours, Grenoble, France
6. Cardiology, Centre Hospitalier de la Région d'Annecy, ANNECY, France
7. SAMU 38, Centre Hospitalier Universitaire de Grenoble, Grenoble, France
8. SAMU 74, Centre Hospitalier de la Région d'Annecy, ANNECY, France

Corresponding author: fxageron@ch-annecy.fr

Keywords: Cardiac arrest, Dispatch center, Recognition

Background: When "public-safety-answering-point" as 9-1-1 is not provided, people could reach different emergency phone number corresponding to multiple dispatch center : Police, Fire department (FD) or Emergency medical service (EMS). In case of out-of-hospital cardiac arrest (OHCA), it

could be confusing for the population, which one is the most appropriate to call.

Aim: To evaluate the association between survival and the use of a single dispatch center compared to multiple dispatch center in a system with multiple emergency phone numbers.

Methods: Prospective observational study with propensity score matching and causal mediation analysis based on patient material collected in the regional cardiac arrest registry of the Northern French Alps Emergency Network. Inclusion criteria were patients aged 18 or older, had an OHCA considered for resuscitation with cardiac aetiology presumed. In the three administrative departement of Northern French Alps, one has a single dispatch center which combine EMS and FD services, and two have multiple dispatch center. End-point was survival at hospital discharge. Unconditional logistic regression was used to assess association between outcome and single dispatch center. Because call to single dispatch center was not randomly assigned in the study population, we conducted a propensity score for creating subgroup treated units. Patient in the single dispatch center group were matched with a unique control patients with nearest neighbour methods. Therefore, conditional logistic regression model were performed. To understand the effect of the use of single dispatch center, we developed causal mediation analysis using parametric regression models to decompose the effect in the natural direct effect due to exposure and the natural indirect effect of the exposure by a mediator variable.

Results: Between 2005 to 2012, 5704 patients fulfilled the inclusion criteria. Survival at hospital discharge was observed in 144 of 1865 patients (7.7%) in the single dispatch center group and 244 of 3839 patients (6.4%) in the multiple dispatch center group ($p=.055$). FD phone number was called first in 3274 patients (57%) and was associated with a poor outcome in all patients, adjusted odds ratio (OR) 0.51; 95%CI, 0.41-0.65; $p<.001$ and in propensity matched patients adjusted OR 0.36; 95%CI, 0.23-0.59; $p<.001$. In all patients and propensity matched patients, single dispatch center is associated with an increase of the survival, respectively adjusted OR : 1.27; 95% CI, 1.00-1.62; $p=.041$ and adjusted OR : 1.58; 95% CI, 1.02-2.44; $p=.038$; corresponding to a 3.4% absolute risk difference in survival in favour of single dispatch center. In causal mediation analysis, time from call to arrival on scene had a significant effect in the association between survival and single dispatch center, natural indirect effect corresponding to the effect of single dispatch center mediated by time from call to arrival on scene on survival showed an adjusted OR: 1.07; 95% CI, 1.00-1.15; $p=.043$. Time from call to arrival on scene led to 24% of the effect of the single dispatch center on survival.

Conclusion

Based on propensity score matching analysis, 29 patients presenting an OHCA would need to be treated by single dispatch center to save one life. Among patients with OHCA in a system with several emergency phone numbers, single dispatch center was significantly associated with an increase of survival. Regarding as design and propensity score matching analysis that control for selection bias and

confounding factor, association between single dispatch center and survival was consistent. The understanding of clinical mechanisms with causal mediation analysis leading to the effect of the single dispatch center strengthens evidence of the association.

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CPR/Resuscitation

FACTORS ASSOCIATED WITH SURVIVAL IN SEVERE HYPOTHERMIA WITH AND WITHOUT CARDIAC ARREST

Ibrahim Moustapha (1), Guillaume Debaty (1), Amandine Rallo (1), Raphael Briot (1), Marc Blancher (1), Julien Brun (2), Vincent Danel (1), Jean-Francois Payen (2)

1. Emergency departement, CHU de Grenoble, Grenoble, France
2. Department of anesthesiology, CHU de Grenoble, Grenoble, France

Corresponding author: imoustapha@chu-grenoble.fr

Keywords: accidental hypothermia, survival, ECLS

Introduction: Accidental hypothermia, defined an involuntary drop in core body temperature under 35°C, is a condition associated with significant morbidity and mortality. The aim of the study was to identify factors associated with survival in hypothermia stage III and IV with and without cardiac arrest.

Method: The charts of all patients with accidental hypothermia who were admitted to the trauma center of a single academic hospital during a 10 year period were retrospectively retrieved.

Results: Of 164 charts, 48 patients were admitted with a temperature < 28°C, Median 26°C and interquartile range [24–27,2].

The etiology of hypothermia was exposure to cold environment in 56%, avalanche in 27% of these patients and immersion or submersion in cold water in 17%. Their average age was 47 ± 22 years, and 58% were males.

Thirty-two patients (67%) had a cardiac arrest (CA): 15 presented an initial cardiac arrest before arrival of rescue (ICA) (31%), 17 presented a rescue collapse (RC) (36%).

Twenty three patients (47%) had an Extracorporeal Life support (ECLS) including 21 with a cardiac arrest (8 ICA, 13 RC) and 2 patients with hemodynamic instability.

Overall mortality was 50%, in subgroup with ICA 80% (OR 4; CI 95% [1,3-12,4]), in subgroup with a rescue collapse 53% (OR 1,12 [0,52-2,4]). Cerebral performance category score was 4 [4-4] for survivors of ICA and 1 [1-2] for survivors of rescue collapse.

In univariate analysis, factors associated with a poor prognosis were an ICA, a decrease in PH or TP, an increase serum potassium, serum sodium, lactates, creatinine or TCA.

We find two cases of survival in exceptional circumstances: a prolonged cardiopulmonary resuscitation >5h, T=16,9°C, and a prolonged burial of 7h, T=22°C.

Discussion: Our Study shows that initial cardiac arrest before arrival of rescue is associated with an unfavorable prognostic, the three only survivors were in a vegetative state. The implementation of ECLS in this situation is questionable. A rescue collapse is not a poor prognostic factor. In this case resuscitation should be extended even if the Cardiopulmonary resuscitation is extremely prolonged. The orientation of patients with severe hypothermia must always be to a specialized center with ECLS.

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CPR/Resuscitation

CHARACTERISTICS AND OUTCOMES OF RAPID RESPONSE TEAM SYSTEM IMPLEMENTATION.

Jirapat Suriyachaisawat

Emergency department, Bangkok Hospital, Bangkok Hospital Group, Bangkok, Thailand

Corresponding author: jirapat2@gmail.com

Keywords: Rapid response team system implementation, mortality rate, cardiac arrest

Background: In-hospital cardiac arrest was still high mortality and high morbidity even though we had Code blue call . To prevent unexpected cardiac arrest and decrease mortality rate in cardiac arrest case is necessary ,especially out of ICU . Then Rapid Response Team (RRT) system was planned and implemented since June 2009 to detect pre-arrest conditons and for any concerns.The RRT consisted of on duty emergency physicians and nurses from emergency department.

Objective: To investigate the epidemiological data and outcomes of RRT system implementation in cardiac arrest cases such as incidence, initial rhythm, mortality rate.

Methods: Prospective comparative study, before and after RRT system implementation. Data collected from electronic medical records, cross-referenced with incident reports. Data included all Code blue and RRT calls during 2008-2011 was analysed (the RRT system was implemented from June 2009). We performed Chi -square analysis to find statistic significance

Results: Of a total 378 RRT cases from June 2009 until December 2011, 57% were male with average age 65.8 yrs; most calls came from regular wards (84.9%); average response time was 4.16 minutes. Peak call time was during 6-9.00 am and 18-21.00 pm. Most commonly associated vital sign criteria as reason for call were RR>30/minute (21%), O2sat <90% (17%), SBP < 90 mmHg (16%). Most common underlying diseases were cancer, CRF & COPD. Most common diagnoses of events were sepsis, COPD exacerbation & pneumonia. Intervention such as ICU transfer was 59% and Intubation was 15 % of total calls. Mortality rate < 24 hour was 5% and Mortality rate< 30 day was 16%.

The incidence of cardiac arrest decreased by 27% (P value 0.13).

The overall hospital mortality rate decreased by 8 % (P value 0.095).

The number of Code blue calls decreased by 36 % (P value 0.014).

The cardiac arrest mortality rate < 24 hour decreased 33 % (P value 0.006)

Asystole found as initial rhythm in cardiac arrest decreased 18.7 % (P value 0.04).

Conclusions: RRT system improved stability of vital signs after cardiac arrest from cardiac arrest mortality rate < 24 hour decreased significantly .

RRT system improved early detection of cardiac arrest from decrease in asystole found as initial rhythm in cardiac arrest cases.

Although RRT system implementation seemed to reduce cardiac arrest incidence and overall hospital mortality ,it was not statistically significant.

Discussion: RRT system was valuable for many patients to improve screening system to detect pre-arrest conditions. Preventive system for common RRT diagnosis such as cancer, sepsis, COPD (e.g. more frequent vital sign monitoring, O2 saturation every 2 hours etc.) was developed. As a guide to increased observation of patients before RRT call especially in peak call time to improve early detection of deterioration.

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Shock, and Respiratory

OUTCOMES OF UNPLANNED TRANSFERS FROM SUBACUTE CARE TO EMERGENCY DEPARTMENTS

Mari Botti (1), Julie Considine (2), Trisha Dunning (3), Bridie Kent (4), Bev O'connell (5), Maryann Street (1)

1. Faculty of Health, Deakin University, Burwood, Victoria, Australia
2. Faculty of Health, Deakin University, Burwood, Victoria, Austria
3. Faculty of Health, Deakin University, Geelong, Victoria, Australia
4. School of Nursing and Midwifery, University of Plymouth, Plymouth, United Kingdom
5. Faculty of Nursing, University of Manitoba, Winnipeg, Canada

Corresponding author: julie.considine@deakin.edu.au

Keywords: risk management, patient safety, geriatrics

Introduction: In Australian, two major inpatient components of subacute care are rehabilitation, which aims to improve functional status, and geriatric evaluation and management (GEM), which refers to care of patients with multi-dimensional medical conditions associated with disabilities and psychosocial problems.

Aim: The aim of this study was to undertake a detailed multi-site analysis of unplanned transfers from subacute to acute care within Australia. The primary outcome measure was in-hospital mortality. Secondary outcome measures were 30 day and 60 day mortality, discharge destination and serious in-hospital adverse events (unplanned ICU admission, MET call, cardiac arrest).

Methods: A descriptive exploratory approach was used. Participants were inpatients from rehabilitation or geriatric evaluation units at subacute care facilities and who required an unplanned transfer to the emergency department(s) of an acute care hospital from 1 January to 31 December 2010. The study was conducted at four health services in Victoria, Australia.

Results: In total, 431 patients were included in the study. The median patient age was 81 years and 53.4% were female. Weekend transfers occurred in 21.3% of patients and 15.3% of transfers were overnight. The median length of stay in subacute care preceding transfer was 43 hours: 29.0% of patients (n=125) were transferred within 24 hours and 83.5% of patients (n=360) were transferred within 72 hours of admission to subacute care. In the 24 hours preceding transfer, 84.9% of patients had documented physiological abnormalities (Mdn=2), and 36% of patients had three or more physiological abnormalities documented. Acute care hospital admission was required in 87.5% of patients, 3 patients died in the emergency department at the acute care hospital, and 10% of patients were returned to subacute care. Inpatient mortality for patients admitted to hospital was 15.4%. Medical emergency team (MET) activations occurred for 10.3% of patients (n=39), 1.9% of patients (n=7) suffered an in-hospital cardiac arrest and 2.1% of patients (n=8) required an unplanned ICU admission. At 30 days, 3.5% of all patients (n=15) had died and 60 day all-cause mortality was 2.3% (n=10). Significant predictors of in-hospital mortality were the number of physiological abnormalities in 24 hours preceding transfer, MET activation or unplanned ICU admission during hospital admission. For each additional physiological abnormality, the odds of in-hospital death increased by a factor of 1.35 (95%CI, 1.038 to 1.763, p = 0.026). The odds of in-hospital death increased by a factor of 3.15 if MET activation was required during hospital admission (95%CI, 1.32 to 7.52, p = 0.010) and 21.60 if an unplanned ICU admission occurred during hospital admission (95%CI, 2.14 to 218.15, p = 0.009)

Conclusion: Patients who required an unplanned transfer from subacute to acute care have high rates of hospital admission and mortality. The majority of transfers occurred in the first three days of admission to subacute care, suggesting initial discharge planning from acute care warrants greater attention to ensure safe transition of care. The number of physiological abnormalities prior to transfer was predictive of in-hospital mortality, however the frequency of physiological monitoring in subacute care was highly variable with infrequent documentation of complete physiological observations. These findings highlight the need for a systemic approach to recognition and response to patients who deteriorate in subacute care.

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Disaster Medicine, and Psychiatry

MAKING DISASTER CARE COUNT: CONSENSUS FORMULATION OF MEASURES OF EFFECTIVENESS FOR NATURAL DISASTER MEDICAL RESPONSE

Rajesh Daftary (1,2), Andrea Cruz (1), Erik Reaves (3), Frederick Burkle (4), Michael Christian (5), Daniel Fagbuyi (2), Andrew Garrett (6), Gireesh Kapur (7), Paul Sirbaugh (1)

1. *Pediatric Emergency Medicine, Baylor College of Medicine, Houston, United States*
2. *Pediatrics and Emergency Medicine, The George Washington University School of Medicine and Health Sciences, Washington D.C., United States*
3. *Emerging Infections, US Navy Medical Corps, Lima, Peru*
4. *Emergency Medicine, Baylor College of Medicine, Houston, United States*
5. *Harvard Humanitarian Initiative, Harvard University, Boston, United States*
6. *Critical Care Medicine, Mount Sinai Hospital & University Health Network; Dalla Lana School of Public Health, University of Toronto, Royal Canadian Airforce, Toronto, Canada*
7. *National Disaster Medical System, U.S. Department of Health and Human Services, Washington D.C., United States*
7. *Emergency Medicine, Baylor College of Medicine, Houston, United States*

Corresponding author: rajdaftary@gmail.com

Keywords: Measures of Effectiveness, Disaster Medical Response, Consensus

Purpose: Lack of standardization in reporting may lead to inconsistent care and makes gauging efficacy of disaster response impossible. A standardized reporting template constructed of measures of effectiveness (MOEs) is needed to unify medical assistance and allow comparison of responses. We hypothesize that these MOEs can be identified using group consensus methods.

Methods: A systematic review of disaster response publications (2001-2011) was conducted. Qualitative and quantitative descriptors of performance were extracted and used to construct measures. A steering committee of 6 experts in disaster response (Group A) identified which measures from this list should move forward into a survey administered to a second, larger expert panel (Group B). Using the modified Delphi technique, Group B evaluated measures for importance, validity, usability, & feasibility. They also constructed novel measures by free-text responses. After 3 rounds of successive survey, the highest rated measures were compiled into a standardized reporting tool.

Results: 24/39 (63%) experts from Group B completed all rounds. 33% of experts in Group B represent international agencies; 38% represent the US government. We identified 397 measures by literature review, of which 116 (29.2%) moved to the survey round and were joined by 77 free text measures. 31 measures graduated through all rounds, 12 of these were expressed as quantitative rates.

Measures described the functions of medical disaster response in the following domains: Evaluation (needs assessment performed, percentage of patients with moderate/severe injuries); Treatment (presence of sterilization equipment, available basic life support measures, medical support provided to local facilities, proportion of essential drug list available, healthcare provider to patient ratio in critical care, number of patients

treated, rate of debridement of dirty wounds, rate of debrided wounds receiving antibiotics, pediatric formulations available); Disposition (cause-specific mortality rate, critical care mortality rate, under-5 mortality rate, rate of transfer for critically ill, method of hand-off); Logistics (electricity availability, amount of time elapsed before personnel and equipment available, local medical staff utilization, chain of command, food and water for team use transported, search and rescue coordination with medical teams, translators, critical care staff, latrines for patients, coordination with incident command, registration of medical teams, disaster training of teams); and Public Health (rate of operating health centers, volume of clean water per patient, communicable disease monitoring, infection control, incorporation of public health staff).

Conclusions: Measures were selected by international experts for their potential to predict downstream reductions in morbidity and mortality following a major natural disaster. Each is underpinned by multiple factors requiring attention in disaster response. They allow real-time assessment of response and can signal when practices should be modified to better meet the community's medical needs. This is the first consensus-developed reporting tool constructed using objective measures to describe the functions of disaster medical response. It should be evaluated by agencies providing medical response to the next major natural disaster.

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Disaster Medicine, and Psychiatry

SAVING LIVES DURING A MULTI-ACTOR, COMPETENCY-BASED DISASTER MEDICAL CURRICULUM

Lancer Scott (1), Judith Staub (2), Christopher Ashby Davis (2), Thomas Ross (2)

1. Division of Emergency Medicine, Medical University of South Carolina, Charleston, United States

2. College of Medicine, Medical University of South Carolina, Charleston, United States

Corresponding author: lancerscott27@hotmail.com

Keywords: competency-based curriculum, high-fidelity simulation, disaster training

Objective: Providing comprehensive emergency preparedness training (EPT) to patient care providers is important to the future success of disaster operations. Disasters are rare, complex events involving many patients and environmental factors that are difficult to reproduce in a training environment. Few EPT programs possess both competency-driven goals and metrics to measure life-saving performance during a multi-actor simulated disaster. **Methods:** Over the course of 18 months, a community-wide task force developed a 1 day (8 hour) EPT course for patient care providers designed to enhance provider knowledge, skill, and comfort necessary to save lives during a simulated disaster. Nine learning objectives, 18

competencies, and 34 performance objectives were developed. Ten 4th year medical students and 17 Veterans Hospital Administration (VHA) providers were recruited and volunteered to take the course. An online pre-test, two post-tests, course assessment, didactic and small group content, and a six minute clinical casualty scenario were developed. During the scenario, "Influenza-Like Illness," trainees working in teams were confronted with 3 human simulators and 10 actor patients at one time. Unless appropriate performance objectives were met, the simulators 'died' and the team was exposed to 'anthrax.' After the scenario, team members participated in a facilitator-led debriefing using digital video, and then repeated the scenario. Team membership and scenario content did not change.

Results: Trainees (n=27) included 40% medical students, 28% physicians, 28% nurses, 4% emergency managers, and 4% mental health providers. 47% of the VHA providers reported greater than 17 hours of disaster training per year while 50% of the medical students reported no disaster training per year. The mean (SD) score for the pre-test was 12.7(4.0), or 53% correct, and after the training, the mean (SD) score was 18.8(2.2), or 78% (p<0.01). The overall course rating for the course was 96/100. Trainee self assessment of "Overall Skill" increased from 63.3/100 to 83.4/100 and "Overall Knowledge" increased from 60.3/100 to 81.8/100 (p<0.01). Of the 34 performance objectives during the disaster scenario, 23 were completed by at least half of the teams during their first attempt. All teams (6/6) were able to resuscitate two simulators and nearly all teams (5/6) prevented anthrax exposure to the hospital during their second scenario attempt.

Conclusions: The 1-day EPT course for novice and experienced patient care providers recreated a multi-actor clinical disaster and enhanced provider knowledge, comfort level and EPT skill. Trainees were able to resuscitate two unstable simulated patients and prevent anthrax exposure to the hospital during a loud and chaotic disaster scenario. The curriculum uniquely combines high-fidelity simulation and multi-actor scenarios to measure the life-saving performance of patient care providers confronted with >10 patients at once. A larger scale study, or multi-center trial, is needed to further study the impact of this curriculum and its potential to protect provider and patient lives.

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Disaster Medicine, and Psychiatry

THE RESTORATION OF LAVATORY SYSTEM IN SHELTERS IS ESSENTIAL FOR PREVENTING OUTBREAKS OF ACUTE GASTROENTERITIS: A RETROSPECTIVE CHARTS REVIEW STUDY

Takahisa Kawano (1), Hiroshi Morita (1), Syuichi Enomoto (2), Osamu Yamamura (2)

1. Emergency department, University of Fukui Hospital, Fukui, Japan

2. Neurology department, University of Fukui Hospital, Fukui, Japan

Corresponding author: maketenakunarakattenake@hotmail.com

Keywords: Outbreak, Acute gastroenteritis, Shelter

Background

Epidemics of acute gastroenteritis are frequently reported following natural disaster in industrial nations. An appropriate management of sanitation condition is essential to prevent and control this disease. However, it has not yet been proven.

Objectives

We compared attack rates of acute gastroenteritis between shelters with or without lavatory system after The Great East Japan Earthquake.

Methods

This study was retrospective chart review study. The data was obtained from the charts of the evacuees who visited the clinics at shelters of Ishinomaki city and Watari town from March 11, 2011 to April 10, 2011. Acute gastroenteritis was defined by diagnosis made by doctors in charge or the presence of watery diarrhea. Shelter with lavatory system was defined as shelter where lavatory system was still available or temporary lavatory was located in the first three weeks after this disaster. We counted new acute gastroenteritis patients and calculated the attack rate of gastroenteritis every shelter. Attack rates between shelters with or without lavatory system were compared using the Mann-Whitney U test. Relative risk (RR) for acute gastroenteritis was calculated comparing between shelters with or without lavatory system using chi-square test.

Result

During this period, 11,329 patients visited shelter clinics. Mean patients age was 48.4 years old (SD, 24.4). Twenty four shelters were classified into 15 shelters with lavatory system and nine shelters without lavatory system. The median number of new acute gastroenteritis patients per day was 44 (IQR 18 to 56). The attack rates in shelter without lavatory system were higher than in shelter with lavatory system (16.6% vs 10.1%, $P=0.03$). The RR for acute gastroenteritis was 2.0 (95%CI 1.8 to 2.3).

Conclusion

After natural disaster, a restoration of lavatory system is essential for preventing outbreaks of acute gastroenteritis.

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Disaster Medicine, and Psychiatry

PSYCHOSOCIAL NEEDS ASSESSMENT OF THE HAITIAN CHILDREN IN THE CHILD IN HAND AFFILIATED ORPHANAGES.

Majed Aljohani (1), Abdulrahman Alqahtani (1), Sarah Carson (2), Srihari Cattamanchi (1), Gregory Ciottone (1), Moira Hennessey (2), Prasit Wuthisuthimetawee (1), Mick Molloy (1)

1. Harvard Affiliated Fellowship in Disaster Medicine / Emergency Management, Harvard Medical School, Boston, United States
2. Psychosocial, Child in Hand, Boston, United States

Corresponding author: c.srihari@gmail.com

Keywords: Psychosocial Needs Assessment of Children, Children Mental Health, Haitian Children

Background:

Psychosocial distress and mental illness impact health around the world, affecting the well-being and productivity of people, communities and societies. Mental health vulnerability is high for people and communities experiencing crisis/disaster, especially for vulnerable groups such as children and orphans who rely heavily on adult others and community stability to support their resilience and coping.

Objectives:

To obtain a mental health profile of the vulnerable youth in Haiti.

Methods:

An observational study was conducted at 6 Child in Hand affiliated orphanages in August 2012. Quantitative and qualitative data was gathered from children, caregivers and orphanage managers. Questionnaires used the Strengths and Difficulties Questionnaire (SDQ), assessing the presence of mental health problems and pro-social behavior; the Perceived Social Support Scale, evaluating the experience of social support by vulnerable youth; and the Kidcope Questionnaire, assessing the use and helpfulness of coping techniques used by children. Key informant interviews were conducted with staff and management at each site.

Results:

A total of 130 children and 15 caregivers were interviewed (56% male, 44% female), with a mean age of 11.49 years (SD, 3.26; range 3-19 years of age). Strengths and Difficulties Questionnaire (SDQ), found 15% of the children having clinically elevated emotional distress in last month. Conduct Problems were found in 26% of the children, experiencing clinically significant behavior problems during the last month. About 16% of children endorsed clinically significant problems with peers during the past month. Overall 20% of children had significant overall distress or impairment in functioning. In terms of pro-social behavior, 77% of children engaged in adaptive normal pro-social behavior over the past month and only 3% of children were in a high risk range "in this area". Substantial mental health concerns were detected, yet a majority of children also showed helping or pro-social behavior. Confidants were most often friends, but also included teachers, family members, staff and community members. With regard to social support, 85% of children had a confidant who they would be able to talk to about things happening in their personal life. Perceived social support was absent for a minority (15%) of children. It is concerning, however that 30% of children reported that caregivers (as well as friends) do not have confidence in them or let them know that they are worthwhile. Sleep disturbance, enuresis and social isolation seem to be priority areas of intervention. A high-level of trauma exposure was detected among 80% of children. Children described a wide range of coping behaviors (i.e. Distracting, self-blame, and expressing emotion, social withdrawal, and social support). However, these were inconsistently used / helpful for children.

Conclusion:

Findings from the staff interviews support quantitative findings, which indicate that an important subgroup of children are experiencing emotional, behavioral or interpersonal difficulties. Beginning to intervene by targeting concerns shared by staff is recommended. Specifically, education and intervention for staff surrounding bed wetting; the use of ritual and mood regulation practices to support healthy sleep practices; and providing adequate access to feminine hygiene products is suggested. Notably, in order for staff to begin to address these concerns they must be supported and empowered to do so. Collaborating with management to establish self-care and support activities for staff is recommended (In conjunction with self-care education workshops). Capacity building seminar to enhance awareness and understanding of child mental health, child development and communication, are recommended (and requested by staff). Priority areas to address include, staffing policies that support the best use of staff strengths and allow for self care, practices that allow for regular one-on-one interaction with children when possible, and aging-out expectations and services for older youth.

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Disaster Medicine, and Psychiatry

THE UTILITY OF SOCIAL MEDIA IN DISSEMINATING INFORMATION DURING DISASTERS: THE HURRICANE SANDY EXPERIENCE

Michael S Molloy (1,2,3), Stephen P Wood (2), James R Rifino (2), Abdulrahman Alqhatani (2), Srihari Cattamanchi (2), Majed Aljohani (2), Amalia Voskanyan (2), Mustapha S Fofana (4), Gregory R Ciottone (2)

1. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT), Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland
2. Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA
3. Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland
4. Massachusetts MIRAD Laboratory, Worcester Polytechnic Institute, Worcester, MA, USA

Corresponding author: mickmolloy@mac.com

Keywords: Social media, internet, Disaster Medicine, EMS Response, Disaster preparedness

Introduction

On October 30, 2012 the Atlantic US Coast was struck by Hurricane Sandy, the largest Atlantic Coast hurricane in recorded history with winds spanning 1,000 miles. An estimated 50 Million of the East Coast US population were affected by the event. Over 7.5 million people lost power in over 20 states affected by the hurricane and more than 285 people died along its path from the Caribbean to the United States. Damage has been estimated at over \$71 Billion for the US alone.

A significant number of agencies including The Federal Emergency Management Agency (FEMA), the American Red Cross and the Center for Disease Control (CDC) provided information on their websites regarding hurricane safety and evacuation warnings.

Use of social media sites preemptively for disaster settings is a potential method for disseminating important information before the event in preparation mode, during the event for evacuation warnings, and after the event when resources are not well known. Facebook is one of the most popular social media sites and has over 1.06 Billion active monthly users as at Jan 30th 2013 adding approximately an additional 100 million users every 150 days.

OBJECTIVE

To identify the utility of using a specific social media site set up in October 2012 in response to a predicted natural disaster for disseminating pre-event information, real-time reporting of weather conditions, and post-event resources and resilience information.

Method

Weft QDA, an open source free computer assisted qualitative data analysis software package (CAQDAS) was used to qualitatively review the "Hurricane Sandy" Facebook page. The software allows for a detailed analysis of content, themes and identification of commonly used phraseology using simple text or through utilizing Boolean queries.

Those who "liked" the page were counted and the individual comments were parsed through Weft QDA. Common themes were identified.

Results

162,000 Likes

638,000 "people talking"

There were 162,000 "likes" and 638,000 "people talking" on the Hurricane Sandy Facebook page. The themes identified from coding the comments included "prayer", "fear", and "well wishing"

Analysis/Discussion

It was most notable that there were very few comments regarding any safety information, updating of conditions in specific areas or more importantly post-disaster resources available to individuals in affected communities.

A significant advantage social media offers over traditional static data driven websites is the ability for the reader to feedback and comment on their own or their communities situation with respect to access, supplies, hazards and fatalities which could prove very useful in the recovery phase of such a disaster.

Social media is a means of communication that has become ubiquitous in American households.

Taylor electronically surveyed over 1,000 people on their use of social media during disasters in Australia and New Zealand and found over 80% were looking for general information and 55% looking for specific information related to the disaster. Clinician use of social media is increasing exponentially and it is being used as a teaching and information resource with increasing regularity.

Conclusions

This specific privately posted Facebook website dedicated to Hurricane Sandy did not demonstrate any utility in

helping people during the disaster. It does identify a potential immediate source of life-saving information/resources during disasters.

We posit to be more useful individual sites be developed for Hurricanes/Tornadoes/Tidal waves etc and should have generic information including but not limited to

- Shelter in place check lists
- Evacuation routes
- Emergency Contact numbers/lists

and that such generic sites could link to specific sites for the impending event providing a data repository. Significant opportunities exist for government and federal agencies to utilize social media as part of the response to natural or man-made disasters.

More research is required to identify the beneficial use of this widely used communication medium.

Or-213

Disaster Medicine, and Psychiatry

ARE BELGIAN MEDICAL STUDENTS EDUCATED IN DISASTER MEDICINE?

Luc Mortelmans (1), Greet Dieltiens (1), Kurt Anseuw (1)

1. *Emergency Medicine, ZNA Camp Stuivenberg, Antwerp, Belgium*

Corresponding author: luc.mortelmans@zna.be

Keywords: medical students, disaster education, belgium

Objectives: Every physician and senior medical student are expected to assist in case of disaster situations, but are they educated to do so? We evaluated the knowledge on Disaster Medicine education in the Belgian medical curriculum. Our hypothesis is that Belgian senior medical students are not prepared at all.

Methods: Senior medical students were invited through their faculty to complete an online survey on Disaster Medicine, training and knowledge. This reported knowledge was tested by a mixed set of 10 theoretical and practical questions. All faculties were asked if Disaster Medicine was included in their curriculum.

Results: 1103 participated with a mean age of 24.62, 59 % females. 47 % considered that Disaster Medicine should absolutely be taught. Self estimated capability to deal with various disaster situations varied from 1.61/10 to 4.29/10. Despite this limited confidence, there is a high willingness to assist. The case/theoretical mix gave a mean score of 4.35/10 with a significant higher score for males, students involved in EMS and those applying for Emergency Medicine training. Although a positive attitude 50 % will place contaminated walking wounded in a waiting room and 48 % would use iodine tablets as first step in decontamination. 47 % even believes that these tablets protect against external radiation. 50 % believes that decontamination of chemical victims consists of a specific antidote spray in civil defence cabins. Only two universities offer a very limited introduction.

Conclusion: Despite a high willingness to respond, our students are not educated for disaster situations.

Or-214

Disaster Medicine, and Psychiatry

EPIDEMIOLOGY OF PATIENT PRESENTATION TO THE CANADIAN MEDICAL ASSISTANCE TEAMS FIELD HOSPITAL AFTER THE 2010 HAITI EARTHQUAKE.

Justin Rashad Chin (1), Cristina Villa-roel (1), Brian Rowe (1), Jeffrey Franc (1), Caitlane Tarun (1), Rajiv Chetram (1), Patrick San Agustin (1), Valerie Rzepka (2)

1. *Emergency Medicine, University of Alberta, Edmonton, Canada*

2. *Canadian Medical Assistance Teams, Canadian Medical Assistance Teams, Langford, Canada*

Corresponding author: chin@ualberta.ca

Keywords: Disaster, Earthquake, Surveillance

INTRODUCTION: The Canadian Medical Assistance Teams (CMAT) early response to the 2010 Haiti Earthquake disaster involved establishing a field hospital to manage medical and surgical pathology. The goals of this study were to describe the patient presentations and their progression at this field hospital, and develop strategies to prepare for future disasters.

METHODS: This is a prospective study of patient encounters in Haiti immediately following the 2010 Haiti earthquake. Data for the study were collected by nurses or paramedics using a one-page log at the triage and maintained from day 6 to 43 days after the earthquake. The study codebook and database were based on international disaster publications and study team consensus; paper-based forms were entered into an ACCESS database using double data entry and consensus resolution of disagreement. Data was sub-grouped into trauma, wound care, obs/gyne, and medical/other. Statistical analysis and graphical representation of data was performed to examine differences in presentation among post earthquake days (e.g., 6-12, 13-19, 20-26, 27-33, 34-41), age and sex.

RESULTS: From day 6 post earthquake, until day 43, 5108 patients were seen at the CMAT field hospital, 67.7% adult and 32.1% pediatric. Overall, medical complaints (70.4%) outnumbered wound care (14.1%), ob/gyn (7.6%), and trauma (7.9%). Traumatic presentations decreased dramatically from collection day 1, then reached a plateau after week 1 of the CMAT operation, while the other 3 categories increased, and accounted for the majority of patient presentations.

CONCLUSIONS: Preparing and responding to a disaster, which by definition entails limited resources, is complex. This study provides valuable information by characterizing the patient presentations to an acute response hospital, after an earthquake. Our findings provide a framework that the disaster medicine community can use for response preparation.

Or-215

Disaster Medicine, and Psychiatry

ARE DUTCH HOSPITALS PREPARED FOR CHEMICAL, BIOLOGICAL OR RADIONUCLEAR INCIDENTS?

Luc Mortelmans (1), Menno Gaakeer (2), Greet Dieltiens (1), Kurt Anseeuw (1)

1. Emergency Medicine, ZNA Camp Stuivenberg, Antwerp, Belgium
2. Emergency Medicine, UMC, Utrecht, Belgium

Corresponding author: luc.mortelmans@zna.be

Keywords: disaster preparedness, CBRN, Dutch hospitals

Objectives:

Being one of Europe's densest populated countries with multiple nuclear installations, a heavy petrochemical industry and also at risk for terrorist attacks, The Netherlands bear some risks for CBRN incidents. Our hypothesis is that local hospitals are not prepared to deal with these incidents.

Methods:

All 93 Dutch hospitals with an ED were sent an online survey on different aspects of preparedness. Apart from specific hospital data, information on: hospital disaster planning; risk perception; availability of decontamination units, personal protective equipment, antidotes, radiation detection, infectiologists, isolation measures and staff training were obtained.

Results:

Response rate was 65%. Data of this responder group are presented. Although 59% of them estimated to be at risk for CBRN incidents this is only included in disaster plans in 41%. Only 35% has decontamination facilities and 28% has appropriate personal protective equipment available for triage and decontaminating team. Atropine is available in high doses in all centers but specific antidotes such as hydroxycobalamine, thiosulphate, prussian blue, DTPA or pralidoxime are less available (70, 56, 8, 14 and 34% respectively). 6% have radiodetection equipment with alarm function and 25% has 24/7 availability of a nuclear specialist in case of disasters. Infectiologists are continuously available in 61%. Individual isolation facilities are found in 12%.

Conclusion:

There are serious gaps in hospital preparation for CBRN incidents in The Netherlands. Financial aspects are the major drawback.

Or-216

Disaster Medicine, and Psychiatry

DO ALCOHOL BRIEF INTERVENTIONS IN THE EMERGENCY DEPARTMENT REDUCE HAZARDOUS DRINKING? A REVIEW AND META-ANALYSIS OF THE CURRENT LITERATURE.

Marion Campbell (1)

1. Emergency Department, Hairmyers Hospital, Hairmyers, United Kingdom

Corresponding author: marion1980@hotmail.com

Keywords: Alcohol, Brief Intervention, Emergency Department

Introduction: It is estimated that in the UK, 40% of daytime Emergency Department (ED) consultations and 70% of night-time attendances are alcohol-related. Brief Interventions (BIs) have been used for many years in primary care with the aim of modifying potentially harmful behaviour. Given the large number of alcohol-related attendances, EDs have increasingly been seen as attractive places where BIs might successfully be carried out. The aim of this review and meta-analysis is to examine the benefits of ED-based BIs on hazardous drinking.

Methods: A literature review using Medline (1496 to present) and Embase (1974 to present) generated 237 citations after duplicates were removed. After non-relevant citations were excluded, leaving 22 primary research papers. In addition, 4 primary papers were identified from manual reference search, giving a total of 25 papers: 1 meta-analysis; 14 RCTs; 5 non-RCTs; and 6 cohort studies. For the meta-analysis, the most common outcome was weekly alcohol intake presented as mean +/- SD. Four studies were incorporated into a random effects model inverse variance weighted meta-analysis using standardised mean difference as the effect size.

Results: The meta-analysis identified in the literature review did not show a significant effect of BI on alcohol consumption per week. The primary studies used many exclusion criteria. Interventions delivered varied widely as did outcomes and follow-up rates. With the exception of one study, patients in both intervention and control arms showed a significant fall in drinking both there was no difference between the groups. A new meta-analysis, incorporating 4 RCTs, again failed to show a significant treatment effect.

Conclusions: The validity of primary studies in this field are weakened by selection and attrition bias. Despite this, these studies fail to consistently show a clear benefit both in a literature review and up-to-date meta-analysis. As these interventions are costly and time-consuming, they cannot be recommended as a routine treatment in the ED for alcohol excess.

Or-217

Education and Training 2

BRIEF MOTIVATIONAL INTERVENTION TO REDUCE ALCOHOL CONSUMPTION IN YOUNG PATIENTS IN AN EMERGENCY DEPARTMENT: THE AURIA RESEARCH STUDY.

Cristina Diaz Gomez (1), Marcus Ngantcha (1), Nathalie Le Garjean (2), Nadine Brouard (3), Muriel Lasbliez (3), Mathieu Perennes (4), François Jérôme Kerdales (4), Caroline Le Lan (5), Romain Moiran (5), David Travers (6), Xavier Guillery (7), Sandrine Gi

1. *Observatoire Français des Drogues et des Toxicomanies, Observatoire Français des Drogues et des Toxicomanies, Saint Denis, France*
2. *Centre d'information régional sur les drogues et les dépendances, Centre d'information régional sur les drogues et les dépendances, Rennes, France*
3. *Emergency Department, University Hospital, Rennes, France*
4. *Emergency Department, University Hospital, Faculty of Medicine, Rennes, France*
5. *Liver Diseases Department, University Hospital, Faculty of Medicine, Rennes, France*
6. *Adult Psychiatric Department, University Hospital, Faculty of Medicine, Rennes, France*
7. *Emergency Medicine, CHS Guillaume Regnier, Rennes, France*

Corresponding author: abdel.bellou@voila.fr

Keywords: Alcohol, ,, Motivational intervention, Emergency Department

Background – 62% of the young people between 16 to 24 years-old living in the region where the study was done take 5 glasses and more in one occasion as compared to 45.8% in the entire country. Previous studies showed that if the alcohol consumption started earlier the risk to become dependent to alcohol increases at the adult age. In some countries, the motivational intervention was already proposed in adult and could be used in emergency department (ED) setting for young patients. **Aim** – To establish the effectiveness of a Brief Motivational Intervention (BMI) in reducing alcohol consumption among young patients with hazardous or harmful drinking admitted in an urban French ED compared to the delivery only of an information leaflet and a list of addresses of relevant care and treatment services for alcohol misuse. **Methods** – Two-group simple blind randomised controlled trial was used with a follow-up self-report at 3 months. Patients aged 16 to 24 and who tested positive for blood alcohol content (BAC) of 0.5g/l. or above were enrolled. Randomisation was stratified according to patient's age (16-17 or 18-24). Brief interventions were performed by a psychologist in the ED setting from September 2011 to July 2012. A phone booster session was delivered at one and two months for participants assigned randomly to the treatment group. The principal criteria used to assess the reduction of alcohol use at 3 months follow-up was the number of alcoholic drinks in the last week. Data analysis was conducted for a Poisson frequency distribution and analysis of Variance was done. **Results** - A total of 263 patients were randomised of which 132 patients were allocated to the treatment group and 131 to the control group. Attrition accounted for 40.7%. Analysis with intention to treat showed an odd ratio at 0.93 (0.64-1.36), motivational intervention is not associated with alcohol consumption at 3 months (adjusted to the consumption before the visit to ED, T0= one week before the ED visit). The quantity of glasses drunk at T0 was associated with high risk. To drink one glass more at T0 increased by 3% the consumption at 3 months. Sex is significantly associated with alcohol consumption with an OR at 0.62 (0.41-0.95). We observed a decrease of alcohol consumption in women as compared to men at 3 months. The Poisson regression model and analysis of variance didn't show association

between intervention and evolution of alcohol consumption.

Conclusion – This study did not detect a difference in effectiveness between the two conditions (OR 0.93 [0.64; 1.36]). Further studies to test the effectiveness of brief intervention in the ED are needed.

POSTER PRESENTATIONS

Po-001

Front of the Auditorium poster area

AN AUDIT OF PATIENTS PRESENTING TO A URGENT CARE CENTRE

Omar Ghazanfar (1), Rahat Ghazanfar (2)

1. Emergency Department, Wexham Park Hospital, langley, United Kingdom
2. UCC, Wexham Park Hospital, langley, United Kingdom

Corresponding author: rahatbawany@hotmail.com

Keywords: Audit, UCC, Primary Care

Urgent care centre are a relatively new development in the UK.

These are centres run by primary care physicians and often adjacent to an Emergency Department.

The aims of the Urgent Care Centre is to reduce the patient load off from the main emergency department and see patients whose presentations are within the remit of a primary care doctor.

We will present the results of an audit done at Urgent Care centre currently running in conjunction with the Emergency Department at Wexham Park Hospital.

The Emergency Department at Wexham sees close to 100,000/annum and we try and illustrate what positive effects Urgent Care Centre has had in reducing the workload of the emergency department. We will also make some recommendations as to what can be done to improve the current model of an Urgent Care centres to ensure that maximum and efficient services can be provided to the patients.

Po-002

Front of the Auditorium poster area

REVALIDATION OF DOCTORS IN THE UNITED KINGDOM - AN OXFORD DEANERY PROSPECTIVE

Judy Curson (1), Omar Ghazanfar (2), Branwen Thomas (1)

1. Revalidation, Oxford Deanery, Oxford, United Kingdom
2. Emergency Department, Wexham Park Hospital, Slough, United Kingdom

Corresponding author: oghazanfar@nhs.net

Keywords: Revalidation, GMC, Safe practice

Revalidation is a relatively new concept for the United Kingdom. It has become law from the December 2012 and is essential to maintain the license to practice. We will try and explain revalidation from the prospective of the Oxford Deanery and how it effects trainee and what we are doing to streamline the process so that it become seamless and productive.

Po-003

Front of the Auditorium poster area

A COMPARISON OF EFFECTS OF EARLY PLEVIX TREATMENT WITH DOSAGE OF 150MILLIGRAMS AND 300 MILLIGRAMS IN EMERGENCY WARDS

Samira Esfandyari (1), Mohammad Kalantari Meibodi (2)

1. pediatric ward, student reasearch committe shiraz medical science ,shiraz, shiraz, Iran, Islamic Republic of
2. emergency medicin, shiraz medical university, shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: plavix, treatment, coronary

Introuduction: considering the high rate of cardiovascular disease in Iran and the high morality rate related to such conditions its imperative to allocate resources to treat those already affected while continuing the current trend of emphasis on disease prevention tactics. Because coronary conditions demonstrate a wide range of signs and symtomes (from un stable until MI) and treatment should be done in a manner consistent with the syndrome observed, a quick diagnosis should be a priority for the medical staff in emergency wards. Global rates of such conditions and prescribed remedies are affected by race, sex, nationality, age and local diet of those with acute coronary s syndrome and the prescription drugs and dosages in our country should be adopted to climatic and racial conditions prevalent. A study is needed to determine whether methods suggested or employed globally are also suitable for special circumstances of our country. Otherwise, such methods should be modified according to the capabilities of relevant authorities. The practical under study here is an early administration of Plavix to patients with heart conditions in emergency wards of domestic is hospitals.

Method: First of all we choose shiraz hospitals which received a great number of cardiovascular patients (namazi Hospitals). Early doses of Plavix was administered to patients with cardiovascular conditions. In 50 patients in namazi hospital the initial dose was chosen at 150 milligrams while in 50 patients in emergency room it was decided to set the initial dose at 300 milligrams. This drug is found in the market in two forms. One Iranian made and the other made by the original manufacturer. The two have a huge price difference and it was decided to use the non domestic product at hospital. Patients given the initial dose were given an constant daily dose equal to the initial dose during their staying in the hospital. The number of days of hospitalization and the patient's condition including showing of side effects were monitored and recorded until their discharge from the hospital.

Results: Patients suffering from acute coronary condition, which given a dose of 150 milligrams, were hospitalized for 48 to 72 hours and then discharged while patients of a similar condition who were not given the shot or recived 300 miligram were usually hospitalized for 96 hours before

being discharged. It seems that early administration of 150 milligrams of Plavix has a positive effect on quick recovery of patients with coronary conditions. Patients with acute coronary conditions who reported to namazi hospital were given an initial dose of 300 milligrams or not any drug. It was later demonstrated that this dosage had no significant effect on the duration of hospitalization, which for patients formerly hospitalized was around 48 hours.

Conclusion: It could be concluded that taking special circumstances of our country into account, administering an early low dose of Plavix (at emergency ward stage) is preferable to a later administration after thorough medical examination and it is also preferable to the administration of high doses. Others may study the difference between the effects of the generic version with that of the original version to complement the current study.

Po-004

Front of the Auditorium poster area

SOCIAL NETWORK ANALYSIS OF IRANIAN RESEARCHERS ON EMERGENCY MEDICINE: A SOCIOGRAM ANALYSIS

Shervin Farahmand (1), Hamed-basir Ghafouri (2), Hafez Mohammadhassanzadeh (3), Hafez Mohammadhassanzadeh (4), Farhad Shokraneh (5), Maryam Vakilian (6), Mina Zavareh (2)

1. Emergency Medicine, Imam Khomeini Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of
2. Emergency Medicine, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of
3. Cardiovascular Research Center, Tabriz University of Medical Sciences, Tabriz, Iran, Islamic Republic of
4. Scientometrics Research Center, Kerman University of Medical Sciences, Kerman, Iran, Islamic Republic of
5. Research Deputy, Kerman University of Medical Sciences, Kerman, Iran, Islamic Republic of
6. Emergency Medicine, Rasul-Akram Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of

Corresponding author: h-basirghafouri@tums.ac.ir

Keywords: Social network analysis, Co-authorship network, Topic analysis

Background The purpose of this study was to report interaction patterns among Iranian authors of emergency medicine using social network analysis methodology, focusing on co-authorship network.

Methods The bibliographic data of Iranian authors on the "emergency medicine" field during the years 2001 – 2011 were retrieved from the Science Citation Index Expanded database. Co-occurrence matrices were made by BibExcel and were imported to Ucinet and NetDraw to delineate co-authorship network. To detect structural patterns among authors, we considered some measures of social network analysis such as density, centralization indices, component analysis and cut-points. Lastly, subject experts separately analyzed the content of papers.

Results Of 116 papers published, the network was composed of 10 components, with the largest component having 25 authors. Using social network analysis measures, we identified science bottlenecks in knowledge sharing, hub authors, and accelerators of information flow. Topic analysis showed "Wounds and Injuries" as the most recent theme in all components because of existence of national registry for trauma, high burden of road traffic injuries and research priority of injuries in Iran.

Conclusions because of Iranian low productivity in the emergency medicine field, social network analysis seems to be a proper option for bibliometrics to identify central authors and detect knowledge structure on this field.

Po-005

Front of the Auditorium poster area

GLOBAL HEALTH POLICY AND EMERGENCY MEDICINE DEVELOPMENT UNDERSTANDING WHERE WE HAVE BEEN AND WHERE WE MUST GO.'

Stephen Morris (1)

1. Emergency Medicine, University of Washington, SEATTLE, United States

Corresponding author: stephenmorrismd@gmail.com

Keywords: Global health policy, History of global health, Emergency medicine development

The specialty of emergency medicine and the field of global health are relatively new entities that have been developing in parallel. As we gain an understanding of the changing global burden of disease in the complex setting of rapidly changing health systems, urbanization, shifting demographics and workforces, financing, new technologies and increasingly complex care, the need for appropriate health care policy has never been greater. While data supporting emergency medicine development is advancing slowly there remains uncertainty at many levels including cost effectiveness and opportunity costs. In addition, emergency medicine is often in competition for limited resources with other better established more easily recognized specialties. The result is that policy makers at the global level have not embraced support of emergency medicine to the extent that it likely needs.

By reviewing the history and current state of global health policy making through the lens of emergency medicine a path to increase support for emergency medicine emerges. Starting with the development of the WHO and transitioning to Alma Atta, the dominance of the world bank, vertical programs, and finally an analysis of current global policy in the era of global health partnerships we can understand why emergency medicine has not been further embraced and strategize a path forward. While small projects at the local and national level are essential to emergency medicine development, predictions of the global burden of disease in our rapidly changing global environment indicate a need for policies that robustly support emergency medicine. We as academics and

practitioners of emergency medicine should have an understanding of the history and current state of global health policy so we are better positioned to make educated advocacy towards much needed support and a change in the global health paradigm.

Po-006

Front of the Auditorium poster area

EMERGENCY DEPARTMENT PROBLEM SOLVING APPROACH

Yasser Hemeida

EMDM, MAKKAH, Saudi Arabia

Corresponding author: yasser0123@gmail.com

Keywords: ED problems and solutions, overcrowded ED, Time pressure

Overcrowded ED

Problem:

- Patient suffering, dissatisfaction and inconvenience
- Poor patient outcomes
- Poor quality of care
- Violence aimed at hospital staff and physicians
- Decreased physician and nursing productivity
- Deteriorating levels of service
- Increased risk of medical error
- Negative effects on teaching and research

Solution: all solutions and regulations are made to solve this major problem that create most of other problems

1. Critical vs. non critical

Problem: Most of our patients are non critical, this overwhelming number makes ED staff busy and exhausted with cold cases, and affects real emergency cases treatment.

Solution: - Effective & robust triage

-Cooperation with primary healthcare centers to serve non-emergency cases

-ED clinics covered by GPs

2. Time saving approaches

Problem: Some delay in emergency care processing takes unnecessary time, which occupies beds in ED and delay management

-Waiting for medical or surgical consultation

Solution: -effective & robust triage

-Doing necessary investigations only that are needed in emergency diagnosis and management

-Special lab machines and staff for ED investigations

-Allow direct admission by senior ED doctors

-Fast track admission for critical diseases

-Admission to the wards to be done by their nurses or by porter to save time for nurses

-Doing emergency management only, while others in the ward.

3. Internal communications

Problem: ED is multiple stations from triage room... to ED... to screening room... to resuscitation room... to emergency

clinic ... all need integration and cooperation among all staff.

Solution: Teamwork is vital for making ED work running smoothly and effectively.

4. External communications: OPD, ON CALL

Problem: conflict with colleagues from other departments to accept cases

Referred emergency cases discharged from ED to OPD take same appointment as chronic cases

2.Solution: Teamwork...Teamwork...

We must ensure that all professionals work in an integrated way so that patients receive the best clinical care in the right setting as quickly as possible.

- Share ED work with other departments: 1 on call from surgery, and 1 from medical department, working in ED, to share in ED problems and solution and to save time for consultation....

-Share morning meeting for all departments or

-Special arrangement for referred ED cases to OPD

5. Easy access to ED and difficult to other departments

Problem: - easy access to ED and difficult to other departments

- Long and rigid system for appointments

Solution: - Easy access to OPD with appointment on the same day for referred cases from ED, otherwise they will come back to ED

- Return patients to primary health care centers

6. Teaching and academic view

Problem: lack of academic staff in ED and lack of time for teaching and discussion

Solution: - extra hours for CME for ED staff

-Mandatory courses like ALS, ATLS...

-Morning meeting common for ED, medicine and surgical departments

7. Hypersensitivity to ED doctors

Problem: Isolation of ED and lack of integration between ED and other departments, this creates a gap between ED and other departments, and tension among colleagues

-conflict about cases: why you call me about this case, do this and then call me, this is medical not surgical or vice versa

-They think that ED doctors want to throw cases away

-They do not feel ED problems because they do not suffer from

Solution: - Teamwork...Teamwork...

- Rotations for surgical and medical doctors in ED and vice versa ED doctors in other departments

- Common morning meeting for hospital departments (mainly medical & surgical)

8.Lack of Integration Between Community and Hospital

Problem: The hospital and community healthcare settings have generally functioned as two separate entities, resulting in poor communication, poor coordination and inefficiencies in the delivery of healthcare.

Solution:-Public risk communication:

-Management and prevention of chronic diseases

-Management and prevention of cold cases like common cold

9- free service side effects

Problem: free service and insurance covered service in ED is misused by patient

Solution: free service for emergency cases, but paid for non emergency, with clear protocol about emergency free cases
10- ED lovers

Problem: repeated visitors: chronic, old and psychiatric with Solution: social workers and psychiatrists to be involved
#Brain storming for solutions
#International committee for ED problems and solutions
#website for communication: linkedIn.

Po-007

Front of the Auditorium poster area

CHANGE IN EMERGENCY DEPARTMENT VISITS AND ADMISSIONS DURING AND AFTER SUPER STORM SANDY

Kerrie Tidwell (1), Barnet Eskin (2), Dennis Cochrane (3), John Allegra (3)

1. emergency department, Morristown Medical Center, Morristown, United States
2. Emergency department, Morristown Medical Center, Morristown, United States
3. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: jallegra@gmail.com

Keywords: Emergency department visits, Emergency department admissions, Disaster

Study Objective: Super Storm Sandy caused extensive damage in the New York metropolitan area. Our goal was to examine the changes in the number of emergency department (ED) visits and inpatient admissions from the ED during and after the storm.

Methods: Design: Retrospective cohort of ED visits. Setting: 17 suburban and urban New York and New Jersey EDs with annual visits from 28,000 to 84,000. Subjects: Consecutive patients seen by ED physicians on the day of the storm, on the next five days and on the same days of the week for the four preceding weeks. Observations: We compared the number of ED visits and inpatient admissions from the ED on the day of the storm and the next five days to the averages for the same days of the week from the four preceding weeks. We also calculated the proportion admitted on the day of the storm and for all five days after the storm and on the same days of the week from the four preceding weeks. We tested for statistical significance using the Chi-square test and the Bonferroni correction for 14 comparisons with alpha set at $0.05/14 = 0.004$. We also calculated 95% confidence intervals (CIs) for the proportions admitted.

Results: When the visits for all the hospitals were combined, there were a total of 15,273 visits on the day of the storm and five days following the storm. This compares with an average of 14,190 total visits for the same six days of the week during each of the four weeks before the storm. On the day of the storm, there was a decrease in ED visits of 34% and in admissions of 19%. On each of the five days after the storm both increased. There was an average increase of 17% in ED visits and 29% in admissions. Except

for admissions on the fourth day after the storm and ED visits on the fifth day all the increases after the storm were statistically significant ($p < 0.001$). The proportion admitted was 25% on the day of the storm and averaged 21% for the same day of the week for the four weeks before (difference = 5%, 95% CI 2% - 7%, $p < 0.001$). The proportion admitted was 22% on the 5 days after the storm and averaged 20% for the same days of the week for the four weeks before (difference = 2%, 95% CI 1% - 3%, $p < 0.001$).

Conclusions: We found a decrease in ED visits and admissions on the day of the storm, and increases in both during the next 5 days. There was a small increase in the proportion admitted on the day of the storm and the five days after the storm implying that the storm caused only a slight increase in the overall acuity of patients. These findings may be useful in helping plan for future storms.

Po-008

Front of the Auditorium poster area

IDENTIFICATION OF PATIENTS AT THE EMERGENCY DEPARTMENT

Sergio Navarro Gutierrez (2), David Cuesta Peredo (1), Elena Burdeos Palau (1), Silvia Castells Juan (2), Pedro Garcia Bermejo (2), Jose Luis Ruiz Lopez (2)

1. Quality Management, Hospital Universitario de La Ribera, Alzira, Valencia, Spain
2. Emergency Department, Hospital Universitario de La Ribera, Alzira, Valencia, Spain

Corresponding author: sergionavarrog@hotmail.com

Keywords: identification, patient, emergency

OBJETIVES

Study conducted by members of the Safety and Quality Management Group of the Emergency Department in the Hospital Universitario de La Ribera in Alzira (Valencia). The aim of this study was to assess the correct identification of patients treated at the Emergency Department (ED).

METHODS

Random cuts were made during several days at different times to patients in care process and waiting to be examined to evaluate the right identification with bracelets. Patients from Gynecology, Pediatrics and Observation areas were excluded.

RESULTS

After the creation of the Safety and Quality Management Group, we have been trying to evaluate key safety aspects of patients treated at the ED in order to identify areas for improvement in specific topics such as patient identification. In the cuts made at different times and at different days, less than 50% of all patients were correctly identified, specially patients aged between 20 and 40. Most of them were labelled with Care Priority 4 or green colour in the Manchester Triage Scale.

Nearly all patients or their families reported that they have been given the bracelet at admission, with just one exception.

DISCUSSION

Our survey showed that in our ED, the correct identification of patients is less than 50%

Even though bracelets are given to patients or relatives at admission, the percentage of patients who wore them was surprisingly low.

By age groups, our study suggests that elderly patients are more aware of the importance of correct identification of patients and relatives at the ER.

Information campaigns and the insistence of health personnel in the correct identification of patients may be a strategy to optimize the identification in our centre.

Po-009

Front of the Auditorium poster area

ARE PATIENTS "CHOOSING WELL" WHEN SELECTING THE APPROPRIATE SERVICE FOR THEIR HEALTH NEEDS?

Jennifer Stanger (1), Mark Harrison (2)

1. Emergency Medicine, North Tyneside Hospital, North Tyneside, Newcastle, United Kingdom

2. Emergency Medicine, Wansbeck Hospital, Ashington, Newcastle, United Kingdom

Corresponding author: jmstanger@googlemail.com

Keywords: Choose Well Campaign, Patient choice, Emergency department

Background

Attendance to A&E departments across England has risen by 38% in the past 10 years (1,2). This rise is multifactorial however we wanted to examine whether a contributing factor is patients' selection of service to be utilised. Using the Government's advice from the nationally advertised 'Choose Well Campaign', we aim to discover whether patients are presenting to the appropriate place for their health needs.

Method

100 patients were surveyed in the Accident and Emergency department at a District General Hospital in Northumberland. Patients were asked a series of questions which identified the presenting complaint, time since onset, who had made the decision they needed to come to Accident and Emergency and whether they had used any other service before presenting to the A&E department, these included NHS Direct, a pharmacist or their GP. Participants were asked for advice given and it was explored as to why they had not engaged in alternative services. People were asked whether they had heard of the 'Choose Well Campaign' and after being shown one of the posters and given a brief overview about the campaign, were asked whether they would have presented differently had they known this information.

Results

55% of people had presented directly to A&E, 50% of these were inappropriate direct presentations, according to advice from the Choose Well Campaign. According to the

campaign advice only 25% of those who presented directly to A&E were appropriate. 23% of people asked had heard of the national campaign, and after being given some information about the campaign, including being shown the poster, 9% of respondents who had not heard of it said they would change where they would first present. 8% of people who did not present directly to A&E should have done so according to the advice. 16% of people who tried to see a GP were not able to get an appointment. 33% of those advised to come to A&E by the GP, were told to do so over the phone without being seen by a GP first.

Conclusions

These results show that a large proportion of direct presentations to A&E departments are inappropriate, part of this is due lack of awareness about the appropriate place to present, as well as difficulty getting appointments with their GP. It shows that even with advice about the campaign, only a small percentage would change where they would present, some because they thought their ailment was more serious than the category it fell into and some because they thought even if they went to their GP/pharmacy they would be sent in to A&E anyway. Therefore the high number of A&E attendances appears to be due to inappropriate choices made by the public, however the 'Choose Well' campaign in its current form may not be the correct way to tackle this problem.

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Po-010

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THE ROLE OF CIVIL SOCIETY IN ADDRESSING THE EMERGING HEALTH NEEDS OF A POPULATION IN LOW AND MEDIUM INCOME COUNTRIES: THE CASE OF GREECE.

Evika Karamagioli, Agis Terzidis, Panagiotis Ioannidis, Eleni Themeli, Theofilos Rozenberg

Ms "International Medicine / Health-Crisis Management", Medical School, University of Athens, Athens, Greece

Corresponding author: karamagioli@gmail.com

Keywords: economic crisis, public health, civil society

The role of civil society in addressing the emerging health needs of a population in low and medium income countries: The case of Greece.

In times of strong economic recession (Greece being at the moment the 3rd poorest country in the European Union) having a direct negative impact in the health of the Greek population, the country's public healthcare services present signs on inability to adapt and efficiently respond to the radically increased citizens needs.

Financing of the healthcare system is constantly decreasing, healthcare establishment are dysfunctional, health care professional are suffering of burnout and basic equipment and supplies are missing while 21,4% of the population lives in conditions below the acceptable limits of poverty, the percentage of unemployment is the highest in Europe and 36% of those employed do not have social security coverage. A worsening of mental health status is documented. along with the deterioration of self-reported general health and there has been a significant increase in the number of people who felt they needed health care but did not search for public services due to economic constraints. The number of new HIV cases among injecting drug users (IDU) has risen dramatically, thought to be caused by reduced service provision.

In this context we observe that civil society organizations and informal entities are getting more and more active in filling up the gap created in the continuity and access to all citizens in healthcare services by providing social services pharmaceutical assistance and free medical and for the population in need mainly via street clinics once used to treat undocumented migrants.

There are at the moment more than 60 entities (formal such as NGOs, the Orthodox church, professional bodies and informal ones) that offer services of social solidarity and medical and pharmaceutical aid to the Greek population.

The objective of the proposed poster is to present quantitative and qualitative data about the role of those stakeholders and discuss their outcomes.

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Po-011

Front of the Auditorium poster area

PRIMARY SPOKEN LANGUAGE AND FILING A FORMAL COMPLAINT IN THE EMERGENCY DEPARTMENT

Paul Porter (1), Richard Shih (2), Brian Walsh (2)

1. Emergency Department, Warran Alpert school of Medicine, Brown University, Providence, United States
2. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: shih100@yahoo.com

Keywords: Complaints, Language Barrier, Primary Language Spoken

Background: Emergency Department complaints represent a small group of ED patients. This group of patients often provide vital feedback on administrative operations. Few previous studies look at patient complaints or ability to file a complaint based on language barriers.

Study Objective: To assess the frequency of physician complaints based on patient's primary language.

Methods: The study design utilized was retrospective. All ED patient complaints from two busy EDs were identified over a one year period. These complaints included written, survey response, phone calls or walk-in types. The patient's primary language was collected. In addition other data collected included patient demographics, chief complaint, insurance status, and complaint type were collected.

Results: The total ED census for the two hospitals during the study period was 162,223 visits. 148 patient complaints were identified. In all of the 148 complaints, English was found to be their primary language. No other primary language was identified. Of all patients coming to the EDs, 134,075 (83%) of them identified English as their primary language. The remaining 17% ED patients identified a non-English language as their primary language. No complaints were received from this group of patients.

Conclusion: Formal complaints regarding the ED are uncommon. The vast majority of the complaints, all of them in this study, originated from individuals who speak English as their primary language. It is unclear why non-English speaking patients have a much lower frequency of formal ED complaints. This may be due to comfort level in communication or a difference in service expectation between. Further study in this area is important

Po-012

Front of the Auditorium poster area

RISK OF BURNOUT AMONG EMERGENCY PHYSICIANS AT A TERTIARY CARE CENTRE IN SAUDI ARABIA

Abdullah Alanzi (1), Saad Albaiz (2), Khaled Alrajhi (2), Abdulmohsen Alsaawi (3), Majed Alsalamah (1), Mohammed Alsultan (4)

1. College of Applied Medical Sciences, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

2. Emergency Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia

3. Emergency medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia

4. Deanship of Admission and Registration, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

Corresponding author: al_baiz@hotmail.com

Keywords: Burnout, Emergency Medicine, Stress

Introduction:

Physician's physical and psychological wellbeing has gained special attention in the last decade. Work related stress and subsequent burnout could lead to inadequate work performance, as well as increase health care provider turnover rates, especially in the emergency medicine environment. The Joint Commission on Accreditation of Healthcare Organizations has mandated all hospitals and health care systems to have a process for addressing physicians' physical as well as psychological health. Although there are multiple burnout studies on emergency physicians from different parts of the world, however we were not able to find any published studies from Saudi Arabia or the neighboring countries. In this study, we aimed to assess the risk of burnout among emergency physicians working at one of the largest tertiary care centers in Saudi Arabia.

Methods:

This was an observational, cross-sectional study based on a structured questionnaire "The Maslach Burnout Inventory - Human Services Survey (MBI -HSS scale)", which has been previously extensively tested and validated. Study was aimed at all physicians in the Emergency Department (ED) at King Abdulaziz Medical City (KAMC), Riyadh, Saudi Arabia. A total of 72 emergency physicians were included in the study. We excluded emergency residents, newly hired physicians (less than 6 months), as well as the study investigators. Soft copies of MBI-HSS were sent as e-mails to all participants, non-responders were re-contacted by phone.

Results:

Overall, 53 (74%) out of 72 subjects filled the questionnaire. Out of the 53 respondents, 45 (85%) were males and 8 (15%) females. The years of practice experience ranged from 6 months to 24 years, with a median of 7 years.

MBI-HSS subscales results:

Emotional Exhaustion (EE): The mean EE score was 2.72 (SD 1.28), with 21 participants (40%) in the high-risk zone.

Depersonalization (DP): The mean DP score was 1.86 (SD 1.31), with 21 participants (40%) in the high-risk zone.

Personal Accomplishment (PA): The mean PA score was 4.5 (SD 0.9), with 17 participants (32%) in the high-risk zone.

When participants were asked about the factors that are most likely to negatively affect the relationship to work, work overload was the most important factor among all different groups, followed by insufficient reward.

Participants were also asked in an open-ended question about what techniques they use to alleviate work-related stresses, taking a brake from work; social activities and praying were among the most common answers.

Conclusion:

Our results are consistent with previous literature in showing that emergency physicians are at a high risk of burnout. Decision makers should take serious steps to address the threat, in order to minimize the risk of burnout and its impact on physicians as well as the patient they care for.

Po-013

Front of the Auditorium poster area

PROMOTING PATIENTS INFORMATION MANAGEMENT IN EMERGENCY DEPARTMENT

Odeda Benin-goren (1), Malka Gutrer (2), Efrat Peretz (1)

1. Emergency Department, Tel Aviv Medical Center, Tel Aviv, Israel

2. Emergency Department, Tel Aviv Medical Center, Tel Aviv, Israel

Corresponding author: odedab@tlvmc.gov.il

Keywords: Patient's Information Management, Patient's Satisfaction, Patients' Advocate

The Emergency Department (ED) provides care for patients that part of them facing stressful situation, not only because of their medical problems, but also due to the feeling of losing control in an unknown environment, while the team speaks "medical language", and the patient and his family are not familiar with those medical terms and the medical procedures. Words like "Triage", "CT", "US", and "Labs" are well known for the medical staff,

but most likely will increase the stress among our patients and their families, especially when the ED is occupied, overloaded, suffers from shortage of staff and those who are on duty cannot pay enough attention to the patients' information needs.

In Patient's Satisfaction Questioners (PSQ) that have been distributed among ED patients in Tel Aviv Medical Center (TAMC), two years ago, we found out that the lowest grade of patient's satisfaction from our ED's services belonged to the information management. Therefore the ED staff started a project of improving "Patients Information Management" (PIM) in the ED.

The most important PIM problems that were identified were related to the procedures crossroad on: triage, while taking medical history and blood tests, while waiting for results, consultations, or further interventions. PIM is also crucial in each situation where the patient's condition changes when a decision is made to hospitalize or discharge the patient from the ED.

Above all we found that one of the most essential PIM need is staff introducing to the patients with name and duty, at every crossroad (while the patient is referred to another wing of the ED, when changing the case manager or a new staff member interacts with the patients and his family.

In order to internalize the PIM process, a "pocket card" was design and provided to the staff, so they could follow the PIM guidelines and to use them in real time. Senior staff members also guided the team members and observed the staff performance. Feedback was given ad-hock.

In the same time that PIM project was set; we nominated volunteers to act as "Patients' Advocate". The volunteers were trained to be familiar with ED terminology, procedures, routines, in order to be able to provide the information to the patients and families and helping the staff in this way to promote the development of standard PIM.

The result of the intervention will be evaluated in another PSQ, and will be compared with the outcome of the PSQ made two years ago.

Po-014

Front of the Auditorium poster area

INTEGRATION OF PREHOSPITAL TEAMS IN EMERGENCY DEPARTMENTS: A WIN-WIN SOLUTION.

Julio Pedro (1), Teresa Schiappa (2), Miguel Soares-oliveira (3)

1. Member of the Board of Directors, National Institute of Emergency Medicine, Lisboa, Portugal
2. Planning Office, National Institute of Emergency Medicine, Lisbon, Portugal
3. President (Chairman) of National Institute of Emergency Medicine, National Institute of Emergency Medicine, Lisbon, Portugal

Corresponding author: teresa.schiappa@inem.pt

Keywords: prehospital, integration, efficiency

Aim/Objective

In the actual context of financial crisis, the efficiency, besides efficacy, of prehospital services is of paramount importance. Herein we discuss the mains achievements with the integration of prehospital health professionals (nurses and medical doctors) in the emergency departments.

Methods

We started integration of prehospital emergency teams during last trimester of 2011. Prospective analysis allowed us to evaluate the main impact of this project, comparing integrated units with to non-integrated units, in parameters such as: labor costs; availability of ambulances and medical doctors; number of trained personnel; and participation on transport of critically ill patients.

Results

We improve population access to advanced life support units in 29%; we diminished the inoperability rate in 25% and also improved the participation of qualified teams in the transport of critically ill patients. These integrated

teams participated in more than 1800 inter-hospital transports of critically patients. More than 700 emergency department's professionals were trained in advanced life support and in intensive care medicine, in order to participate in this process, improving their competencies and knowledge. Overtime pay decreased over 66%.

Conclusions

Integration of prehospital professionals in the emergency department teams is perfectly reachable and reduces human resource's global costs. Besides that, this project improved the availability of highly qualified professionals to both systems (prehospital and emergency departments) and, consequently, improved efficacy of them. Medical doctor's availability was also improved and a system of inter-hospital transport of critically ill patients was implemented, based on these integrated teams.

Po-015

Front of the Auditorium poster area

QUALITY ACCREDITATION PROGRAM OF NATIONAL INSTITUTE OF EMERGENCY MEDICINE (INEM)

Pedro Lavinha (1), Teresa Schiappa (2), Miguel Soares-oliveira (3)

1. Quality Office, National Institute of Emergency Medicine, Lisboa, Portugal
2. Planning Office, National Institute of Emergency Medicine, Lisbon, Portugal
3. President (Chairman) of National Institute of Emergency Medicine, National Institute of Emergency Medicine, Lisbon, Portugal

Corresponding author: teresa.schiappa@inem.pt

Keywords: Quality, safety, accreditation

Introduction

There are many dimensions with which health policies are related: population aging and demographic change, complexity of health care, technological development, empowerment of patients according to their needs and expectations and problems associated with financing, which affect the present and may condition the future. It is therefore necessary to create a system that integrates all knowledge and effort, incorporating it in the organizations, in order to enhance benefits for patients. In this way, it will be possible to comply with the recommended by health quality strategy, implementing it in each organization and thus enable the evaluation of care, seeking continuous improvement and increased effectiveness. The main objective in the accreditation of the INEM was to provide a standardization and organization of services in order to ensure the prompt and correct citizens health care, ensuring access to a quality service, in accordance with its values.

The National Accreditation Program in health, consistent with the national strategy for quality in health, and health policies defined, is understood as a tool for the development of quality strategy, and a stimulus for the application of good practice, standardised procedures of

quality and safety, risk assessment methodologies and cost-effectiveness studies, in the provision of health care.

Methodology:

The official and national Model accreditation of health units is based on the agency model of Calidad Sanitaria of Andalucía (ACSA) and is based on the concept of peer audit, supporting a self-assessment methodology that promotes teamwork and the sharing of knowledge. For each criterion, documentary evidence were presented, demonstrating the ability to comply with the necessary requirements. Information sessions were held on this program to employees of the INEM, multidisciplinary working groups were defined, they were granted access to the computer platform of accreditation, were placed all existing evidence and what the INEM was going to develop to meet the standards.

Results:

Over 12 months the working groups (consisting of professionals) have developed an intense activity and were accompanied by locally by the team in charge of the program, through fortnightly meetings, where was the evidence obtained and what improvements were needed, in the logic of continuous improvement. The INEM obtained accreditation in level "good", in October 8, 2012.

Conclusions:

Obtaining accreditation contributed to the INEM to improve continually the quality of emergency medical services, in different ways, ensuring that they adhere to internationally recognized parameters. Guarantees to citizens and health professionals that the INEM, once recognized by the competent authority, all efforts for the quality and safety of the service it provides, in terms of human resources, stimulates and promotes the participation of professionals, through the creation of multidisciplinary teams, incorporating his knowledge and experience in continuous improvement and implementation of best practices. On the economic side, allowed the streamlining of the structure and the processes used as well as faster in getting results, improving the efficiency, effectiveness and efficiency of health care practice, translating deliverables in global, integrated and safety care, and the satisfaction of users.

Po-016

Front of the Auditorium poster area

EFFECT OF FAST-TRACK UNIT ON LENGTH OF STAY (LOS) OF PATIENT IN HAZRATE_E_RASUL HOSPITAL EMERGENCY DEPARTMENT

Nader Tavakoli (1), Amir said Karimi (1), Maryam Mehrazi (2), Reza Mohamadi (3),

1. Emergency Department, Tehran University Of Medical Science, Tehran, Iran, Islamic Republic of

2. Nutrition, Shahid Behshti University Of Medical Science, Tehran, Iran, Islamic Republic of

3. Disaster Management Center, Emergency Management Center, Ministry of Health & Medical Education, Tehran, Iran, Islamic Republic of

Corresponding author: ntavakkoli@tums.ac.ir

Keywords: Length of stay(LOS), Fast-track, Emergency Department

Emergency Department is a place for all Emergent, Urgent and Non-Urgent patients. It seems that Patient Stratification according to acuity level and visit the non-Urgent patient in a fast track unit out of acute area is a good strategy. So we decided to establish a complete Fast Track Unit and compare the Patient Length of Stay (LOS) before and after Fast Track unit establishment.

In this retrospective cohort study we collect some data from the patients chart. Some indicators were documented like time of arrival to ED, time of discharge, leaving without being seen (LWBS), time to first visit by Doctor and other important times for all patients who categorized as non-urgent for two weeks before (944 patient) and two week after Fast-tracks unit Establishment (1199 patient). Finally we enrolled 2143 patient calculate LOS for all non-urgent patients. Mean of LOS time was 243 and 155 minutes before and after Fast-track establishment accordingly. There is a significant reduction in LOS and LWBS after fast-track establishment. (p<0.05)

We concluded that a good Fast Track unit establishment could be an important factor in reduction of LOS and LWBS in the Emergency department .

Po-017

Front of the Auditorium poster area

WHAT ARE THE CHARACTERISTICS OF VICTIMS OF ROAD ACCIDENTS DURING 2011-2012: TWO YEARS ANALYSIS IN A THIRD LEVEL UNIVERSITY EMERGENCY DEPARTMENT

Nurdan Acar (1), Filiz Baloglu Kaya (1), Seyhmus Kaya (2), Arif Alper Cevik (1), Engin Ozakin (1)

1. Emergency department, Eskisehir Osmangazi University, Eskisehir, Turkey

2. Emergency department, Eskisehir State Hospital, Eskisehir, Turkey

Corresponding author: nn_ergun@yahoo.com

Keywords: accident, victim, motor vehicle

Objective: We describe victims of road accidents characteristics during 2011-2012 in a third level university hospital emergency department (ED). We want to point out the features will be prevented about MVA.

Method: Between time period of Jan 1st 2011 to Dec31st 2012, we analyzed victims and their features on the road accidents in a the ED.

Results: For the two years, total 664 victims of road accidents were treated in the emergency department. Mean age of victims was 39,74±15,48 (18- 87). There were 239 (35.99%) female patients and mean age of them 38.44±15,27 (18-83). Mean age of 425 (64,00%) male patients was 40,48±15,58 (18-87). Patients mostly visited ED in May, June, July (12,6%, 15,6%, 17,2% respectively).

Patients were mostly accepted to ED at 04:00- 11:59 pm (46,1%). 588 (88,6%) patients had 15 of GKS, 19 (2,9%) had 3 of GKS, 16 (2,3%) had 14 of GKS. 485 (73,0%) patients had zero blood alcohol level. One of two patients with 600 mg/dL blood alcohol was driver at the same time. Although 73,0% of accidents was motor vehicle accidents, percent of use of seat belt was just 9,1%. Whole body CT was used 37,5%. Commonly seen injuries respectively were 335 (50,5%) extremity, 325 (42,9%) head, 162 (24,4%) thorax, 70 (10,6) abdomen, 48 (7,2%) neck, 37 (5,6%) vertebra and 36 (5,4%) pelvis. While 59,33% of patients were followed in ED, 19,4% of them were hospitalised in to intensive care unit and 18,3% were hospitalized in to various wards. Rates of hospitalisations were 28,2% orthopaedic, 24,6% neurosurgery, 17,9% thoracic surgery, 7,9% plastic and aesthetic surgery, 7,1 general surgery and 7,1% anesthesia clinics. 15 (2,3%) of patients were dead in ED and 13 of them was male.

Conclusion: Victims on the roads were affected by motor vehicle accidents. Almost half of them were treated successfully in the ED. Others were affected seriously. Traffic rules on the roads must be put in to practice more deterrently by government. People have to obey this rules more carefully.

Po-018

Front of the Auditorium poster area

THE EFFECT OF EDUCATION ON KNOWLEDGE AND STRATEGIES FOR DEALING WITH ACUTE CORONARY SYNDROME IN HOSPITALS AFFILIATED TO TEHRAN IN SOCIAL SECURITY

Farzana Bassiri Graduatez (1), Moshtagh Eshgh Zahra (2) Fatemeh Hosseini kasnavieh (3), Mohammad Hosseini kasnavieh (4), Soudabeh Jalali Nodoushan (5)

1. Emergency Department, Islamic Azad University of Tehran, Tehran, Iran, Islamic Republic of
2. Emergency Department, Islamic Azad University of Tehran, Tehran, Iran, Islamic Republic of

Corresponding author: mhoseini1346@gmail.com

Keywords: Effect of Education, Acute Coronary Syndrome, Knowledge - Practice

The effect of education on knowledge and strategies for dealing with acute coronary syndrome in hospitals affiliated to Tehran in social security

Author: F. Bassiri graduate student at Islamic Azad University of Tehran

Keywords: Effect of Education - Acute Coronary Syndrome - Knowledge - Practice

abstract: Introduction. Acute coronary syndrome, including coronary heart disease The range of diseases, including unstable angina, myocardial infarction, with or without STS segment elevation ECG. Nurses are an important member of the emergency team To solve problems related to health

care. of Education is a low cost and minimal impact on increasing knowledge and practice nurses . Research study on the impact of education on knowledge and strategies for dealing with acute coronary syndrome in the emergency nursing staff The first person who will visit the sick in hospitals, social security Tehran.

Methods: A quasi-experimental study. Those 45 nurses were selected by simple random sampling. Instruments for gathering data and questionnaire construction is achieved checkList. The questionnaire consisted of 23 questions with multiple questions set. Values given for the correct answer and a wrong answer was zero. Check performance list included 10 items and the positive performance against a zero value were considered negative performance. Questionnaire and check list was completed before training and one month after training. And these data were compared. Analysis software was used, spss (V18). The statistical test used Mcnemar test and Paired t-test.

Results: The mean scores obtained before and after training knowledge questionnaire and the Chek practice showed a significant difference (P <0/0001)

Conclusion: The knowledge and practice of nurse education has been effective. Results from this study can be used in the field of nursing

Po-019

Front of the Auditorium poster area

ALEXANDRIA UNIVERSITY EMERGENCY DEPARTMENT AT A GLANCE.

Asmaa Alkafafy

Emergency medicine and traumatology, faculty of medicine Alexandria university Egypt, Alexandria, Egypt

Corresponding author: aalkafafy@yahoo.com

Keywords: emergency medicine, Alexandria university, job description of emergency physician

Aim of work: A review of the Emergency Department (ED) in the faculty of medicine Alexandria in university in order to: 1. Evaluate the load of cases presenting to the emergency department in order to identify the causes behind the encountered problems in patients' care and consequently provide better medical service and better clinical outcomes. 2. Highlight the emergency physician's job description as emergency medicine is a new evolving specialty in Egypt. Methods: the number of cases admitted in Alexandria Main University hospital was counted retrospectively in the past 5 years starting from the year 2007 till 2011, then the number of cases admitted in the emergency department was compared to that in the other hospital departments. Results: The average number of cases admitted to Alexandria emergency department per year in the past 5 yrs (2007-2011) was about 21,637 cases/yr which was around 52% of the total hospital admissions compared to all the hospital departments per yr and equivalent to about 1800 cases per month i.e. around 60 case admissions per day. Of note; the cases admitted in

the critical care department, the burn unit, the gangrene unit, the toxicology unit, the renal dialysis unit and the haematemesis unit are all admitted through the emergency department. The numbers stated excluded the cases which received simple treatments and discharged home from the emergency department without hospital admission. Discussion: the emergency department in Alexandria Main University Hospital serves 3 big Egyptian governorates which are Alexandria, Elbehera and Matrouh. The emergency department in AMUH is divided into 4 units: The triaging area, resuscitation room, surgical ED and medical ED. The total number of beds is around 70 beds (58 in the surgical and medical ED, 9 in the triaging area and 3 in the resuscitation area). The maximum duration of stay in the different ED units vary; in the triaging area averages between 30 minutes to 1 hour while in the resuscitation area the duration of stay is 2 hours maximum, as for the surgical or medical ED the maximum duration of stay is 24 hours. The emergency medicine speciality is not merely administrative, it's neither a substitution to the emergency room clerk in a professional way nor a parasitic speciality aiming to reap the fruit of other specialities as for example airway management from the anaesthesia or caring for the critically ill patients from the critical care. As emergency medicine is an evolving speciality in Egypt, we as emergency physicians are fighting to achieve. We manage the ABCs and provide efficient first aid to almost all the acutely ill or injured cases that we face. We are able to provide advanced life support, trauma life support and resuscitate arrested patients, but we are not satisfied and we are looking for more qualifications and specialization academically and clinically. Conclusion: although the emergency department is bearing the heaviest workload in Alexandria Main University Hospital, this is not appreciated and the medical service provided is not the optimum, therefore, more support should be provided to help this new speciality in Egypt to grow up and provide the best care. Such support should attack different aspects, as the hospital policies for admission in and evacuation of the emergency department, the policies of referral to other hospitals in cases the hospital beds are occupied to the maximum limits and more importantly the academic development of the emergency staff members, clinical training and specialization of both the emergency staff members and the emergency residents. A due concern and support should be paid at a high political level to the development of efficient emergency medicine because it is a speciality that deals with the patients in the most critical and acute situations in their lives, a speciality which affects the diagnosis and prognosis of all patients, a speciality where time means life and finally a speciality that greatly influences the efficiency of the medical service provided by all the other medical specialities.

Po-020

Rez de Jardin poster area

RESPIRATORY DRIVE MANAGEMENT

Samira Esfandyari (1), Mohammad Kalantari Meibodi (2)

1. pediatric ward, student research committee Shiraz medical science, Shiraz, Shiraz, Iran, Islamic Republic of
2. emergency medicine, Shiraz medical university, Shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: Drivers-, airway, management

Background: airway skills are perhaps the most important skills that an emergency physician possesses. The new techniques that used to find the airway let the physicians to save the golden time and decrease the mortality rate. In this paper we studied a systematic review on the articles that introduced these methods.

Method: we conducted a systematic review on 10 cohort studies from Barcelona university, Alabama university, Virginia university and Singapore university where have been done during 2003 to 2006 and the published results are existing on line in the internet.

Results: the finding from this systematic review indicate that before intubation we should know the case of death or near death of patients. If patient is near death we should determine that his or her airway is difficult or not. The no difficult airway leads to RSI (rapid sequence intubation) and if the case is difficult airway the approach depends on the saturation of blood oxygen where used BMV (bag mask ventilation)-Awake technique or LMA (larangeal mask airway) or cricothyrotomy or blind nasotracheal.

For near death ones (crash airway) first BMV is recommended to use and then try to intubate. If its not successful we would consider failed airway and use BMV and then cricothyrotomy.

Conclusion: it is necessary for emergency physician to learn to work with this instrument because management of airway is the first duty of emergency medicine and emergency physician should decide about personal workers management in emergency department and using each instrument in the best way

Po-021

Rez de Jardin poster area

ACUTE ANGIOEDEMA IN PATIENT WHO RECEIVED KETAMINE AND SUCCINYLCHOLINE: A CASE REPORT

Farnia Mohammad Reza (1), Morteza Saedi (1)

1. Emergency department, Shariati Hospital, Tehran, Iran, Islamic Republic of

Corresponding author: m-farnia@tums.ac.ir

Keywords: angioedema, ketamine, succinylcholine

Introduction:

Although other specialists are sometimes available, most emergency airways are managed by emergency clinicians. Airway management in the emergency department is much different from airway management in the controlled setting

of the operating room. There are many situations that require emergency tracheal intubation. Rapid sequence intubation (RSI) is a standard approach to tracheal intubation in the emergency department. Several drugs have been used in this procedure which depend on the patient physiologic conditions and underlying diseases. Different adverse drug reactions have been reported in this procedure that some of them are common and others are rare. Physician should aware of possible complications and know how to manage them.

In this paper we report a case of acute angioedema after administration of ketamine and succinylcholine during RSI in a patient who admitted to the ED with diagnosis of septic shock.

Case Scenario :

A 26-year-old woman ,a known case of cerebral palsy was admitted to the emergency department due to fever and respiratory distress. She has been taken Sodium valproate and Gabapentin because of past history of epilepsy. She admitted to the ED after three days of starting fever, cough and purulent sputum.No recent seizure was happened. On admission, the patient had tachypnea, hypotension, tachycardia, decreased level of consciousness and high fever (body temperatures: 38.9 ° C, heart rate: 122 /min, respiratory rate: 42 /min and blood pressure :70/50) . Decreased urine output have been happened one day before admission. Initial room air arterial oxygen saturation (Spo2) was 73% and after administration of supplynig oxygen with face mask it raised to 80%. Course Crackles was heard by auscultation in both sides of lungs, especially on the right. ABG was shown metabolic acidosis and hypoxemia.

After primary evaluation of the patient we found that the patient needs tracheal intubation for respiratory support and decreasing the danger of aspiration . With considering of unstable hemodynamic conditions and lack of etomidate in our ED, we decided to use ketamine as sedative-hypnotic agent plus succinylcholine for induction .

After pre-oxygenation ,75 mg ketamine and 75 mg succinylcholine was administered (patient's body weight was about 50 kg). After about 30 seconds, suddenly, the patient experienced swelling of the face, lips and tongue so that the tongue was completely came out of the mouth that causes laryngoscopy and tracheal intubation to be impossible. Bag mask ventilation and try to maintain arterial oxygen saturation in desirable level was not successful. Emergency cricothyrotomy was done and intravenous epinephrine and hydrocortisone was administered.

After about 10 minutes, swelling of throat and tongue decreased and laryngoscopy became possible, thereafter tracheal intubation was done successfully and the patient placed under mechanical ventilation.

Discussion:

Endotracheal intubation in ED is a challenge that is different from a fasted patient in the operating room.Several drugs are routinely used for induction of anesthesia prior to intubation in the ED. Selection of a specific drug largely depends on the experience of the physician and the patient's clinical status. ketamine is a hypnotic drug and easily penetrates to the CNS. Ketamine increases BP and HR

due to release of catecholamines and could be a good choice in hypotensive patients. Common side effects of Ketamine are emergence phenomena, increased ICP and increased bronchial secretions.

Muscle-paralyzing drugs are used for muscle relaxation that cause laryngoscopy to be easier for the physician. Succinylcholine commonly used for muscle paralysis in the ED and common side effects that listed for succinylcholine include hyperkalemia, malignant hyperthermia, fasciculation, bradycardia in children, Master spasmodic and increased IOP.

Although angioedema and anaphylaxis are not common side effects of these drugs, however, rarely happen. In this case, the possibility of a drug-induced angioedema (ketamine or succinylcholine) is shown.

Therefore, physicians should prepare to deal with possible complications and know how to manage them, because in emergent situation if physicians were not aware of possible threats to the patient, could not overcome them.

Po-022

Rez de Jardin poster area

ALTERNATIVE FOR FAILED RAPID SEQUENCE INTUBATION IN TRAUMA PATIENTS

Radu Ioan Sinea (1)

1. Anesthesie, SRH Klinikum am Wald, Gera, Germany

Corresponding author: sinearadu@yahoo.com

Keywords: rapid sequence intubation, Equipment,airway, Respiratory emergencies

Discussion:

Key concepts in the trauma airway

- The four-question assessment tool is a valuable aid in assessing the need for intubating a trauma patient:

1. Is there failure of airway maintenance or protection?
2. Is there failure of oxygenation?
3. Is there failure of ventilation?
4. Is there an anticipated need for intubation?

- Difficult airway management can often be predicted by the airway assessment mnemonic, LEMON:

L = Look externally

E = Evaluate the 3-3-2 rule

M = Mallampati

O = Obstruction N = Neck mobility

- While RSI is generally considered the standard in the emergency management of the airway, it is prudent to consider other options with a very high-risk airway and always have a "Plan B" rescue option, including the ability to create a surgical airway by cricothyroidotomy.

Learning points:

Other options besides standard RSI

The prudent emergency physician should acquire skills in using adjuncts to assist RSI, as well as develop familiarity with other airway techniques that may be used in place of RSI, or as rescue techniques in the case of the failure of RSI:
- awake intubation

- retrograde intubation
- laryngeal mask airways (LMA)
- combitube and laryngeal tube
- lighted stylet intubation
- semi-rigid fiberoptic stylets
- nasal and orotracheal intubation over a flexible fiberoptic
- rigid fiberoptic laryngoscopy
- video-assisted laryngoscopy
- blind nasotracheal intubation
- transtracheal jet ventilation
- surgical airways (cricothyroidotomy)
- bougie assisted intubation.

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Po-023

Rez de Jardin poster area

MINITRACHEOSTOMY IN TREATING TRAUMATIC CERVICAL SPINAL CORD INJURY AFTER ANTERIOR CERVICAL FUSION

Yuji Maeda (1), Yasunori Iwasaki (2), Yasuyuki Kuwagata (1), Hiroyuki Nakao (3), Toshio Nakatani (1)
1. Department of critical care medicine, Kansai Medical University, Osaka, Japan
2. Surgery, Iwasaki Hospital, Kagawa, Japan
3. Emergency department, Tokyo University Hospital, Tokyo, Japan

Corresponding author: maedayu@takii.kmu.ac.jp

Keywords: spinal injury, minitracheostomy, anterior cervical fusion

Background Patients with cervical spinal injury may frequently require both anterior cervical spine fusion and tracheostomy. Despite the close proximity of the two surgical incisions, we postulated that minitracheostomy could be safely performed after anterior cervical fixation. In this study, we examined the effectiveness, duration and complications of the minitracheotomy.

Patients and Methods We performed cricothyroidotomy (Mini Track, Portex) as a minitracheotomy. Minitracheotomy was undertaken in 5 adult patients who diagnosed cervical spinal cord injury admitted between August 2007 and June 2012. After anterior cervical fixation, all patients underwent minitracheotomy, within 2 weeks.

Results There were 4 men and a woman. 4 men were derived from trauma, a woman was derived from infection. We performed the minitracheotomy postoperatively, 1 on day 5, 1 on day 6, 1 on day 10, 2 were on day 11 (mean 8.6 day). The duration time of the minitracheotomy is 12 to 41 days. Related to this procedure, there was not severe infectious complication but also vomiting and bleeding. A case underwent

reintubation due to worsening of atelectasis. The patient underwent minitracheotomy again after 9 days later, and he could breathe spontaneously without mechanical ventilation. No one needed conventional tracheostomy.

Discussion There is no standard theory concerning the indications, index of the intubation and extubation of the minitracheotomy.

Conclusion From the view of wound union and anterior spine stabilization, conventional tracheostomy has been recommended after anterior cervical surgical procedure. But, recently, 2 reports have been made, that it is not significant that the complication rate of percutaneous tracheostomy within 2 weeks after anterior cervical surgical procedure. The minitracheotomy is very useful and convenient for the postoperative spinal injury patients. There was no infectious complication of minitracheotomy. We may consider minitracheotomy for airway management after anterior cervical surgical within 2 weeks.

Po-024

Rez de Jardin poster area

EDUCATION IN EMERGENCY AIRWAY MANAGEMENT: CAN PRE-HOSPITAL GLIDESCOPE® VIDEOLARYNGOSCOPY BY PARAMEDICS INCREASE INTUBATION SUCCESS RATES?

Clemens Kill (1), Tim Jaecker (2), Tillmann Coxhead (3), Elisabeth Boesl (4), Joachim Risse (2), Hinnerk Wulf (3), Wolfgang Dersch (5)

1. Dept of Emergency Medicine, Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany
2. Dept of Emergency Medicine, Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany
3. Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany
4. Dept of Emergency Medicine, Philipps-University, Marburg, Germany
5. Dept of Emergency Medicine, Dept of Anesthesia and Critical Care, Philipps-University, Marburg, Germany

Corresponding author: killc@staff.uni-marburg.de

Keywords: airway management, Videolaryngoscopy, paramedics

Objective

Endotracheal intubation (ET) remains the gold standard for securing the airway despite the advent of supraglottic airway devices (SGA). The main contraindication to the use of SGA is the increased risk of regurgitation (1). However, conventional ET requires extensive experience to yield high success rates (2,3). Videolaryngoscopy often improves the preconditions for ET. The objective of this study was to investigate whether the use of GlideScope® videolaryngoscopy by persons with no prior airway management experience could increase the success rate of ET and reduce the incidence of secondary injury to the patient.

Method

Following approval by the ethics commission, 36 paramedic trainees without any previous airway management

experience were recruited. Trainees with previous experience were excluded. The test persons were randomly assigned to two groups: either the "Mac" group (using Macintosh intubation blades) or the "GS" group (using GlideScope® videolaryngoscopes). Each group consisted of 18 persons who were instructed by means of a teaching video. Each test person was then allowed ten intubation attempts applying the assigned method to an airway trainer (AMT, Fa. Laerdal). The primary end-point was defined as the final position of the endotracheal tube after the test person had put down the laryngoscope. A successful intubation was defined as correct insertion of the endotracheal tube into the trachea within 90 seconds. The cuff had to be positioned below the vocal cords and above the carina. Dental trauma had to be avoided.

The primary end point was statistically analyzed by binary logistic regression. Gender and age differences among the test persons were analyzed by a two-tailed T-test. The Mann-Whitney-U-Test was used for comparing the two groups and the Wilcoxon-signed-rank-test compared measurements within each group. The distribution of data relating directly to the procedure was determined by chi square testing.

Results

There was no significant age or gender difference among the test persons ($p=0.68$ and $p=0.61$). The endotracheal tube was introduced correctly into the trachea in 153 (85%) out of 180 attempts in the „Mac“ group and in 174 (97%) out of 180 attempts in the "GS" group. Intubation attempts 1-3: In the „MAC“ group 38 (70%) out of 54 attempts were successful, in the „GS“ group 50 (93%) out of 54. Intubation attempts 4-7: In the „MAC“ group 64 (89%) out of 72 attempts were successful, in the „GS“ group 72 (100%) out of 72. Intubation attempts 8-10: In the „MAC“ group 51 (94%) out of 54 attempts were successful, in the „GS“ group 52 (96%) out of 54. Overall, the actually chosen method of intubation proved to be a significant factor influencing the success rate of ET ($p=0.002$). Furthermore, misplacement of the endotracheal tube into the oesophagus went significantly less frequently unrecognized in the "GS" group compared with the "Mac" group ($p<0.001$).

Concerning the mean time required for the first and last three intubation attempts, there was no significant difference between the two groups. The „Mac“ group showed median values (first and third quartile) of 17 seconds (13/28) for the first three attempts, the „GS“ group 20 seconds (13/39) ($p=0.174$). The median values obtained for intubation attempts 8-10 were 10 seconds (9/13) in the „Mac“ group and 9 seconds (6/14) in the „GS“ group ($p=0.177$). However, differences were significant within each group („Mac“ $p=0.006$ and „GS“ $p=0.001$).

Conclusion

Persons inexperienced with airway management can achieve significantly higher intubation success rates on airway trainers by using a GlideScope® videolaryngoscope compared with a conventional Macintosh laryngoscope. Hence, the routine use of GlideScope® videolaryngoscopy in an emergency setting could prove advantageous for health care professionals especially when inexperienced.

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Po-025

Rez de Jardin poster area

THE EFFECTS OF EMERGENCY AIRWAY MANAGEMENT WAS USED FLEXIBLE BRONCHOSCOPE FOR THE ENDOTRACHEAL INTUBATION IS INVESTIGATE

Arif Duran (1), Tar?k Ocak (1)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Orotracheal intubation, Bronchoscopy, airway

Objective: Endotracheal intubation is a procedure frequently applied in patients ventilated for a long time in intensive care and in emergency conditions. Different intubation types have been defined. This study has been planned to study the effect of the intubation under flexible bronchoscopic monitorization on patients' values due to the evolution of the importance of intubation with bronchoscopy in last years.

Material & Method: With the authorization of local ethics committee, the patients who applied to the emergency unit and for whom intubation has been decided between 06.01.2012-02.28.2013 have been included in the study. The group which has been intubated classically is the group A and the group which has been intubated by bronchoscopy is the group B. The patients' information has been recorded in the forms prepared in that purpose. Data have then been analyzed with Spss 17.0 software.

Observations: A total of 34 patients have been included in the study. The age distribution were $68,94 \pm 16,37$ (10 men 9 women) and $63,73 \pm 1,99$ (7 men 8 women) for group A and group B respectively. The durations of the operation were $5,78 \pm 2,32$ and $12,66 \pm 2,43$ minutes for group A and group B respectively and the difference was statistically significant ($p<0,05$). While there was no difference in saturation values before the operation, in the 5th minute after the operation, saturation values have been observed to be statistically higher in group A ($p<0,05$).

Result: The application of traditional intubation by individual who get formation about endotracheal intubation is more efficient on patients' values. The intubation performed with bronchoscopy is realized later even in experienced staff due to the duration and the procedure and this affects the patient's values. It is an efficient method when used by experienced staffs on patients who needs complicated intubation.

Po-026

Rez de Jardin poster area

DETERMINATION OF ACCURACY IN EMERGENCY DEPARTMENT DOSING FOR RAPID SEQUENCE INTUBATION

Heidi Ashbaugh (1), Leslie Simon (2), Carmen Smotherman (1), Dale Kraemer (1), Colleen Kalynych (1)

1. Emergency Medicine, University of Florida, Jacksonville, United States

2. Emergency Medicine, University of Florida/ Mayo Clinic, Jacksonville, United States

Corresponding author: lesliesimon@hotmail.com

Keywords: Rapid sequence intubation, paralytic dosing, succinylcholine

Study Objectives: Rapid Sequence Intubations (RSIs), which are dosed based on weight, occur in emergency departments (ED) every day. Since patients often cannot be weighed in the ED prior to RSI, medications are administered according to presumed or guessed weights by emergency physicians. Studies have shown that underdosing patients may cause difficulties with intubation, prolong the intubation or require redosing of medications. This retrospective study aimed to determine how often physicians underdose RSIs and factors that may be associated with failed attempts at intubation.

Methods: As part of the department's quality improvement (QI) project to monitor intubation cases, EM physicians were asked to complete QI forms to review intubation cases. After IRB approval, we utilized this database to identify patients >18 yrs of age intubated in the ED and subsequently admitted into the hospital between January 1, 2012 and August 30, 2012. Through the QI forms and completion of a retrospective chart review, 195 patients' data were collected to include RSI drug utilized, dose of medications, estimated weight by MD, number of attempts at intubation and level of training of physician intubating, reason for intubation (medical vs. trauma), recorded ICU height and weight, and whether the MD felt the patient presented as a difficult airway. We compared the dosage of medications to set guidelines as defined as: succinylcholine 1.5mg/kg (Actual Body Weight) and rocuronium 1mg/kg (Ideal Body Weight calculated as [men]= 50 + 2.3 (Height (inches)-60) and [women]= 45.5 + 2.3 (Height (inches)-60). Twenty-six patients' data were incomplete and 2 were duplicates, 13 did not receive paralytics, leaving 154 for analysis. Patients underdosed by >10% were compared to those not and factors associated with failure attempts between groups were assessed: age, gender, suspected difficult airway by MD, year of training or attending. The differences between groups were assessed using Chi-square or Fisher's Exact tests for categorical variables, and using non-parametric Wilcoxon Rank Sum tests for continuous variables. The significance level was .05.

Results: Of the 154 patients, 65 (42%) received rocuronium and 89 (58%) received succinylcholine. Twenty-nine

patients were underdosed vs. 125 who were not; 28 (97%) received succinylcholine vs. 1 (3%) received rocuronium ($p<.0001$). Although not statistically significant, only 14% of patients who were underdosed had a first attempt failure by the provider vs. 8% who were not underdosed ($p=.286$). Age of the patient, gender, race, year of training or attending, and prediction of a difficult airway by the physician or reason for intubation (medical vs. trauma) were not significantly associated with first attempt intubation failures.

Conclusion: This study suggests that we significantly underdose the paralytic

Po-027

Rez de Jardin poster area

THE VALUE OF SCUBE-1 AND OXIDATIVE STRESS PARAMETERS IN THE DIAGNOSIS OF ACUTE MESENTERIC ISCHEMIA

Abdulkadir Gunduz (1), Ahmet Mentese (2), Seda Mentese (1), Kutay Saglam (3), Suleyman Turedi (4), Suha Turkmen (1), Aysegul Uzun Sumer (2), Esin Yulug (5)

1. Department of Emergency Medicine, KTU School of Medicine, Trabzon, Turkey

2. Department of Medical Biochemistry, KTU School of Medicine, Trabzon, Turkey

3. Department of General Surgery, KTU School of Medicine, Trabzon, Turkey

4. Department of Emergency Medicine, KTU School of Medicine, Trabzon, Turkmenistan

5. Department of Histology and Embryology, KTU School of Medicine, Trabzon, Turkey

Corresponding author: drsuhaturkmen@hotmail.com

Keywords: Mesenteric ischemia, oxidative stress, SCUBE-1

Objectives: This study investigated the diagnostic value of signal peptide-CUB-EGF domain-containing protein 1 (SCUBE-1) and other oxidative stress parameters in the early diagnosis of acute mesenteric ischemia (AMI), which has high mortality and morbidity if not identified and treated in the early period.

Methods: Thirty-six female Sprague-Dawley rats were used in this randomized, controlled study. Rats were divided into six groups: three control (Group I, III and V) and three ischemia (Groups II, IV and VI). In the control groups, blood and tissue specimens were sampled at 30 minutes (Group I), 2 hours (Group III) and 6 hours (Group V) following a simple laparotomy. In the ischemia groups, the superior mesenteric artery (SMA) was ligated following laparotomy, and blood and tissue samples were taken sampled at 30 minutes (Group II), 2 hours (Group IV) and 6 hours (Group VI).

Results: At comparison of the ischemia and control groups, the difference in SCUBE 1, MDA and TAS levels in the 30-min period was not significant ($p>0.05$); at 2-hour, SCUBE 1 levels rose rapidly, and although the desired level of

significance could not be obtained with Bonferroni correction, the level was significantly higher compared to the control group at the same time interval (for SCUBE-1, Group III versus Group IV, $p=0.006$). In these periods, only TOS and OSI values were significantly higher in the ischemia group compared to the control group (for both, $p=0.004$). A pronounced rise in SCUBE 1 levels was determined with 6-hour AMI (for SCUBE 1, Group V versus Group VI, $p=0.004$). The changes in MDA, TAS, TOS and OSI levels were not significant ($p=0.025$, $p=0.321$, $p=0.006$ and $p=0.037$, respectively).

Conclusions: SCUBE 1 levels have the potential to be used as a marker of early period injury in AMI, although it is impossible to state explicitly that they can be used in the early diagnosis of AMI. A similar state of affairs applies to plasma MDA and TAS levels. We think that TOS and OSI levels, however, can be used in early diagnosis and as an injury marker. Moreover, OSI also exhibits a medium-strong correlation with histopathological injury.

Po-028

Rez de Jardin poster area

THE ROLE OF THE OXIDIZED-LDL LEVELS IN DIAGNOSIS OF THE ACUTE MESENTERIC ISCHEMIA

Sedat Kocak (1), Tarik Acar (2), Basar Cander (1), Sadik Girisgin (1), Mehmet Gul (1), Kenan Yavuz (1)

1. Emergency department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

2. Emergency department, Turkish Ministry of Health, Ordu University Training and Research Hospital, Ordu, Turkey

Corresponding author: skocak@konya.edu.tr

Keywords: oxidized-LDL, acute mesenteric ischemia, biomarker

Objective: Due to delays in the diagnosis of acute mesenteric ischemia (AMI), mortality rates continue to be high. The present study explored the diagnostic performance of oxidized LDL (Ox-LDL), which has proinflammatory and atherogenic properties, in an AMI model with rabbits. Correlations with interleukin-6 (IL-6) and CRP levels were assessed.

Methods: Twenty six New Zealand rabbits were divided into 3 groups in the study. Baseline blood (0 hour) was drawn from the control group ($n=7$) and then at the 1st, 3rd and 6th hours. Blood was drawn from the sham-operated group ($n=10$) after a simple laparotomy and from the ischemia group ($n=9$) in the same time frame, following a simple laparotomy and superior mesenteric arterial ligation. Serum Ox-LDL, IL-6 and CRP levels were measured in all of the blood samples and the markers were evaluated in terms of their relation to time. ROC curves were plotted and the AUC was estimated for each hour in order to determine the diagnostic capability of the serum Ox-LDL levels.

Results: A significant drop was observed in levels when Ox-LDL values at the 1st, 3rd and 6th hours in the sham-operated group were compared with the baseline (0 hour) values of the control group ($P<0.05$). In the ischemia group,

although Ox-LDL levels were not statistically significant, a rise in values was observed, particularly at the 6th hour. Ox-LDL values were found 18.0 ng/ml, 20.1 ng/ml, 20.2 ng/ml, 24.7 ng/ml at baseline and 1., 3. and 6. hours, respectively. For the sixth hour of the ischemia group, the AUC was 0.980 (95% CI: 0.939-1.022) and the optimal Ox-LDL cut-off value of 16.5 ng/mL had a sensitivity of 89% and specificity of 82%. The differences between baseline levels and levels at the 1st, 3rd and 6th hours were found to be statistically significant for CRP in both the sham and ischemia groups ($P<0.05$). While the difference between IL-6 baseline levels (0 hour) and levels at the 3rd and 6th hours were significant ($P<0.05$) in the sham-operated group, the ischemia group displayed statistically significant differences between IL-6 baseline levels (0 hour) and levels at the 1st, 3rd and 6th hours ($P<0.05$).

Conclusions: Ox-LDL levels in the AMI model exhibited a gradual rise in a 6-hour period. This increase was particularly pronounced at the 6th hour and was consistent with the rise in CRP and IL-6 levels. The increases however were not found to be statistically significant. The results indicate that more extensive clinical data must be collected to conclude that Ox-LDL may be beneficial in the early diagnosis of AMI.

Po-029

Rez de Jardin poster area

LIPOPROTEIN-ASSOCIATED PHOSPHOLIPASE-A2 MAY BE DIAGNOSTIC MARKER FOR ACUTE MESENTERIC ISCHEMIA

Tarik Acar (1), Sedat Kocak (2), Mehmet Ergin (2), Basar Cander (2), Cesareddin Dikmetas (2), Emin Fatih Visneci (2)

1. Emergency department, Turkish Ministry of Health, Ordu University Training and Research Hospital, Ordu, Turkey

2. Emergency department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

Corresponding author: skocak@konya.edu.tr

Keywords: Lipoprotein-associated phospholipase-A2, acute mesenteric ischemia, biomarker

Objective: Acute mesenteric ischemia (AMI) continues to be a problematic condition due to the difficulty in diagnosis and because of high mortality rates. The present study uses an experimental AMI model to compare the diagnostic potential of lipoprotein-associated phospholipase-A2 (Lp-PLA2), currently recognized as an inflammatory marker, with other inflammatory markers such as IL-6 and CRP.

Methods: In the study, 26 New Zealand rabbits were divided into 3 groups. Baseline blood (0 hour) was drawn from the control group ($n=7$) and then at the 1st, 3rd and 6th hours. Blood was drawn from the sham-operated group ($n=10$) after a simple laparotomy and from the ischemia group ($n=9$) in the same time frame, following a simple laparotomy and superior mesenteric arterial ligation. Serum Lp-PLA2, IL-6 and CRP levels were measured in all of the

blood samples and the markers were evaluated in terms of their relation to time. ROC curves were plotted and the AUC was estimated for each hours in order to determine the diagnostic capability of the serum Lp-PLA2 levels.

Results: Lp-PLA2 values of the ischemia group were found 36.5 ng/ml, 55.4 ng/ml, 69.0 ng/ml, 82.0 ng/ml at baseline and 1., 3. and 6. hours, respectively. The difference between baseline levels of Lp-PLA2 and the levels at the 3rd hour and between baseline levels and the levels at the 6th hour in the ischemia group were significantly high ($P < 0.05$). For the sixth hour of the ischemia group, the AUC was 0.690 (95% CI: 0.463-0.916) and the optimal Lp-PLA2 cut-off value of 40.9 ng/mL had a sensitivity of 66.7% and specificity of 76.5%. The differences between baseline levels (0 hour) and levels at the 1st, 3rd and 6th hours were found to be statistically significant for CRP in both the sham and ischemia groups ($P < 0.05$). While the difference between IL-6 baseline levels (0 hour) and levels at the 3rd and 6th hours were significant ($P < 0.05$) in the sham-operated group, the ischemia group displayed statistically significant differences between IL-6 baseline levels (0 hour) and levels at the 1st, 3rd and 6th hours ($P < 0.05$).

Conclusions: Lp-PLA2 blood levels rose as from the first hours of AMI. This increase was consistent with the increases in CRP and IL-6 levels. The results show that Lp-PLA2 may be used by itself or together with other markers in the early diagnosis of AMI. There is a need for more extensive clinical studies.

Po-030

Rez de Jardin poster area

THE EFFECT OF ZINC SUPPLEMENTATION ON CIGARETTE SMOKE-INDUCED NEPHROTOXICITY IN RATS

Arif Duran (1), Zeynep Ocak (2), Tarık Ocak (1), Elçin Hakan Terzi (3), Alim Erdem (4), E. Mevlüt Kocaman (2)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

2. Department of Medical Genetics, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

3. Department of Histology and Embryology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

4. Department of Cardiology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Smoke, renal injury, zinc, cytokine gene expression, TLR gene expression

Purpose: The aim of our study was to investigate the effect of zinc-supplemented diet on the cigarette smoke-induced changes on toll-like receptor (TLR), nuclear factor of kappa light polypeptide gene enhancer in B-cells (NFkB) and cytokine gene expression in renal tissue of rats.

Material and Method: A total of 24 Wistar albino rats were allocated into four groups as group A: non-smoke controls (n : 6), group B: non-smoke+zinc (n : 6), group C: smoke (n

:6), and group D; smoke+zinc (n : 6). RNA isolation was performed from the renal tissues of the rats which were sacrificed at the end of the 12th week. The expression levels of TLR2, TLR4, NFkB1, NFkB2 and interleukin 1 alpha (IL1A), interleukin 10 (IL10) genes were evaluated using the Reverse Transcription Polymerase Chain Reaction (RT-PCR). In addition, these tissues were examined histopathologically and the direct protective effect of zinc on these tissues was investigated.

Results: While no significant difference was found between the groups in terms of TLR2 and TLR4, NFkB1 and NFkB2 gene expression levels, a significant difference was found in IL1 and IL10 gene expression levels in all groups. As a result of the histopathological assessment, a statistically significant difference was detected between Group A and Group C, D in terms of hemorrhage, congestion, inflammation, glomerular atrophy and tubular injury ($p < 0.05$).

Conclusion: This study demonstrates that zinc supplementation may have a protective effect from cigarette smoke-induced nephrotoxicity in rats.

Po-031

Rez de Jardin poster area

ROLE AND USEFULNESS OF CARDIAC TROPONIN IN THE EMERGENCY DEPARTMENT.

Stefania Vigolo, Gianna Vettore, Angela Pompea Fraiese, Alberta Scudeller, Serena Rizzini, Franco Tosato

Emergency Department, Padua Hospital, Padua, Italy

Corresponding author: stefyfox@gmail.com

Keywords: CARDIAC TROPONIN, CARDIOVASCULAR DISEASE, EMERGENCY DEPARTMENT

Background: cardiac troponins have become the gold standard for diagnosing myocardial infarction. An increased value for cardiac troponin is defined as a measurement exceeding the 99th percentile of a normal reference population. Troponin elevations reflect myocardial damage without indicating its mechanism. In critically ill patients, cardiac troponin is detectable in the plasma in up to 60% of cases and troponin rises are commonly unrelated to pathology in the coronary arteries. Moreover in haemodynamically stable patients with non-specific or specific symptoms for acute coronary syndrome, it may be difficult to interpret dynamic changes of troponin. Interpretation of this clinical laboratory results requires knowledge of the performance of this test. The cardiac troponin result must be interpreted in the context of the presenting symptoms and other anamnestic-clinical characteristics of the patient.

Objectives: the purpose of this study is to analyze the role and the usefulness of cardiac troponin in critically ill patients and haemodynamically stable patients with specific symptoms of possible acute cardiovascular event referring to Emergency Department.

Methods and patients: it is a retrospective observational study. The research includes 16354 patients presenting to the Emergency Department of Padua Hospital from January 2012 to December 2012 with acute respiratory distress, dyspnea, chest pain and palpitations. Cardiac troponin is performed for 13073 (79.93%) patients with one or more of above symptoms. The laboratory test used is an high sensitivity cTnI immunoassay with 99th percentile reference values.

Conclusions: cardiac troponin is sensitive indicator of myocardial injury and has become central to the diagnosis of myocardial infarction. This clinical laboratory test allows differentiating type 1 myocardial infarction, type 2 infarction and non-acute coronary syndrome troponin elevations. A slight elevation in cardiac troponin levels is common in patients with a large spectrum of clinical settings. Introduction of high-sensitivity cardiac troponin assays substantially increases sensitivity to identify patients with acute coronary syndrome or myocardial infarction even at the time of presentation to the emergency department at the cost of specificity. The proportion of patients presenting with the cardiac troponin elevated, non-vascular acute cardiac event correlated, increases with the new high sensitivity cardiac troponin assays; accordingly for the emergency physician is more difficult to identify those patients who need cardiovascular invasive diagnostics. An elevation of cardiac troponin in haemodynamically stable patients with non-specific symptoms requires the emergency physician to hospitalize the patient. An elevated cardiac troponin level is a relatively common finding in critically ill patients (like pulmonary embolism, sepsis, myocarditis, acute stroke, respiratory failure and heart failure): it is unrelated to acute cardiac injury, but define a high-risk group of patients with poor short term and long-term outcomes. A measurement exceeding the 99th percentile of a normal reference population doesn't affect the decision of the emergency physician to hospitalize the critically ill patients. The hospitalization depends on the general patient's clinical conditions. Finally, haemodynamically stable patients with specific symptoms of possible cardiovascular event but with a first measurement of cardiac troponin including the normal reference values must perform serial measurements of cardiac troponin after 3 and 6 h. If cardiac troponin measurements are normal, a stress test to provoke ischemia and a cardiological evaluation should be performed in the emergency department or on outpatient basis within 72 h as an alternative to inpatient admission. The service of short intensive observation (OBI) and the outpatient cardiology in the emergency department have reduced the number of immediate hospitalization of these patients by 13%.

Po-032

Rez de Jardin poster area

C-REACTIVE PROTEIN: RETHINKING ROUTINE USE IN ACUTE APPENDICITIS.

Ramsay Fanous (1), Dipak Mistry (2), Bill Coode (1)

1. Emergency Department, Newham University Hospital, Bart's Health NHS Trust, London, United Kingdom
2. Emergency Department, Homerton University Hospital, London, United Kingdom

Corresponding author: ramsayfanous@doctors.org.uk

Keywords: Appendicitis, C-reactive protein, Alvarado Score

INTRODUCTION

Acute appendicitis is the most common abdominal emergency, accounting for approximately 40,000 admissions per year in the UK. Despite advances in diagnostic technology, point of care testing and widespread availability of ultrasound and computed tomography (CT), diagnosis remains largely clinical. The overlap with other clinical syndromes presents significant diagnostic challenges for the emergency clinician, with misdiagnosis reported in up to 1 in 5 cases. Any strategies that enhance diagnostic accuracy and shorten the patient's journey time from presentation to operation would therefore be welcome.

The Alvarado score, a validated clinical prediction rule that incorporates symptoms, clinical signs and point of care testing (total WCC and neutrophil count), is useful to this end but under-used. In contrast, serum C-reactive protein (CRP) is a commonly requested test in the Emergency Department (ED). However, although a well-established inflammatory marker, it lacks specificity, has a relatively long time to result and cost implications.

This audit assesses whether CRP values correlate with Alvarado scores (a validated predictor for likelihood of appendicitis) in cases of proven appendicitis. If not, routine CRP measurement may not be useful to inform or corroborate clinical decisions.

METHODS

This retrospective audit included all patients with acute appendicitis (proven histologically or at operation) presenting to Newham University Hospital, London from April to September 2012. Data was collected using the electronic patient record, with strict adherence to Caldicott principles. Patient age, sex, admission total WCC and neutrophil counts, admission CRP, imaging results, time from presentation to operation and total length of admission were recorded. All patients were retrospectively Alvarado scored. No patients were excluded.

MS Excel and IBM SPSS 21.0 were used for data analysis.

RESULTS

A total of 98 cases were included: 71 male, median age 29 years (range 6-69); 27 female, median 25 years (range 8-80).

All patients had total WCC & neutrophil count on admission; 78% had CRP level on admission. 34% had ultrasound (24% of males, 59% of females), 11% had CT (10% of males, 15% of females) and 6% had both ultrasound and CT.

Mean time to operation was 22.30 hours for males and 23.97 hours for females. Mean total length of admission was 2.97 days for males, and 3.44 days for females. Adjunctive imaging and CRP testing were both associated with longer mean times to operation, with delays of 5.4 and 10.6 hours respectively.

Total neutrophil count was strongly correlated with Alvarado score (Pearson C=0.357, p=0.000). This association was particularly powerful for Alvarado scores >5 (the 'probable appendicitis' group), where neutrophil counts were almost always >5.0x10³.

CRP level showed no significant correlation with Alvarado score (Pearson C=-0.003, p=0.981). However, CRP values > 100mg/L were strongly associated with the incidence of vermiform perforation or abscess collection.

DISCUSSION

The demographics of patients in this audit correlates well with epidemiological data published elsewhere.

That adjunctive imaging was associated with a longer time to operation should come as no surprise, though a mean delay of 5.4 hours would seem acceptable. The association of CRP with a mean delay of 10.6 hours to operation is more unexpected, especially considering that time to result is in the region of only 1-2 hours. There may be no causative link if CRP use was higher in more complex cases, where delays may have been due to other factors. However, it could be that CRP measurement is muddying the diagnostic waters. An initially negative or low CRP value may cause delay by reliance on serial CRP measurements and/or further imaging.

The key finding of this audit was that CRP value does not correlate with the likelihood of acute appendicitis (as measured by the Alvarado Score). This suggests that routine use of CRP has little diagnostic or decision-making benefit beyond the combination of neutrophil count and Alvarado Score. Nevertheless, CRP may be an independent marker of disease severity, especially if the condition is complicated by perforation or abscess formation. It is therefore likely to remain in routine use by general surgeons. Whether a finding of high CRP values would change management in the ED, such as triggering early use of antibiotics, is debatable.

Po-033

Rez de Jardin poster area

IGF-1 LEVEL AND INFLAMMATION BIOMARKERS IN MIDDLE-AGE AND ELDERLY WOMEN WITH LOW-ENERGY DISTAL RADIUS FRACTURE

Lars Adolfsson (1), Hans Arnqvist (2), Simona Chisalita (3), Simona Chisalita (4), Lee Ti Chong (4), Maciej Wajda (5)

1. Department of Orthopedics, University Hospital, Linköping, Sweden

2. Department of Clinical and Experimental Medicine, Faculty of Health Sciences, Linköping, Sweden

3. Department of Acute Health Care, Universitetssjukhuset, Linköping, Sweden

4. Department of Acute Health Care, University Hospital, Linköping, Sweden

5. Department of Acute Health Care, University Hospital, County Council of Östergötland, Linköping, Sweden

Corresponding author: ioana.simona.chisalita@liu.se

Keywords: IGF-1, radius fractures, inflammation and nutritional status

Background. The most frequent fracture localization in elderly patients is the distal radius through low-energy mechanisms. IGF-1 declines with advancing age and in states of malnutrition and use to play an important role in the maintenance of bone mass and its levels.

Aim. We aim to investigate IGF-1 levels, inflammation and nutritional status in middle-age and elderly women with low-energy distal radius fractures.

Methods. Thirty five women, age 70.5 ± 1.5 (mean ±SE), with low-energy distal radius fractures occurring due to fall on slippery ground, indoor or outdoor on snow/ice, were recruited in the emergency room (ER) (visit 1) and follow 1 and 5 weeks (visit 2 and visit 3) after fracture by orthopedic consult. Fractures were diagnosed according to standard procedure by physical examination and X-ray. Patients were conservatively treated with plaster casts in the ER. 35 patients who afterward needs re-interventions were operated. Blood samples were drawn in ER and after 1 and 5 weeks. Blood samples were taken within 24h after fracture and analyzed in the routine laboratory.

Results. A significantly higher level white blood cells (WBCs) were found at visit 1 (10.1 ±0.6 x10⁹/L) compared to visit 3 (6.9±0.7 x10⁹/L) (p<0.001). Significantly higher levels of high sensitive C-reactive protein (hsCRP) at visit 1 (5.5±1.2 mg/L) compared to visit 2 (3.9±0.8 mg/L) was found (p=0.03). An inverse correlation was found between hsCRP levels and IGF1 at visit 1 and 2 (126.1±48.0 µg/L and 127.4±46.2 µg/L, respectively). Nutritional status evaluated by body mass index (24.2±7.8 kg/m²) and albumin levels (42.2±0.5 g/L at visit 1 and 40.1±1.0 at visit 2) were normal.

Conclusions. In a pilot study, in postmenopausal women with a low-energy distal radius fracture we found low IGF-1 levels and signs of inflammation, but not or signs of malnutrition.

Po-034

Rez de Jardin poster area

NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN (NGAL) AS A PROGNOSTIC BIOMARKER IN CRITICALLY ILL PATIENTS

Basar Cander (1), Betul Babagil (1), Emin Fatih Visneci (1), Zerrin Defne Dundar (1), Mehmet Ergin (1)

1. Emergency Medicine Department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

Corresponding author: zerrindefnedundar@yahoo.com

Keywords: NGAL, critically ill, prognosis

Objective: Neutrophil gelatinase-associated lipocalin (NGAL) is a novel biomarker in patients with acute kidney injury. In this study, we aimed to examine the prognostic value of NGAL in critically ill patients.

Methods: This prospective study was conducted in the intensive care unit of emergency medicine department of a

university hospital. All patients (≥ 18 years old) admitted to the intensive care unit from November 2011 through June 2012 were enrolled the study within the first 24 hours after admission. Patients with acute or chronic renal failure and who stayed in intensive care unit shorter than 24 hours were excluded. The characteristics of patients, vital signs, laboratory results, Glasgow Coma Scale scores, APACHE II scores were recorded. SOFA (at hours 0 and 48) scores, mechanical ventilatory support requirement, the length of stay in intensive care unit, the length of stay in hospital, and outcomes were also recorded. Blood samples were collected on admission and at hour 48 of admission to the intensive care unit. For analysis of NGAL 3 mL of venous blood was placed into tubes containing EDTA. The patients were divided into groups as survivors and non-survivors, mechanically ventilated patients and non ventilated patients. The differences between the groups for parameters were compared. Correlations of NGAL levels, APACHE II, and SOFA scores were examined.

Results: A total of 98 patients were enrolled in the study. The mean age of patients was 64.56 ± 17.86 years and 57 (58.2%) of the patients were male. The mean APACHE II score of patients was 20.39 ± 8.26 and SOFA score of them was 7.26 ± 4.07 on admission. Sixty-three (64.3%) of patients required mechanical ventilatory support and overall mortality rate was 53.1%. Survivors ($n=46$) had significantly lower APACHE II, SOFA scores (at hours 0 and 48), and NGAL levels (at hours 0 and 48) than non-survivors ($n=52$) (for all, $p < 0.001$). The mechanically ventilated patients ($n=63$) had significantly higher APACHE II, SOFA scores (at hours 0 and 48), and NGAL levels (at hours 0 and 48) than non-ventilated patients ($n=35$) (for NGAL at hour 0, $p=0.001$; for others, $p < 0.001$). NGAL levels at hour 0 were found to be correlate with APACHE II and SOFA scores at hours 0 and 48 (respectively; $r=0.259$, $p=0.010$; $r=0.395$, $p < 0.001$; $r=0.424$, $p < 0.001$). NGAL levels at hour 48 were found to be correlate with APACHE II and SOFA scores at hours 0 and 48 (respectively; $r=0.365$, $p=0.001$; $r=0.502$, $p < 0.001$; $r=0.504$, $p < 0.001$). In order to predict mortality, the areas under the curve for NGAL were 0.745 (95% CI 0.648-0.843) at hour 0 and 0.828 (95% CI 0.736-0.919) at hour 48 (for both, $p < 0.001$).

Conclusions: Although NGAL is a novel biomarker of kidney injury, we suggest that NGAL has also prognostic value in critically ill patients and can be used as an indicator of ventilatory support requirement and mortality.

Po-035

Rez de Jardin poster area

ADIPONECTIN LEVELS IN CRITICALLY ILL PATIENTS

Betul Babagil (1), Basar Cander (1), Emin Fatih Visneci (1), Zerrin Defne Dundar (1), Abdullah Sadik Girisgin (1), Mehmet Gul (1)

1. Emergency Medicine Department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

Corresponding author: zerrindefnedundar@yahoo.com

Keywords: adiponectin, critically ill, mortality

Objective: Adiponectin is a protein that regulates the metabolism of lipids and glucose. A low level of adiponectin is a risk factor for developing diabetes mellitus and atherosclerosis. In this study, we aimed to examine adiponectin levels and its prognostic value in critically ill patients.

Methods: This prospective study was conducted in the intensive care unit of emergency medicine department of a university hospital. All patients (≥ 18 years old) admitted to the intensive care unit from November 2011 through June 2012 were enrolled the study within the first 24 hours after admission. Patients with diabetes mellitus and who stayed in intensive care unit shorter than 24 hours were excluded. The characteristics of patients, vital signs, laboratory results, Glasgow Coma Scale scores, APACHE II scores were recorded. SOFA (at hours 0 and 48) scores, mechanical ventilatory support requirement, the length of stay in intensive care unit, the length of stay in hospital, and outcomes were also recorded. Blood samples were collected on admission and at hour 48 of admission to the intensive care unit. For analysis of adiponectin, 3 mL of venous blood was placed into tubes containing EDTA. The patients were divided into groups as survivors and non-survivors, mechanically ventilated patients and non ventilated patients. The differences between the groups for parameters were compared. Correlations of adiponectin levels, APACHE II, SOFA scores, the length of stay in intensive care unit, and the length of stay in hospital were examined.

Results: A total of 68 patients were enrolled in the study. The mean age of patients was 62.60 ± 18.19 years and 41 (60.3%) of the patients were male. The mean APACHE II score of patients was 20.24 ± 7.28 and the mean SOFA score of them at hour 0 was 7.03 ± 3.78 . Forty-three (63.2%) of patients required mechanical ventilatory support and overall mortality rate was 48.5%. Survivors ($n=35$) had significantly lower APACHE II and SOFA scores (at hours 0 and 48) than non-survivors ($n=33$) (for all, $p < 0.001$). There was no difference between survivors and non-survivors in terms of adiponectin levels (at hours 0 and 48) (for both, $p > 0.05$). The mechanically ventilated patients ($n=43$) had significantly higher APACHE II and SOFA scores (at hours 0 and 48) than non-ventilated patients ($n=25$) (for all, $p < 0.001$). There was no difference between those groups in terms of adiponectin levels (at hours 0 and 48) (for both, $p > 0.05$). There was no correlation between adiponectin levels and the other parameters.

Conclusions: In our study, we cannot find any relationship between adiponectin levels and mortality and the other prognostic indicators in critically ill patients. However, the number of patients included in this study is low for absolute decision. Further clinical trials should be conducted.

Po-036

Rez de Jardin poster area

HYPOALBUMINEMIA IS ASSOCIATED WITH 30 DAY ALL-CAUSE MORTALITY IN MEDICAL PATIENTS

Marlene Ersgaard Jellinge (1), Mikkel Brabrand (2)

1. Department of Anesthesiology, Sydvestjysk Sygehus Esbjerg, Esbjerg, Denmark

2. Department of Emergency Medicine, Sydvestjysk Sygehus Esbjerg, Esbjerg, Denmark

Corresponding author: m.ersgaard@gmail.com

Keywords: Hypoalbuminemia, Mortality, Acute

Introduction

Albumin is a negative acute-phase protein and plasma albumin concentration is thus decreased during systemic inflammatory response. Hypoalbuminemia (albumin level < 35 g/L) is known to be associated with mortality rate, length of hospital stay and complication rate in selected patient groups. The purpose of our study was to investigate hypoalbuminemia in a broad group of acutely admitted medical patients and describe the relationship between 30-day all-cause mortality and hypoalbuminemia.

Methods

We included all acutely admitted adult (age over 15 years) medical patients from the medical admission unit at a regional teaching hospital in Denmark over a six months period. We electronically extracted the initial blood tests drawn on each patient upon admission. As albumin is part of our routine screening panel, it was available on most patients. After inclusion of all patients, data on mortality was extracted from the Danish Civil Register to ensure complete follow-up.

Discriminatory power (ability to distinguish between patients surviving and dying) was analyzed using area under the ROC curve and goodness of fit (GOF) using Hosmer-Lemeshow test. Data will be presented median (interquartile range [IQR]) or proportion. Differences between categorical data will be tested using Chi-squared test.

Results

A total of 5894 patients were included, 2950 (50.1 %) were female and median age was 65 (IQR 49-77) years. The median length of stay was 2 (IQR 1-6) days and 332 (5.6 %) patients died within 30 days of admission.

Albumin was analyzed in 5451 (92.5 %) patients. Median plasma albumin was 40 (IQR 37-43) g/L. We divided the patients into four groups, according to their plasma albumin (<20, 20-34, 35-44 and ≥45 g/L). Seven (0.1 %) patients had a plasma albumin < 20 g/L, five of these (71.4 %) died. 735 (13.5 %) had a plasma albumin of 20-34 g/L, 116 (15.8 %) died. 3840 (70.5 %) patients had a plasma albumin of 35-44, 165 (4.3 %) died and 869 (15.9 %) patients had a plasma albumin ≥ 45 g/L, 14 (1.6 %) died, $P < 0.0001$.

The median overall Charlson comorbidity index was 1 (IQR 0-3). Patients with a plasma albumin below 20 g/L had the highest Charlson comorbidity index (median 3 [IQR 1-4]), while patients with plasma albumin of 45 or more had the lowest (median 0 [IQR 0-1]).

Hypoalbuminemia (< 35 g/L) had sensitivity for 30-day mortality of 40.3 % (95 % Confidence Interval [CI] 34.7-46.1 %), specificity of 87.9 % (95 % CI 87.0-88.8 %), positive predictive value of 16.3 % (95 % CI 13.7-19.2 %) and a negative predictive value of 96.2 % (95 % CI 95.6-96.7 %).

Discriminatory power was acceptable as AUROC was 0.7348 (95 % CI 0.7042-0.7655). Calibration was good, Chi-square was 6.85 (8 degrees of freedom), $p = 0.5533$.

Conclusion

Hypoalbuminemia is associated with increased 30-day all-cause mortality in acutely admitted medical patients. Used as predictive tool for mortality, plasma albumin has acceptable discriminatory power and good calibration.

Po-037

Rez de Jardin poster area

THE PRESEPSIN VALUE - DIAGNOSTIC STRATEGY IN SUSPECTED SEPSIS

Diana Cimpoesu (1), Claudia Bursuc (2), Dan Teodorovici (2), Ovidiu Popa (1)

1. Emergency Medicine, UMF "Gr.T.Popa", Iasi, Romania

2. Emergency Department, Clinical Emergency County Hospital "Sf.Spiridon", Iasi, Romania

Corresponding author: dcimpoesu@yahoo.com

Keywords: early initiation of sepsis therapy, sepsis, presepsin

From January 1st, 2012 - December 31st, 2012, in the Emergency Department of the County Hospital "St. Spiridon" Iasi, Romania, a study was conducted concerning the correlations between the presepsin values watched and other clinical and biological parameters determined from patients with infectious symptoms or suspicion of sepsis and the follow-up, aiming at responding to whether presepsin values can help in the early initiation of the specific therapy, before the appearance of the classic signs of degradation of the specific vital functions of sepsis and septic shock. The centralized data were statistically processed in SPSS.

The study was done on 95 patients, 64.2% male, 35.8% female distributed by age as follows: 45.6% more than 70 years, 38.3% ranged 51 to 70 years, 13.9% ranged 31 to 50 years, 2.2% ranged 18 to 30 years the average age being 66 years. The patient distribution with respect to the infectious starting point was as follows: 1% cardiac, 3.2% nervous system, 7.4% genitourinary, 7.4% cutaneous, 14.7% abdominal, 21.1% pulmonary and on 45.3% the starting point could not be stated. Presepsin determination was performed in all patients who had clinical signs of infection, regardless of its location or those with suspected diagnosis of sepsis or septic shock in their first moments of clinical and biological evaluation. Presepsin values for 45% of patients were above 1000, for 16.5% ranged between 500-999, for 12.1% of the patients ranged between 300-499, for 1% of the patients were between 200-299 and for 3.3% of the patients were below 200.

Other important parameters considered in this study were those related with the pathologic medical history of the patient, the evaluation of the vital functions, the values of creatinine, serum lactate, pH, glucose, blood counts.

In terms of initial therapy in the emergency department after determining the presepsin value, 36.8% received

vasopressors, 31.6% received broad-spectrum antibiotics, 83.2% received fluid and 13.7% needed adjunctive therapy with steroids., 77.9% of the total number of patients did not required hospitalization, 13.6% spent less than five days in the intensive care Unit, 8.4% more than 5 days, and 17.9% of the hospitalized patients died.

Among the statistically significant correlations worth mentioning that resulted from the processing data study there were: direct correlation between the amount of creatinine and presepsin $p = 0.03$, the direct correlation between the need to perform endo-tracheal intubation maneuver and the creatinine and presepsin values $p = 0.014$, direct correlation between the administration of vasopressors and blood glucose $p = 0.05$, proportional correlation between the bicarbonate and mortality $p < 0.01$, proportional correlation between medical gastroenterological history and mortality $p = 0.02$, proportional correlation between neoplasm in personal history and value of presepsin $p = 0.02$.

In conclusion, we can say that the presepsin value is correlated with the symptoms and biological values from subsequent sepsis and septic shock; is fast, available and relatively easy to determine but with the disadvantage of the work kit price; it is a useful prognostic factor which can lead to the early initiation of the specific therapy of sepsis and to the increasing survival rate of the patients with sepsis and septic shock.

Po-038

Rez de Jardin poster area

APPLYING THE EUROPEAN CARDIOLOGY SOCIETY GUIDELINES TO THE MANAGEMENT OF CHEST PAIN IN THE NHS.

Lucy Powell, Mark Harrison

Emergency department, Wansbeck General Hospital, Ashington, United Kingdom

Corresponding author: lucy.powell@doctors.org.uk

Keywords: Chest pain, Troponin, Myocardial infarction

Background: Chest pain is a very common symptom, accounting for 5% of all visits to emergency departments in the United Kingdom and 40% of all medical admissions. With coronary heart disease remaining the biggest killer in the UK, stakes are high and ruling out an acute coronary syndrome (ACS) is a priority for our patients.

ACS has traditionally been diagnosed on the basis of a classical history, electrocardiogram (ECG) changes and serum assays for troponin, a protein released when myocardial cells are damaged. Where ECG is normal or changes are non-specific, the diagnosis relies upon the history and troponin test. Current UK guidelines, from the National Institute of Clinical Excellence (NICE) recommend a diagnostic troponin assay at 10-12 hours from onset of the worst pain, but more recently, the European Cardiology

Society has advocated the use of a highly sensitive 'rule-out' troponin assay at 6 hours.

The need for a 10-12 hour troponin assay versus a 6-hour test has been studied before, with results showing that using the latter was sensitive enough to allow safe discharge for patients at low to moderate risk of myocardial infarction and that it reduced hospital admissions.

Method: We undertook a retrospective review of consecutive patients presenting to the ED at our district general hospital with chest pain/discomfort of suspected cardiac origin. Specifically, we sought to compare our practice to the current 'gold-standard', as recommended by NICE, and to establish whether application of the European Cardiology Society guidelines i.e. the 6-hour rule-out troponin test, would have affected the management of our patients, in the knowledge that some of our patients present more than 6 hours after the onset of their pain. Specifically, we were interested to see whether application of the ECS guidelines would result in giving earlier indication of patients who might benefit from therapeutic interventions, if it would result in missing any myocardial infarctions, and whether it would save unnecessary bloods tests or hospital admissions.

We obtained Caldicott approval to review notes and hospital computer records of all patients presenting to our department during a two-week period with chest pain/discomfort of suspected cardiac origin. We then collected information including patient demographics, time and date of admission and discharge, any previous admissions within the last 12 months for chest pain or otherwise, TIMI score, GRACE score, time of worst pain, time of index troponin, index troponin level and 12 hour troponin level, serum creatinine, as well as recording what treatment those patients received and their discharge diagnosis.

Results: Results show 100% adherence to the current 'gold-standard' NICE guidelines, with all patients presenting with chest pain of suspected cardiac origin admitted for a 12-hour troponin. They also strongly support the ECS directive for a 6-hour assay as being highly sensitive, with 100% of patient's who had a negative test at 6 hours remaining negative at 12 hours.

Discussion: Our results reinforce the results of a previous study and suggest that we could confidently and safely discharge patients at low to moderate risk of myocardial infarction if they had a negative troponin test at 6 hours. Applied in our hospital, the ECS guidelines would reduce admissions.

Conclusion: Current practice in our hospital conforms to national standards and results of our review show very strong evidence for the use of an earlier 6-hour troponin test as a 'rule-out', with 100% sensitivity for myocardial infarction in patients at low to moderate risk. We recommend a prospective study to formally validate the 6-hour test in our hospital with the potential to change practice and avoid unnecessary blood tests and hospital stays.

Po-039

Rez de Jardin poster area

A RETROSPECTIVE STUDY OF PRE-HOSPITAL AND IN-HOSPITAL INTEGRATED EMERGENCY CARE ACTIVITIES.

Rosario De Rosa, Silvestro Di Prospero
Emergency department, Ospedale San camillo - Roma, Italy

Corresponding author: amig.sil@inwind.it

Keywords: time, scene, hospital

It is generally recognized that emergency medical activities are nowadays an essential component of health care provision. These activities, managed by a single Emergency Medical System (EMS), in any regional begin out of hospital, and continue in hospital Emergency Department (E.D.). Observational studies put in evidence that these activities reduce mortality and the complications of every pathology especially for cardiovascular ones (acute coronary syndromes, heart failure, arrhythmias). SAMPLE. We have retrospectively studied 422 out-of-hospital emergency medical interventions, made from 2001 until 2004. All these interventions were managed by an emergency ambulance (ALS mobile unit) of the Addolorata Institute of Rome. All the patients were delivered to Emergency Department (ED) of San Giovanni Hospital. The composition of this sample (221 m, mean age 72 years, and 201 f, mean age 80 years) has been determined to compare the selected variables, for both the out-of-hospital interventions and the in-hospital interventions at the ED.

OBJECTIVES – STUDY METHODOLOGY – RESULTS.

Essentially, our aim was to evaluate a total of 40 parameters related to the interventions carried out for every patient (Table 1) have been considered and the corresponding relationships have been calculated. Overall, the sample of this study included 16.880 in/out-of-hospital interventions parameters [age; sex; time on the scene; clinical signs (pain, dyspnea, arrhythmia, other symptoms); diagnostic procedures (physical examination, electrocardiogram, oxygen saturation); clinical conditions (stable or critical); diagnosis (acute coronary syndromes, heart failure, arrhythmias, other); clinical conditions (stable or critical); diagnosis, (acute coronary syndrome, heart failure, arrhythmia, other, none); therapy (number of drugs administered); Out-of-hospital intervention time (hours minutes); in ED time: clinical conditions (unchanged, improved, deteriorated); diagnostic procedures (physical examination, electrocardiogram, ultrasonography, laboratory tests, x-ray, consultations); diagnosis (confirmed, different, none); therapy (continued, implemented, changed, none); time of ED stay (hours and minutes); outcome (discharge, admitted, refuses admission, deceased, transferred). Given the large amount of these data, in order to estimate the comprehensive interrelated behavior of the modalities of the evaluated variables, we have used the Main Components Analysis. This method permits the study of relationships between a large number of variables by assembling them into few factors which are tightly correlated to these variables allowing an easier understanding of the studied events (Figure 1).

The results have shown: -an inverse relationship between the out-of-hospital intervention time and the in-hospital intervention time; -a positive relationship between number of drugs given, out-of-hospital time and patient's age; - location of indexes of in-hospital procedures (in the ED) and clinical signs observed in the out-of-hospital intervention; -a correlation of the indexes of out-of-hospital procedures with the time and the number of supplied drugs.

Among the studied variables, it appears that the out-of-hospital intervention time, here intended as "time spent at the patient's side" is important (golden hour). This variable seems to affect: -the diagnostic accuracy (first survey); -the administered therapy, which may support the preservation of patient's organ reserve (stabilization); -the patient's clinical conditions resulting from the intervention, considering that any individuals and particularly the patients with heart disease are negatively affected by the subsequent transport; -the clinical picture of the patient that has to be reported to ED colleagues who will continue the treatment.

Po-042

Rez de Jardin poster area

ANAPHYLAXIS AUDIT: ASSESSMENT TO CONFIRM AN ANAPHYLACTIC EPISODE AND MANAGEMENT AFTER THE EMERGENCY TREATMENT OF A SUSPECTED ANAPHYLACTIC EPISODE

Amanda Kirrage (1)

1. Emergency department, Whiston hospital:St Helens & Knowsley Hospitals NHS Trust, Liverpool, United Kingdom

Corresponding author: amandakirrage@yahoo.com

Keywords: Anaphylaxis, adrenaline auto-injector, diagnosis

Background:

Anaphylaxis is a potentially life threatening condition that can present to the emergency department. It can be difficult to differentiate from a range of other presentations. In 2011, NICE published guidance on the assessment to confirm an anaphylactic episode and management after the emergency treatment¹. Guidance states that patients with a suspected anaphylactic episode should be referred to an allergy specialist. Patients should be given an adrenaline auto-injector and appropriate advice.

There is concern that patients do not receive optimal management following an anaphylactic reaction. This may be due to; failing to correctly identify anaphylaxis, lack of understanding of whom to give an adrenaline auto-injector, lack of patient education, and lack of follow up on discharge. If patients do not receive follow up by an allergy specialist it is likely they will not receive a definitive diagnosis; this can in turn lead to patient anxiety, inappropriate management and recurrent reactions.

Methodology:

A list of patients aged over 16 who attended Whiston emergency department between 1st January 2012 and the

31st October 2012 who were coded as presenting with an allergic reaction was obtained. The hospital electronic note system was used to determine which of these patients had been given IM adrenaline for a suspected anaphylactic reaction. The following standards were audited.

1. The acute clinical features of anaphylaxis should be documented: Airway and/or breathing and/or Circulation
2. Timed blood samples of mast cell tryptase should be taken
3. After treatment for suspected anaphylaxis people should be offered referral to a specialist allergy service
4. After emergency treatment for suspected anaphylaxis, people should be offered an appropriate adrenaline injector and shown how to use it.
5. All patients should be observed for at least 6 hours before discharge
6. Before discharge patients should be offered appropriate information as outlined by NICE.

Results:

Fourteen patients received IM adrenaline for a suspected anaphylactic reaction. In four of the patients this was the first presentation. Five of these patients (35%) were given IM adrenaline in the emergency department. In three of the fourteen patients there was no documented evidence of a problem with airway, breathing or circulation. This raises the possibility that they were not having an anaphylactic reaction. In these cases adrenaline was given pre-hospital. None of the four patients with first presentations of suspected anaphylaxis were given an adrenaline auto-injector or referred to an allergy specialist. Three of the patients with known anaphylaxis received an adrenaline auto-injector. Two patients had blood sent for mast cell tryptase. The majority of patients (85%) were admitted or observed for 6 hours. It was not documented in any of the patient's notes that the patient was given any of the information suggested in NICE guidance.

Conclusion:

The diagnosis of anaphylaxis is not straightforward. As the majority of patients receive treatment for suspected anaphylaxis prior to arriving in hospital this makes it particularly challenging for the EM doctor to decide if this was a true anaphylactic reaction. A false diagnosis can have a profound impact for the patient. This audit demonstrates that none of the four patients who had a first presentation of suspected anaphylaxis were referred to an allergy specialist or received an adrenaline auto-injector. These patients will not receive appropriate follow up and are at risk of misdiagnosis or potential recurrent reactions. There may be uncertainty among emergency department doctors on who to give an adrenaline auto-injector to. At present our trust does not have direct access to an allergy specialist. As a result of this audit we aim to introduce an anaphylaxis patient information pack including a demo adrenaline auto-injector, provide staff training, and liaise with trust management with regard to provision of an allergy service

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Po-043

Rez de Jardin poster area

RELATION OF NAUSEA AND VOMITING IN ACUTE MYOCARDIAL INFARCTION TO LOCATION OF INFARCT

Sami Kooli, Ali Sallami, Noura Laamouri, Mahbouba Chkir, Moez Mougaida, Hanen Ghazali, Sami Souissi
Emergency department, Regional Hospital Ben Arous, Tunisia

Corresponding author: samikooli@gmail.com

Keywords: Acute Myocardial Infarction, Location, Nausea Vomiting

Relation of Nausea and Vomiting in Acute Myocardial Infarction to Location of Infarct

Kooli S, Sallami A, Laamouri N, Chkir M, Mougaida M, Ghazali H, Souissi S

Emergency department, Regional Hospital, Ben Arous, Tunisia

Background: Nausea and vomiting occur frequently in patients with acute myocardial infarction (AMI). To determine whether the incidence of nausea and vomiting in patients with AMI varies with infarct location, we studied 80 patients who had been admitted to our hospital for ST-segment elevation AMI. (*Am J Cardiol* 2009; 104:1638 – 1640)

Methods: Data were prospectively collected from patients with AMI and nausea or vomiting for one year: October 2010 – September 2011. Subjects were enrolled if the diagnosis of AMI with nausea or vomiting is retained. The infarct location (i.e., inferior vs anterior) in the patients with STEMI was determined using the established World Health Organization electrocardiographic criteria.

Results: 80 patients were included: nausea 44 patients (55%) and vomiting 36 patients (45%). The mean age was 58, 1 +/- 11, 8 years old, and males comprised 62 patients (77, 5%). Body mass index (kg/m²) = 26, 97 +/- 2, 46; Smokers: 58 patients.

Location: inferior AMI 47 patients (58, 8%) anterior AMI 33 patients (41, 2%)

The peak serum troponin I concentrations was significantly greater in those with anterior AMI than in those with inferior AMI respectively 0, 52 +/- 0, 28 ng/ml and 0, 50 +/- 0, 34 ng/ml. The vast majority of patients in each infarct group were treated using thrombolytic agents 70 patients (87, 5%) with success in 62, 4% of patients.

Conclusion: Nausea and vomiting are common presenting symptoms in patients with either inferior or anterior wall AMI, but their frequency is unrelated to the infarct location.

Po-044

Rez de Jardin poster area

ARE WE SUCCESSFUL IN CARDIOPULMONARY RESUSCITATION?

Nalan Kozaci (1), Mehmet Oguzhan Ay (2), Ferhat Icme (3), Abdulkadir Akturk (4), Salim Satar (4)

1. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey
2. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
3. Emergency Department, Ankara Atatürk Education and Research Hospital, Ankara, Turkey

Corresponding author: droguzhan2006@myinet.com

Keywords: Cardiac arrest, resuscitation, emergency

Purpose: In this study, we aimed to determine the success rate of cardiopulmonary resuscitation performed in the patients with diagnosis of cardiac arrest, and demographic characteristics of these patients.

Material and Methods: The patients admitted to Adana Numune Education and Research Hospital, Department of Emergency Medicine between 01.01.2011 and 31.12.2012, and who underwent cardiopulmonary resuscitation were included to this study planned as retrospectively. The age, gender, status of judicial cases, causes and time of cardiac arrest, first observed arrest rhythm, the diseases prior to the arrest, means of arrival to emergency department, duration of cardiopulmonary resuscitation, results of cardiopulmonary resuscitation, the name of the hospitalised clinic, the existence of the operation, and outcome of the patients who underwent cardiopulmonary resuscitation in accordance with current advanced life support protocols were recorded in standard data entry form.

Results: A total of 290 patients with completely accessible data were included to the study. Most of these patients were men (65.2%). The mean ages were 61 ± 19 years for men, 67 ± 14 years for women ($p = 0.018$). The most common diagnosis were ischemic heart disease and heart failure according to the analysis of the patient's medical history. 92 patients (31.7%) were brought to the emergency department after death, and all of these patients were unsuccessful following to cardiopulmonary resuscitation. 198 patients (68.3%) had cardiac arrest in the emergency department, and we determined that cardiopulmonary resuscitation application of 102 patients were successful. The most common causes of cardiac arrest were myocardial infarction and heart failure. Mostly first observed rhythm in the monitor was asystole. The response rate of cardiopulmonary resuscitation in patients with ventricular fibrillation and ventricular tachycardia was higher. Most patients were hospitalised to the coronary intensive care unit, and 11 of the 21 patients who underwent percutaneous coronary intervention were discharged from hospital in good health. Total 15 (5%) of all patients included to the study were discharged in good health.

Conclusion: The lower rate of success in cardiopulmonary resuscitation showed the presence of defects in all stages of the chain of life, and suggests that some actions should be performed to correct them.

Po-045

Rez de Jardin poster area

A NEW ONSET PREMATURE SUPRAVENTRICULAR COMPLEXES AND DELTA WAVES IN A CASE OF INTRACEREBRAL HAEMORRHAGE

Omer Faruk Celik (1), Emre Salcin (1), Haldun Akoglu (1), Cigdem Ozpolat (1), Kerem Ali Kabaroglu (1), Serkan Eroglu (1), Ozge Ecmel Onur (1), Arzu Denizbasi (1)

1. Department of Emergency Medicine, Marmara University, Istanbul, Turkey

Corresponding author: drhaldun@gmail.com

Keywords: intracerebral haemorrhage, delta wave, premature supraventricular complex

Introduction

Spontaneous intracerebral haemorrhage (ICH) causes 8% to 11% of all acute strokes and carries a high morbidity and mortality. Cerebrovascular events are known to produce changes in the electrocardiogram (ECG). The new-onset ECG changes, attributable to acute stroke occur in 15% to 30% of cases. ECG changes consist of repolarization abnormalities such as ST elevation, ST depression, negative T waves, and QT prolongation. These patients have often been misdiagnosed to have cardiac abnormalities based on their ECGs when in many of those instances the ECG change had been the result of the bleeding.

Case

A 62-year-old male presented with sudden onset of feeling unwell and vomiting. He denied any history of headaches, seizures, chest pain, palpitations, diabetes, hypertension or any cardiac disease. Also no previous history of stroke or transient ischemic attacks were present. His vital signs were as follows: pulse rate: 110 bpm; blood pressure: 220/110 mmHg; SO₂: 99%; RR: 10/min. In his neurological examination, no lateralization with motor weakness was present. Pupil reflexes were intact, GCS was 14/15 [M:6 V:4 E:4]. ECG showed a sinus tachycardia with frequent supraventricular premature complexes. In serial ECG's, new onset of delta waves in V₂, V₃ and V₄ with incomplete RBBB was evolved. Serial troponin and CK-MB tests were negative for ACS. No abnormality in electrolytes were found. A head CT was ordered to rule out any intracranial pathology to decrease GCS, and a left thalamic ICH (32x24 mm), with intraventricular extension, and a midline shift of 3 mm was diagnosed. ECG changes reverted back to normal after the surgical control of intracranial pressure with drains.

Discussion

Various ECG changes can be seen in ICH as sinus bradycardia and tachycardia, atrial and ventricular extrasystoles, atrial fibrillation (AF) and flutter, and ventricular tachycardia. The exact cause of ECG changes is not understood well and attributed to the myocardial injury due to acute cerebrovascular pathology. The increased sympathetic tone causes myocardial damage, via a direct effect or an intense coronary vasoconstriction and this is called neural mediated-myocytolysis. Cardiac arrhythmias are seen more frequently in hemispheric lesions rather than

lesions of the brain stem. Especially, insular cortex is related to cardiac rate and rhythm control.

Among tachyarrhythmias, atrial fibrillation is the most common with supraventricular arrhythmias, including premature supraventricular complexes (as in our case), and nonsustained supraventricular tachycardias. However, delta waves and RBBB of any type are extremely rare due to an acute stroke of any kind and this is the first case to report it to our knowledge. We assume that, in our case, above mentioned mechanisms led to a combined blocking and activating phenomenon.

Conclusion

The new onset cardiac arrhythmias following ICH have important clinical implications. The tachyarrhythmias can cause haemodynamic instability that may result in reduced cerebral perfusion and cardiac ischemia in patients with associated cardiovascular disease. Continuous cardiac monitorization should be ordered for all these patients.

In conclusion, absence of any findings on neurological examination doesn't rule out the ICH. ECG changes are common in ICH patients and a new onset of any ECG abnormality should raise suspicion for an intracranial pathology.

Po-047

Rez de Jardin poster area

TUMOR NECROSIS FACTOR BETA A329G GENE POLYMORPHISM AND THE ASSOCIATION BETWEEN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

Mehmet Canacankatan (1), Ahmet Sebe (2), Necmiye Canacankatan (3), Mehmet Oguzhan Ay (4), Meryem Genc Karanlik (5), Ufuk Saracoglu (6), Salim Satar (4)

1. Emergency Medicine Service, Tarsus State Hospital, Mersin, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Biochemistry Department, Mersin University, School of Medicine, Mersin, Turkey
4. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
5. Emergency Medicine Service, Kilis State Hospital, Kilis, Turkey
6. Emergency Medicine Service, Burdur State Hospital, Burdur, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Gene polymorphism, cardiovascular diseases, myocardial infarction

Aim: In this study, we aim to evaluate the efficacy of the tumor necrosis factor-beta A329G gene polymorphism in patients admitted to emergency department with chest pain complaint and diagnosed acute myocardial infarction.

Material and Method: This study was planned as a prospective, randomized, controlled study and we started the study after the approval of Cukurova University Ethics Committee. Blood samples were taken from the patients who gave permission. Analysis of blood samples were studied in the Biochemistry Laboratory of Mersin

University. DNA was extracted by High Pure PCR Template Preparation kit (High Pure PCR Template Preparation kit, Roche Diagnostic, Germany). TNF- β gene polymorphism A329G mutations were determined by using the Light Cycler instrument detection kit (Roche diagnostic, GmbH, Mannheim, Germany) in Light Cycler Real Time PCR. Statistical analysis of data was performed with SPSS 11.5 software package. The statistical significance level of $p < 0.05$ was taken for all tests.

Results: 90 patients (78 men, 12 females) with myocardial infarction and 78 healthy controls (28 men, 50 females) were included to this study. Tumor necrosis factor-beta A329G gene polymorphism was not significantly associated with myocardial infarction. 42.2 % of subjects had AG genotype and 6.7 % of subjects had GG genotype in patients with myocardial infarction. LDL levels in patients with MI were significantly higher than the control group ($p = 0.021$) and HDL levels were significantly lower in patients with MI ($p = < 0.001$).

Conclusion: It was observed that there has not been any relationship between tumor necrosis factor-beta A329G gene polymorphism and myocardial infarction. High LDL and low HDL levels were found to be the risk factors for MI. This study is important because it is the first study try to determine the relationship between MI and TNF- β A329G polymorphism of the gene for the Turkish community in our country. This study could lighten other studies, other polymorphisms of tumor necrosis factor can be investigated and the potential possible significant findings can be obtained.

Po-048

Rez de Jardin poster area

IDENTIFICATION OF THE OPTIMUM VAGAL MANOEUVRE TECHNIQUE FOR THE TREATMENT OF SUPRAVENTRICULAR TACHYCARDIA.

Gavin Smith (1), David Mcd Taylor (2), Alicia Broek (3), Ameer Morgans (4), Peter Cameron (1)

1. Epidemiology and Preventive Medicine, Monash University, Melbourne, Australia
2. Emergency and General Medicine Research, Austin Health, Heidelberg, Australia
3. Operations, Ambulance Victoria, Doncaster, Australia
4. Research and Evaluation, Ambulance Victoria, Doncaster, Australia

Corresponding author: gavin.smith@monash.edu

Keywords: vagal manoeuvre, supraventricular tachycardia, therapy

OBJECTIVES:

Performance technique of the Valsalva Manoeuvre (VM) and Human Dive Reflex (HDR) for termination of supraventricular tachycardia (SVT) varies, with notable differences of posture. The choice of manoeuvre requires evidence of maximising vagal tone for effectiveness. This study sought to quantify the most effective posture for each manoeuvre, and to compare changes in mean heart

rate in order to determine the most appropriate manoeuvre for the clinical setting.

METHODS:

This study used a repeated-measures trial with randomised participant allocation to manoeuvre and single-blinded analysis of ECG data. Inclusion criteria were healthy adults aged 18-60 years in sinus rhythm. Exclusion criteria were a history of cardiac or respiratory disease, caffeine or nicotine use within six hours of testing and medications other than oral contraceptives. Participants performed three repetitions of the range of techniques, in random order, whilst an ECG recorded changes in R-R interval (a proxy for vagal tone). A period of three minutes between attempts was included to enable restitution of haemodynamic values. Mean differences between pre- and post-manoeuvre R-R intervals were calculated for each posture within and between vagal manoeuvres. A fixed effects model was used to determine the significance of mean R-R interval difference.

RESULTS:

70 participants were enrolled (mean age 27.8 ± 9.1 years, range 18-56 years). The difference in mean R-R intervals between VM (supine) and VM (Trendelenberg) was not statistically significant, with 0.016 seconds (95%CI: -0.008 to 0.040, p=0.182) reported. The difference in mean R-R intervals for HDR (supine) was greater than HDR (sitting), at 0.032 seconds (95%CI: 0.008 to 0.056, p<0.001), suggesting that supine posture for HDR performance is more effective. VM supine generated greatest overall mean R-R interval difference at 0.297 seconds (95%CI: 0.270 to 0.323), while HDR (sitting) provided the shortest mean R-R interval difference at 0.138 seconds (95%CI: 0.111 to 0.165). Comparatively, the VM (supine) provided a statistically significant mean R-R interval difference over the HDR (supine), with 0.127 seconds (95%CI: 0.103 to 0.151, p<0.001) demonstrated.

CONCLUSIONS:

This study has identified no statistically significant difference in mean R-R interval generation between the VM (supine) and VM (Trendelenberg) postures, suggesting that there is no advantage to a head-down posture for VM performance. The HDR provided greater mean R-R interval difference when the supine posture was employed, inferring that where the HDR is used the patient should be supine. The VM provides a simple and statistically more effective vagal manoeuvre for non-pharmacological termination of SVT.

Po-049

Rez de Jardin poster area

CASE-REPORT: HEARTBROKEN - VENTRICULAR FIBRILLATION AS A PRESENTATION OF TAKO-TSUBO CARDIOMYOPATHY-

Stacey Mans (1)

1. Emergency department, UMCN St. Radboud, Nijmegen, Netherlands

Corresponding author: s.mans@seh.umcn.nl

Keywords: ventricular fibrillation, tako-tsubo cardiomyopathy, apical ballooning syndrome

Case-report:

Heartbroken

- ventricular fibrillation as a presentation of Tako-Tsubo cardiomyopathy-

Tako-Tsubo cardiomyopathy (TTC) is a transient left ventricular dysfunction with symptoms simulating acute coronary syndrome (ACS). It is characterised by coronary anatomy free of significant atherosclerotic lesions, and apical ballooning. 1-8

Case

A 51-year old woman presented herself at the emergency department with chest pain, after a bicycle ride of 60km. She was a practiced cyclist. She had a medical history of cured mammary carcinoma (T1N0Mx) 8 years ago. She had no cardiovascular risk factors.

In the hospital she collapsed. The quick-look showed ventricular fibrillation (VF). She received successful cardiopulmonary resuscitation.

Afterwards the electrocardiogram (ECG) showed ST elevations in V2-5. Cardiac catheterization did not reveal significant coronary lesions. Her ventriculogram was significant for apical ballooning, also called TTC. The cardiac biomarkers (post-resuscitation) were elevated. The patient was admitted to intensive care unit (ICU). Captopril was started (3dd 6.25mg). The echocardiogram the day after showed an akinetic apex and anterior-inferior wall.

Figure 1: Ventriculogram, apical ballooning

Discussion

Tako-Tsubo is rarely diagnosed, but possibly has a prevalence of 1.7-2.2% of patients suspected for ACS. 1 Characteristics are; female (82-100%) and age 62 -75y. 2 The proposed Mayo criteria are for the clinical diagnosis (figure 2).

TTC may be under diagnosed because a 'ventriculogram' isn't included in the standard catheterisation procedure.

Figure 2

In 57-100% of patients there is a provoking factor; 14-38 % emotional stress and 17-77% physiological stress (e.g. medical illness or surgery).3 Our patient described physical activity during high temperature.

The most common finding on ECG is ST-elevation (46-100%). It is most often reported in the precordial leads. The corrected QT-interval is often prolonged (450-510ms). 1,2 Cardiac biomarkers are elevated in 74-86% of patients.1 The reported troponine T ranges are 0.01-5.2 ug/ml.

The in-hospital mortality rate is 0-8%3,5-7and one report even described a rate of 21 % . 3

A 1.5% rate of VF is observed. 2

The total mortality is possibly much higher because the diagnosis is missed in VF with non-successful resuscitation. Only one article described the long term prognosis of TTC, finding an 11.4% recurrence rate in 4 years. It included only 1 patient with VF, who died during hospitalization.8

Conclusion

Our patient received an Implantable Cardioverter Defibrillator (ICD) and no maintenance medication.

Research is necessary to determine prognosis and treatment of TTC.

Our opinion is that TCC possibly is less benign than thought and underreported.

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Po-050

Rez de Jardin poster area

METHODS FOR PROGNOSTICATION OF CAUSES OF DEATH IN PATIENTS WITH ST-ELEVATION ACUTE CORONARY SYNDROME DURING PRE-HOSPITAL USE OF THROMBOLYSIS TREATMENT IN MAJOR CITIES OF THE FAR-EASTERN FEDERAL DISTRICT OF RUSSIAN FEDERATION

Sergey Morozov (1)

1. physician, pharmacology, emergency, Moscow State University of Medicine and Dentistry named after A.I. Evdokimov, Moscow, Russia (Russian Federation)

Corresponding author: yakutsk03@mail.ru

Keywords: pre-hospital thrombolysis, acute coronary syndrome with ST-elevation, external cardiac rupture

Objective

To evaluate effectiveness and safety of provision of medical services at pre-hospital treatment for patients with ST-elevation acute coronary syndrome during the use of pre-hospital thrombolysis treatment in major cities of the Far-

East Federal District of Russian Federation; to identify its complications and methods of their prognostication.

Materials and methods

Effectiveness of pre-hospital thrombolysis was studied in 215 patients in comparison with a group of 241 patients to whom thrombolysis was not administered. Causes of death were analyzed in study groups on the 7th-10th day of monitoring. Statistical processing of data was done using IBM SPSS Statistics 19 software. Used methods of descriptive statistics and frequency analysis, analyzed contingency tables of qualitative indicators and calculated odds ratios in clinical outcomes in a study group. We also studied regularities of dynamic change of clinical indicators through time. In order to evaluate the difference in frequency, a classic criterion of Pierson's chi-square with significance level was used. When dynamic change was reviewed, a paired test for Wilcoxon interdependent groups was used; while for several groups Freedman nonparametric analysis of variance was implemented. Comparison of average values of quantitative indicators of compared groups was done using Mann-Whitney nonparametric rank test.

Results

The main reason of death was cardiogenic shock. In the group of patients with administered pre-hospital thrombolysis a 25% increase of death from external cardiac rupture was found, compared to 4.7% in the group where thrombolysis was not used. The link was discovered between external cardiac rupture and hemorrhagic complications, the latter linked with the use of pre-hospital thrombolysis. Prognostication method was proposed to predict complications of thrombolysis based on TIMI scale during pre-hospital period, according to which: 1-4 points – show complete safety for use of thrombolysis; 4-5 points – probability of external cardiac rupture is 11,6%, while in this case pre-hospital thrombolysis must be used with monitoring of blood coagulation system; 6 points and more – it is advisable to consider possibility of provision of treatment for the patient without pre-hospital thrombolysis with choice of mechanical reperfusion strategy in hospital.

Conclusion

Deaths in patients with ST-elevation acute coronary syndrome constituted 17,8%, while the use of pre-hospital thrombolysis is decreasing the chance of death by 2,2 times. Morphologic analysis of autopsies in this group showed the presence of hemorrhagic transformations of infarcted myocardium which contribute to the increase in external cardiac ruptures up to 25%. External cardiac rupture must be prognosticated using TIMI scale in patients with history of high blood pressure and with duration of 2-3 hours from the debut of acute coronary syndrome, which will help to determine in the future the probability of complications of systemic thrombolysis during pre-hospital stage and to choose optimal reperfusion strategy.

Po-051

Rez de Jardin poster area

HEMORRHAGIC SHOCK FOLLOWING BATH IN A POND CONTAINING LEECHES: A CASE REPORT

Mustafa Yilmaz (1), Mesude Atli (1), Ali Arikan (2), Mehmet Oguzhan Ay (3)

1. Emergency Department, Necip Fazil State Hospital, Kahramanmaraş, Turkey

2. Cardiovascular surgery, Necip Fazil State Hospital, Kahramanmaraş, Turkey

3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Hemorrhagic shock, leech, hirudotherapy

Medical treatment with leeches has been used since ages. In modern medicine, Hirudotherapy can be used in plastic surgery, in the treatment of venous insufficiency and in many other diseases. In the treatment, the substances and enzymes contained in the secretion of leeches are utilized. In this report, we aimed to present the patient using Coumadin who developed irrepressible skin hemorrhages and hemorrhagic shock following bath in a pond containing leeches. Trying to conduct uncontrolled hirudotherapy can become a serious public health issue which may become life-threatening.

Po-052

Rez de Jardin poster area

IMPROVEMENT OF DOOR-TO-ECG TIME IN PATIENTS WITH ACUTE STEMI WITH IMPLEMENTATION OF ESI TRIAGE

Ehsan Bolvardi, Hamid Reza Reihani, Elham Pishbin, Hamide Feize Disfani

Department of Emergency, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Corresponding author: bolvardie@mums.ac.ir

Keywords: door-to-ECG time, ST-elevation myocardial infarction, ESI triage

Background: Acute myocardial infarction is the leading cause of death in Iran. In patients with acute STEMI potential delay during the in-hospital evaluation period may occur from door to data (ECG), data to decision, and from decision to management (PCI or drugs); Reduction in Door-to-ECG times for acute STEMI patients has been shown to improve long-term survival; The sole purpose of this study, was to evaluate the effect of ESI triage, in improving door-to-ECG time in patients with STEMI, in Imam Reza Hospital's emergency department (Iran);

Material and Method: This was a before-after study of STEMI patients who presented to ED. In this study patients presenting with chest pain underwent a 12 lead ECG before and after ESI triage implementation and door-to-ECG time were documented. Patients were considered eligible with

the following ECG criteria: ST-segment elevation ≥ 2 mm, in anterior leads or ST elevation ≥ 2 mm in inferior leads, for 2 or more contiguous leads.

Results: The door-to-ECG time was significantly lower after implementation of ESI triage (28 minutes before vs 13 minutes after ESI triage). It was statistically meaningful (P value = 0.001)

Conclusion: Implementation of ESI triage in Emergency Department in Iran, can significantly diminish the door-to-ECG time, in the patients with STEMI, and hence, decrease the morbidity and mortality in these patients;

Po-053

Rez de Jardin poster area

OBSERVATIONAL AND RETROSPECTIVE STUDY ABOUT THE MANAGEMENT OF PATIENTS WITH MECHANICAL HEART VALVES ADMITTED IN AN EMERGENCY DEPARTMENT FOR A MAJOR BLEEDING.

Aurélien Arnaud (1), Farès Moustafa (1), Nicolas Dublanquet (1), Jeannot Schmidt (1)

1. Emergency department, CHU Clermont-Ferrand, Clermont-Ferrand, France

Corresponding author: fmoustafa@chu-clermontferrand.fr

Keywords: Major bleeding, Mechanical heart valves, VKA

Introduction :

Vitamin K antagonist (VKA) therapy is imperative for patients using mechanical heart valves to prevent thrombotic risk. In case of life threatening major bleeding event, emergency reversal of oral anticoagulation is recommended. The matter of restarting anticoagulation therapy must be investigated. The aim of our study is to evaluate the homogeneity of major bleeding management in terms of VKA neutralization, and anticoagulation therapy restart, for patients with mechanical heart valves.

Material and Method :

We performed a retrospective and descriptive study in the Clermont-Ferrand Hospital emergency unit from 01/01/2010 to 31/12/2011. Patients were recruited from prescriptions of PPSB for the treatment of a major bleeding by the emergency department, with the selection of prescriptions for mechanical heart valves wearers' patients. Results :

Among 612 PPSB prescriptions, 389 were for a major bleeding among which 319 within the emergency unit, and 22 prescriptions for patients with mechanical heart valves actually corresponding to 19 patients (3 appeared twice). The sex ratio is 8 women and 11 men, 76.1 years old on average. Nine patients present a gastro-intestinal haemorrhage and 3 an intracerebral haemorrhage.

Anticoagulation reversal by vitamin K and PPSB is undertaken in 82% of the cases less than 6 hours after the patient admission. Vitamin K is prescribed as recommended in 82% of the cases and PPSB is given at the usual doses in

87% of the cases. The anticoagulation therapy restart is not homogeneous : 24 hours after the major bleeding event for 15 patients (of which 1 intracerebral haemorrhage), from 24 hours to 48 for 1 patient, and more than 48 hours for 4 patients (of which intracerebral haemorrhage). Two patients died before the restarting of the anticoagulation therapy.

Conclusion :

On the one hand, the management of major bleeding events for patients with mechanical heart valves, treated by VKA, in the Clermont-Ferrand Hospital emergency unit, is in accordance with the 2008 HAS guidelines. On the other hand, anticoagulation therapy restarting after a major bleeding event is not homogeneous, revealing subjective evaluations of the bleeding risk versus the thrombogenic risk by each physician.

Po-054

Rez de Jardin poster area

THE RELATION BETWEEN PLASMA RESISTIN LEVELS AND CARDIAC TROPONIN I IN PATIENTS WITH ACUTE CORONARY SYNDROMES UPON ADMISSION TO EMERGENCY DEPARTMENT

Aysegul Bayir (1), Necmettin Tufekci (2), Husamettin Vatanssev (3), Hatice Baran (2), Hasan Kara (2), Seyit Ali Kayis (4)

1. Emergency Department, Selcuk University Faculty of Medicine, Konya, Turkey
2. Emergency Department, Selcuk University Faculty of Medicine, Konya, Turkey
3. Biochemisry Department, Selcuk University Faculty of Medicine, Konya, Turkey
4. Faculty of Vetarinary, Selcuk University, Konya, Turkey

Corresponding author: aysegulbayir@hotmail.com

Keywords: Acute coronary syndromes, resistin, Tnl

Aim: To compare serum resistin levels and Cardiac Troponin I (Tnl) in patients with acute coronary syndromes (ACS) and to compare with healty control subjects.

Methods: It was included to this study that patients with ACS admitted to emergency department. Healty volunteers were included to control group. Patients with chronic obstructiv pulmonary diseas, diabetes mellitus, acute stroke, renal failere, heart failure, trauma, hepatic failere, infection, sepsis, hematologic and oncologic disease were excluded from study. Venous blood samples were obtained from subjects of patients and control group upon admission to emergency. All patients cardiac Tnl was determined on admission. Plasma samples were stored at -80 oC until evaluate to resistin levels. Patients with ACS followed up for length of hospital stay, length of intensive care unit stay and in hospital mortality. The plasma resistin levels were determined by ELISA method. The results of ACS and control groups were compared by Mann Whitney U Test.

Results: The mean plasma resistin level of ACS patients (n=31) was significantly higher (14.25±7.78 ng/ml) than

control group (n=20) (4.87±2.51 ng/ml) (p=0.000). Plasma resistin levels of ACS patients were not correlated with Tnl levels (p>0.05). The mean plasma resistin level of patients who died in ACS group significantly higher than surviving patients (p=0.00). It was not found a significant difference between mean plasma resistin level and lengt of hospital stay. It was not found a significant difference between mean plasma resistin level and lengt of intensive care unit stay.

Conclusion: Higher plasma resistin levels could be an indicator of poor prognosis and mortality in patients with ACS. But, higher plasma resistin levels are not related to degree of ischemic myocardial injury. More compherensive studies with larger patients group are needed in this area.

Po-055

Rez de Jardin poster area

RIGHT VENTRICULAR DYSFUNCTION ASSESSMENT IN HEMODYNAMICALLY STABLE PULMONARY EMBOLISM PATIENTS WITH BEDSIDE ECHOCARDIOGRAPHY AND CARDIAC BIOMARKERS

Vesna Degoricija (1), Nikola Bulj (2), Ines Poto?njak (3), Mirella Sharma (4), Ljerka Lukinac (5), Mislav Vrsalovi? (2), Hrvoje Pintari? (6)

1. Department of Intensive Care Medicine, Sisters of Mercy University Hospital Centre, University of Zagreb School of Medicine, Zagreb, Croatia
2. Department of Cardiology, Sisters of Mercy University Hospital Centre, University of Zagreb School of Medicine, Zagreb, Croatia
3. Department of Medicine, Sisters of Mercy University Hospital Centre, Zagreb, Croatia
4. Department of Intensive Care Medicine, Sisters of Mercy University Hospital Centre, Zagreb, Croatia
5. Department of Oncology and Nuclear Medicine, Sisters of Mercy University Hospital Centre, Zagreb, Croatia
6. Department of Cardiology, Sisters of Mercy University Hospital Centre, University of Zagreb School of Dental Medicine, Zagreb, Croatia

Corresponding author: vesna.degoricija@gmail.com

Keywords: pulmonary embolism, right ventricular dysfunction, outcome

Introduction. According to recent studies echocardiography and cardiac biomarkers (BNP, NT-proBNP, cTnT) are useful tools in assessment of RVD and they have a high diagnostic and prognostic value in pulmonary embolism (PE) patients (pts), since almost 50% of them have at least one echocardiography sign of the right heart dysfunction. Echocardiography is a diagnostic method of choice in hemodynamically unstable PE pts without possibility of urgent MSCT pulmonary artery angiography.1 Role of echocardiography in hemodynamically stable PE pts is primarily reserved for additional evaluation of the early mortality risk, since right ventricular dysfunction (RVD) due to PE predicts increased PE-related mortality in normotensive and hypotensive pts.2

Objectives. The aim of present study was to evaluate the prognostic value of bedside echocardiography and cardiac biomarkers in RVD assessment of hemodynamically stable PE pts associated with early adverse outcome.

Methods. A single-center prospective study of PE pts was conducted at the medical ICU, Sisters of Mercy University Hospital, Zagreb, Croatia in 2010/2011. Acute PE was confirmed with MSCT angiography. The pts were divided into three severity groups: high- (n=33; 31.7%), intermediate- (n=51; 49.1%) and low-risk (n=20; 19.2%) pts. BNP, NT-proBNP, and cTnT were measured at admission, 6, 12, 24 and 72 hrs following admission. Echocardiography was performed within 24 hrs. The main outcome parameter was in-hospital death.

Results. Out of 104 pts, 19 (18.7%) died, none of whom was in the low-risk group ($p < 0.001$). Mean pts age was 68.7 ± 13.4 yrs with female predominance (63.5%). The investigated data confirmed the hypothesis that echocardiography and increased levels of NT-proBNP and cTnT successfully detected PE pts with RVD. This was especially evident in the group of hemodynamically stable pts where echocardiography

< 0.001) NT-proBNP ($P = 0.006$), and cTnT ($P = 0.037$) demonstrated a correlation with RVD. Echocardiography sensitivity in RVD assessment was 98.04% with a specificity of 45%. Effectiveness of echocardiography as a RVD diagnostic tool was assessed with odds ratio [OR: 40.09 (95% CI 4.54-1826.84)]. Right ventricular dilatation, free wall motion abnormalities, tricuspid regurgitation, pulmonary hypertension and paradoxical movements of the interventricular septum were correlated with RVD ($P < 0.001$ for all). The Friedman test was used to determine the dynamics of cardiac biomarkers release. The data showed a significant increase in cTnT and NT-proBNP release between initial and first control sampling, in both the high- and intermediate-risk PE pts groups ($P < 0.001$). NT-proBNP levels > 500 pg/mL might detect pts with persistent RVD 48 hrs following admission and therefore could provide additional information regarding risk stratification. Initial BNP correlated with the PE outcome, concentrations ≥ 526 pg/mL showed a negative predictive value of 100%.

Conclusion. Bedside echocardiography and increased levels of cTnT and NT-proBNP successfully detected hemodynamically stable PE pts with RVD, while initially increased levels of BNP detected pts with a higher risk of death. Serial sampling of NT-proBNP, up to 48 hrs, might be useful in detecting pts with persistent RVD, and therefore could provide additional information in further risk stratification.

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Po-056

Rez de Jardin poster area

EVIDENCE OF INCREMENTAL DIAGNOSTIC QUALITY GAIN IN THE ASSESSMENT OF PULMONARY EMBOLISM WITH CT ANGIOGRAM VS. VENTILATION PERFUSION SCAN USING WELLS SCORE AND BAYESIAN STATISTICAL MODELING

Laila Cochon (1), Monserrat Peña (1), Baez Amado Alejandro (2)

1. Emergency Department, CEDIMAT, Santo Domingo, Dominican Republic

2. Emergency Medicine, SENSA Healthcare / CEDIMAT, Santo Domingo, Dominican Republic

Corresponding author: lailacochon@hotmail.com

Keywords: Diagnostic quality, Pulmonary Embolism, Bayesian model

61 (85.9%) out of 71 pts; (P

Objective: To assess the diagnostic value of contrast enhanced helical computed tomography angiography (CTA) in comparison to Ventilation Perfusion (V/Q) scan, in the diagnostic assessment of pulmonary embolism (PE) in low, moderate, and high risk wells-score criteria stratified patients using Bayesian statistical modeling.

Methods: Wells criteria was applied to stratify populations by the risk of having pulmonary embolism, stratified in low, moderate and high risk. Each population was attributed a percentage of PE risk, which was used as pre-test probability in the Bayesian nomogram. Sensitivity and specificity of contrast enhanced CT angiography and ventilation perfusion scan for the diagnosis of PE were attained from pooled meta analysis data from twelve articles. Likelihood ratios (LR) were calculated for the two diagnostic tests and inserted in a Bayesian nomogram to attain posttest probabilities. Absolute and relative diagnostic gains were analyzed comparing posttest probability from that of the wells pretest result. Absolute diagnostic gain was defined as net difference between pretest and posttest probability. Relative gain was obtained as the percentage of absolute gain in pretest probability. Comparative gain difference was attained comparing the net percentage point superiority in absolute gain of CTA over V/Q scan.

Results: Pooled diagnostic quality data obtained from meta analysis reflected sensitivity of helical CT of 86.0% (95% confidence interval [CI]: 80.2%, 92.1%), and specificity of 93.7% (95% CI: 91.1%, 96.3%). Ventilation perfusion scanning yielded a sensitivity of 98.3% (95% CI: 97.2%, 99.5%) and a specificity of 4.8% (95% CI: 4.7%, 4.9%). Likelihood Ratios (LR) for CTA resulted as followed: +LR 14 and -LR 0.15, for ventilation perfusion scanning, +LR 1.89 and -LR 0.04. Inserting wells criteria risk score as pretest probability and positive likelihood ratio in Bayes nomogram, probability results for CTA were: low risk yielded a post test probability of 71.1% an absolute gain of 56.1% and ad relative gain of 374%, moderate risk post test probability was 85.1% absolute gain of 56.1% and relative

gain of 193.4%, high risk post test probability of 95.2% absolute gain of 36.2 % and relative gain of 61.35 %. Values for V/q scan utilizing positive likelihood ratios were: low risk using wells criteria resulted in a 25% posttest probability, 10% absolute gain and 66.6% relative gain, moderate risk had a 43.5% post test probability 14.5% absolute gain and 50% relative gain, high risk yielded 73.1% post test probability, absolute gain of 14.1% and relative gain of 23.89%. Comparative gain difference for low risk population was 46.1%; in moderate risk 41.6% and in high risk a 22.1% superiority.

Conclusion: Bayesian statistical model demonstrated the superior diagnostic quality of helical computed tomography angiography when compared to ventilation perfusion scan for the diagnosis of pulmonary embolism in risk stratified patients using wells criteria score. Low risk patients are recognized to have a superior overall comparative gain difference, hence being the most beneficial population in being diagnosed of pulmonary embolism using CTA.

Po-057

Rez de Jardin poster area

OUT OF HOSPITAL REPERFUSION MANAGEMENT BY PERCUTANEOUS CORONARY INTERVENTION OF ACUTE CORONARY SYNDROM WITH ST ELEVATION

Anne-claire Michel Ep. Mlynski (1), Hugues Lefort (1), Daniel Jost (1), Olga Maurin (1), Pascal Belondrade (1), Jean-pierre Tourtier (1), Laurent Domanski (1)

1. Emergency medicine departement, Fire Brigade of Paris, Paris, France

Corresponding author: anne-claire@mlynski.net

Keywords: Acute coronary syndrome, Mycardial infarction, Electrocardiography

Introduction: The out of hospital medical care of an acute coronary syndrome with an ST elevation by an emergency medical team led to a decision of coronary reperfusion by either primary percutaneous coronary intervention (PCI) or fibrinolysis (Fib). The European Society of Cardiology's (ESC) guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation advocate in the case of a PCI a balloon inflation (BI) in 120 minutes (min) after the first medical contact (FMC), and attempting to approach 60 min for recent onset ACS.

Pinto et al. (Circulation 2006), whose work contributed to the recommendations, reported in a retrospective analysis of registry that PCI lost its advantage over fibrinolysis if it was done after the 40th min after the FMC in patients aged under 65 with prior myocardial infarction (MI) and with symptoms for less than 2 hours; after the 43rd min in patients aged under 65 with prior MI and with symptoms for more than 2 hours; and after the 58th min in patients aged under 65 with a non-prior MI and with symptoms for less than 2 hours. Therefore, Pinto suggested an adaptation of the reperfusion strategy depending on the time of the first symptoms, age, and MI localization. egarding the

recommendations. The aim of our study was for each subgroups of the Pinto classification to evaluate our prehospital practices in regard to the ECS recommendations.

Materials and methods: Prospective multicenter observational study. Inclusion criteria: ACS with ST elevation supported by four French medical prehospital teams in 2012. Variables collected: Age, time from onset of symptoms, out of hospital first-time medical contact, and delay between FMC and PCI. Statistical analysis: Description of "delay FMC-PCI" on the total number and the eight subgroups defined by the categorization of "age" variable "FMC-PCI delay" and "MI localization."

Results: During 2012, 155 STEMI were included. The median age was 61 years [50–75], 80% male. Delays for PCI after prehospital FMC were measured in 82 patients (53%). The PCI median delay was 90 min, interquartile range (IQR) [78–100]. In addition, the FMC-BI delay <= 120 min was not observed in 10 patients (12%) and the FMC-BI delay <= 90 min was exceeded in 45 cases (55%). Consider the subgroups A: -65A, prior MI (or lateral MI) since less than 2 hours (n = 19, 18.5%); B: -65A, prior MI (or lateral MI) since more than 2 hours (n = 5 or 6%); and C: -65A, non anterior or lateral MI since less than 2 hours (n = 22 or 26%). The median times of their PCIs were, respectively, A: 90 minutes (IQR [76–96]), B: 98 min (IQR [95–101]), and C: 98 minutes (IQR [95–103]). The recommended time of 60 min was observed for one patient.

Discussion: The ESC recommended objectives were often not achieved within the subgroups examined. The SMURs studied were involved in a densely populated area with a large number of technical platforms. This last point should lead to reconsideration of the reperfusion strategy of STEMI prehospital, and TPH is an alternative available in some cases and a better organization of patient care in others.

Po-058

Rez de Jardin poster area

EKG VOLTAGE CHANGES IN CARDIAC TAMPONADE

Michael Locurto, Gino Farina, Robert Silverman

Emergency Medicine, Long Island Jewish Medical Center, new hyde park, United States

Corresponding author: gfarina@lij.edu

Keywords: Tamponade, EKG, Voltage change

Cardiac tamponade is a potentially life threatening clinical process that may be difficult to recognize in the acute care setting since the typically described textbook presentation is uncommon. For example hypotension is often absent at the time of the diagnosis, and in fact hypertension is a common finding (Kapoor et al J of Emer Med May 2010). While low voltage on an EKG should raise suspicion for the presence of pericardial effusion and tamponade, numerous reports indicate a relatively low sensitivity and specificity of this finding. We speculated that a change in the EKG voltage might improve diagnosis and our goal was to

determine whether comparison of an Emergency Department (ED) EKG to an EKG obtained in a prior visit helps in identifying cardiac tamponade in patients presenting to the ED.

Methods:

We conducted a retrospective chart review from a five year time period identifying cases by hospital discharge ICD codes. Eligible cases included the diagnosis of tamponade, a pericardial effusion, and an EKG on ED presentation. Tamponade was diagnosed either by ECHO or deemed present at surgery. Low EKG voltage was defined using the criteria of <5mm voltage in each standard limb lead and <10mm in each precordial lead (Chou's Electrocardiography in Clinical Practice: Adult and Pediatric, 6e 2008). A change in voltage was calculated as follows: for each patient the limb and chest leads were added separately on both the baseline and study EKGs. From these figures, the average change in limb and chest lead voltages was calculated. The study was approved by the Human Investigational Review Board.

Results:

Of the 32 patients included in the study, a total of 3 (10%) had low voltage on the ED EKG. Among the 32 patients, 15 had a prior EKG done at our institution which was available for review. All 15 patients had a decrease in voltage in either one or both leads. In 12 patients there was a voltage decrease in both limb and chest leads, with an average decrease of 3.0mm in the limb leads and 6.0mm in the chest leads. Furthermore, in 8 patients, the average drop in voltage in at least one of the two lead groupings was more substantial and exceeded 5mm or 1 large box on the EKG. Of note, most (6/8) of these patients did not have low voltage on the ED tamponade EKG.

Conclusion

Low voltage on the EKG infrequently occurs in ED diagnosed cardiac tamponade and should not be used to exclude the diagnosis. Since decreases in EKG voltages were commonly found in patients with tamponade, this may represent a better way to utilize the EKG in diagnosing tamponade. A larger study is needed to develop EKG criteria that may assist for tamponade screening.

Po-059

Rez de Jardin poster area

DEVELOPMENT OF A SIMPLE MODEL TO MEASURE ELECTRICAL CURRENTS DURING DEFIBRILLATION

Dana Al-khaled (1), Erik Kulstad (1), Patrick Shanley (2)

1. Emergency Medicine, Advocate Christ Medical Center, Oak Lawn, United States
2. Engineering, Northwestern University, Evanston, United States

Corresponding author: ekulstad@gmail.com

Keywords: Defibrillation, Electrode, Measurement

Background: Successful defibrillation is critical for the termination of life-threatening arrhythmias. Unfortunately,

much remains unknown about the mechanism of defibrillation. The delivery of a large enough current in the appropriate waveform through myocardial tissue is thought to be critical. However, models for measuring defibrillation currents are not widely available. We sought to design an inexpensive, simple model that would allow measurements of defibrillation currents while varying electrode placement, energy, and other factors often relevant for defibrillation.

Methods: We utilized a model design previously reported to be useful for teaching ultrasound guided pericardiocentesis, building upon the design by including leads positioned for measurement of current across the simulated myocardium. The model is made with low cost household materials (gelatin, food dye, balloons) that form a solid gelatin block with a water filled balloon in the center. The model is analogous to the subxiphoid region to replicate the insertion of an esophageal internal defibrillator in human subjects. The model also includes copper wires extending out of the gelatin block to measure current. Using a multimeter set to measure milliamps (mA) while connected to leads in the model, we varied electrode placement and Joule settings to determine the amount of current received by the simulated myocardium under various conditions...

Results: We found that current could be measured across the simulated myocardium while simultaneously varying placement of defibrillation electrodes from both external to the model (on the surface of model) as well as from internal (with electrode placed internally, as would be the case if using an esophageal electrode). Currents measured were typically in the range of 0.2 mA to 0.6 mA, with values dependent on location of electrodes.

Conclusions: Our model appears to allow measurement the amount of current applied across a simulated myocardium under various conditions, and may be useful for further experimentation on the effects of electrode placement, energy level, temperature, and other variables on defibrillation currents.

Po-060

Rez de Jardin poster area

ADVANCED NURSE PROCESS FOR THE TRIAGE OF EMERGENCY DEPARTMENT PATIENTS WITH CHEST PAIN : A PROSPECTIVE STUDY.

Vincenzo D'orio (1), Alexandre Ghuysen (2), Jerome Jobe (3), Christophe Vanderclayen (2)

1. Emergency Department, University Hospital of Liège, Liege, Belgium
2. Department of Public Health, University of Liège, Liège, Belgium
3. Emergency Department, University Hospital of Liège, Liège, Belgium

Corresponding author: a.ghuysen@chu.ulg.ac.be

Keywords: chest pain, triage, nurse

Introduction:

Since their creation, most emergency departments have experienced overwhelming increases in patients' admissions, leading to severe overcrowding and adverse patient outcomes. Although, the mitigating effect of nursing triage on overcrowding is still under debate, implementation of advanced nurse triage practices at patient admission may offer interesting perspectives. Indeed, development of triage flowcharts based on physician-approved algorithms may allow the nurse initiate diagnosis procedure and treatment. We designed the present study to evaluate the impact of such an advanced nurse triage process for emergency department patients with acute chest pain.

Material and methods

This was a prospective trial, performed on 58 consecutive incoming patients suffering from acute chest pain. At admission, patients were randomly assigned either to conventional care (group A, n = 31) or to advanced triage care, aiming at the early evaluation of acute coronary syndrome diagnostic probability and severity stratification (group B, n = 27).

The effectiveness of this advanced nurse triage was evaluated in terms of patient's emergency department flow times.

Results

Advanced nurse triage significantly reduced the time delay between admission and first contact with a nurse ($p = 0.028$), the time needed for ECG acquisition ($p = 0.048$), obtaining cardiac enzymes levels ($p < 0.0001$) and patient's global length of stay in the emergency department (LOS) ($p = 0.0447$).

Conclusion

In our experience, advanced nurse triage of patients presenting with acute chest pain may in the emergency department not only helped to the early identification and treatment of patients with acute coronary syndromes, but it also reduced patients' length of stay.

Po-062

Rez de Jardin poster area

AUDIT OF PATIENTS INVESTIGATED FOR DEEP VEIN THROMBOSIS (DVT) IN AN IRISH INNER CITY EMERGENCY DEPARTMENT (ED).

Nicoleta Cretu, Tomas Breslin, Edward Brazil, John Mcinerney, Adrian Moughty
Emergency Department, Mater Misericordiae University Hospital, Dublin, Ireland

Corresponding author: nicoletacretu14@yahoo.com

Keywords: DVT, Ultrasound, Audit

Introduction

An outpatient management guideline was recently introduced at our institution to standardise investigation and treatment of DVT. As ED care is predominately delivered by junior doctors on short rotations in our EDs, compliance with guidelines is crucial.

Methods

A retrospective study of the records of all patients who had lower limb Doppler studies for DVT over a three month period from January to March 2013 was performed. Details about documentation of wells score, use of d-dimer assays and ultrasound, and patient management were recorded for each patient.

Results

82 patients were investigated for DVT with ultrasound. 11 patients (13.41 %) were positive for DVT, 9 patients (10.98%) were positive for superficial thrombophlebitis, 8 patients (9.76%) had oedema of the limbs, 4 patients (4.88%) had a Baker cyst. 1 patient (1.22%) presented with each of the following conditions; an intramuscular hematoma, a partial tear of the lateral collateral ligament, an arterio-venous fistula, a post-operative hematoma, and 57 patients (69.51%) had a normal Doppler ultrasound.

From 11 patients (13.41%) positive for DVT, 2 patients (2.44%) were intravenous drug users (IVDU), 3 patients (3.66%) were ex-IVDU and 6 patients (7.32%) were non-IVDU.

2 patients who did not have DVT were admitted for other reasons.

Wells score was documented in 12 patients (14.63%).

D-dimers were performed in 64 patients (78.04%).

All patients diagnosed with DVT were treated as outpatients, as per protocol.

Conclusion

The documentation of Wells scoring shows significant room for improvement as does the appropriate use of D-dimer testing. A compulsory online induction program is now being introduced in a further effort to address this and to help enforce departmental guidelines.

Dr. Tomas Breslin, Consultant in Emergency Medicine
Mater Misericordiae University Hospital, Dublin, Ireland
Dr. Nicoleta Cretu, Registrar in Emergency Medicine

Po-063

Rez de Jardin poster area

ADMISSION RATES FOR EMERGENCY DEPARTMENT PATIENTS WITH CONGESTIVE HEART FAILURE ARE HIGHER IN THE NEW YORK METROPOLITAN AREA THAN CANADA

Andrew Graziano (1), Barnet Eskin (2), John Allegra (3)

1. *Emergency Medicine, Morristown Medical Center, Morristown, United States*

2. *Emergency department, Morristown Medical Center, Morristown, United States*

3. *Emergency Department, Morristown Medical Center, Morristown, United States*

Corresponding author: jallegra@gmail.com

Keywords: CHF, Hospitalization rates, emergency patients

Study objectives: A recent Canadian study attempted to risk stratify emergency department (ED) congestive heart patients (CHF) patients to determine those that could safely be discharged home. From a prospective cohort of 559 patients, they developed a scale with the lowest risk category having a serious adverse event risk of 3%. In that study, 38% of patients were admitted. The United States (US) spends a greater proportion of its gross domestic product (GDP) on health care than any other country. One cause for this may be lower physician risk tolerance in the US because of concern about malpractice litigation. Because of this, we hypothesized that the admission rates would be higher for ED CHF patients in the New York metropolitan area than in Canada.

Methods: Design: Retrospective cohort of ED visits. Setting: 24 New York metropolitan EDs with annual visits from 26,000 to 86,000. Subjects: Consecutive patients seen by ED physicians over the same time frame as the Canadian study, 9/1/2007 to 4/31/2010. Protocol: We identified CHF patients using ICD9 codes and calculated the proportion hospitalized. We compared the proportion admitted with the Canadian study using the Student t-test ($\alpha = 0.05$) and calculated 95% confidence intervals (CI).

Results: The US EDs had 33,137 CHF visits. In the US and Canadian the mean ages of the CHF patients were 74 and 76 years and 52% and 44% were female, respectively. The proportion hospitalized was 91% in the US. This represents a difference from Canada of 53%, [95% CI: 49% to 57% ($p < 0.001$)].

Conclusion: We found that the proportion of ED patients with CHF hospitalized in the New York metropolitan area is more than twice that in Canada (91% vs. 38%). This may be due to lower physician risk tolerance in the US. Further study is warranted to determine if outcomes in CHF patients are comparable between the US and Canada and whether opportunities exist to render care in a more cost effective manner.

Po-064

Rez de Jardin poster area

ECHOCARDIOGRAPHIC AND THERAPEUTIC PROFILE OF CHRONIC INSUFFICIENT CARDIAC PATIENTS IN ACUTE DECOMPENSATION TREATED IN EMERGENCY DEPARTMENTS

Mehdi Ben Lassoued (1), Karima Taamallah (2), Mekki Ben Salah (1), Imed Bennouri (1), Olfa Djebbi (1), Makrem Baatour (1), Mounir Haggui (1), Wafa Fehri (2), Habib Haouala (2), Khaled Lamine (1)

1. Emergency department, Military Hospital, Tunis, Tunisia

2. Cardiology department, Military Hospital, Tunis, Tunisia

Corresponding author: mehdi.benlassoued@gmail.com

Keywords: echocardiographic profile, chronic insufficient cardiac, emergency departments

Introduction: Chronic cardiac insufficiency (CCI) is a major problem of public health in Tunisia by its frequency and its

consequences in terms of associated diseases and related deaths and by its impact on the whole system of medical care patients frequently present to emergency departments with symptoms and signs of CCI.

Objective: The objective of our study is to define the echocardiographic and therapeutic features of CCI in patients presenting to emergency departments.

Material and methods : This prospective study was carried out in the emergency department of the military hospital of Tunis (Tunisia) over the period of 3 months going from December 2012 through February 2013, involving all the patients who presented with symptoms and signs of CCI in decompensation. All of them benefited on admission from echocardiographic examination performed by a previously trained emergency physician in Doppler echocardiography.

Results: The study involved 62 patients aged 60.8 + 11 years on average. Seventy-five per cent of them were men. Of the patients included in the study, 45% were hypertensives, 41% were diabetics and 25% were suffering from atrial fibrillation. Sixty-six per cent of cases of CCI in this study were of ischemic origin and 20% of primary origin.

Echocardiography performed on admission by an emergency physician yielded the following findings: mean left ventricular telediastolic diameter (TDD) = 64 + 6 mm; mean left ventricular telediastolic volume (TDV) = 163 + 52 ml; mean ejection fraction (EF) = 35.9 + 7%; 63% of patients had restrictive mitral flow. Mean systolic pulmonary arterial pressure was 45 + 13 mmHg. Thirty-two per cent of patients had mitral regurgitation > grade 2.

The study revealed that 70% of patients were on inhibitors of angiotensin converting enzyme, 18% were on receptor antagonists of angiotensin 2 (ARA2), 56% were on beta-blocking agents and 82% were on loop diuretics.

Mean hospital stay in the emergency department was 18 + 6 hours. Nineteen per cent of the patients were referred to the cardiology department, 4% of them were admitted to the intensive care unit and we had 0.5% of deaths in the emergency department.

Conclusion: The prognosis of chronic cardiac insufficiency remains severe despite taking proper therapy.

Po-065

Rez de Jardin poster area

LACTATE LEVELS DURING THERAPEUTIC HYPOTHERMIA INDUCED VIA ESOPHAGEAL HEAT TRANSFER IN SWINE

Erik Kulstad (1), D Mark Courtney (2), Anja Metzger (3), Patrick Shanley (4), Timothy Matsuura (5), Jennifer Rees (6), Scott Mcknite (7), Keith Lurie (3)

1. Emergency Medicine, Advocate Christ Medical Center, Oak Lawn, United States

2. Emergency Medicine, Northwestern University, Chicago, United States

3. Emergency Medicine, University of Minnesota, Minneapolis, United States

4. Engineering, Northwestern University, Evanston, United States

5. Bioengineering, University of Minnesota, Minneapolis, United States

6. Research, Advanced Circulatory Systems, Inc., Minneapolis, United States

7. Experimental Medicine, Minneapolis Medical Research Foundation, Minneapolis, United States

Corresponding author: ekulstad@gmail.com

Keywords: therapeutic hypothermia, lactate, esophageal cooling

Objectives: Mild therapeutic hypothermia is known to improve outcomes in a number of clinical conditions, but reliable prognostic factors for survival after treatment with therapeutic hypothermia remain limited. Recent reports suggest that lactate may serve in some predictive capacity. Because the effects of hypothermia on baseline lactate levels are not well described, we sought to measure lactate levels in a hemodynamically stable swine model undergoing a 30-hour study of a novel esophageal heat transfer device. We hypothesized that lactate levels at goal temperature would decrease by at least 10% from baseline.

Methods: We reviewed measurements of serial lactate levels in five female Yorkshire swine (mean weight of 65 kg) that underwent a 30 hour cooling protocol (24 hours of cooling, followed by at least 6 hours of re-warming) during a study of a novel esophageal heat transfer device. After swine were anesthetized, they were cooled by 4 C to goal temperature, maintained for 24 hours, and gradually re-warmed, and serum chemistry was obtained at regular intervals through an indwelling arterial catheter and analyzed with a GEM 3000 blood gas analyzer.

Results: The mean lactate level among the five swine prior to initiation of cooling was 0.9 mmol/L. Lactate levels typically increased during the start of cooling (to a mean of 1.0 mmol/L) before decreasing to a range of 0.5 mmol/L to 0.8 mmol/L during maintenance of hypothermia (representing an 11% to 44% decrease from baseline).

Conclusions: Therapeutic hypothermia in swine induced with a novel esophageal heat transfer device resulted in a decrease in baseline lactate levels. These findings suggest that interpretation of lactate levels during hypothermia may require additional consideration of the influence of hypothermia on lactate levels.

Po-066

Rez de Jardin poster area

CASE OF RESISTANT TORSADES DE POINTES AFTER USE OF SLIMMING PILLS

Emre Salçın (1), Ömer Faruk Çelik (1), Özge Onur (1), Fatih Mehmet Korçak (1), Serkan Emre Eroğlu (1), Haldun Akoğlu (2), Arzu Denizbaşı (2)

1. Emergency department, Marmara University Pendik Research and Training Hospital, İstanbul, Turkey

2. Emergency department, Marmara University Pendik Research and Training Hospital, İstanbul, Turkey

Corresponding author: drseroglu@gmail.com

Keywords: Torsades de pointes, Slimming pills, Ventricular arrhythmia

Introduction

Torsades de pointes ("twisting of the points") is a specific variant of polymorphic ventricular tachycardia in which the QRS axis swings from a positive to a negative direction in a single lead. This rhythm results from a triggered arrhythmic mechanism and usually occurs in short runs of 5 to 15 seconds at a rate of 200 to 240 beats/min. This form of ventricular tachycardia generally occurs in patients with serious myocardial disease. Drugs that further prolong repolarization, such as quinidine, disopyramide, procainamide, phenothiazine, and tricyclic antidepressants, exacerbate this arrhythmia. Risk factors for drug-induced torsades de pointes include age >65, female sex, renal insufficiency, electrolyte disturbances, arrhythmias with long pauses, genetic predisposition, and administration of more than one drug known to increase QT. And there is limited data about slimming pills effects on QT interval.

Case

A 30-years-old female presented with history of sudden onset feeling unwell. There was no history of headache, seizures, chest pain, palpitations, or any cardiac disease. Vital signs were stable and glasgow Coma Scale was 15. In the physical examination there was no specific finding. The initial ECG showed sinus rhythm. Suddenly she had a cardiac arrest, after 10 minutes of CPR she had ventricular fibrillation, defibrillation was performed and spontan circulation was restored. Electrolytes were normal except serum potassium level (3,29) and it was corrected. Then she had numerous torsades de pointes episodes regardless of magnesium and amiodarone infusions after normalization of potassium level. Sinus rhythm restored with lidocaine infusion after 72 hours. The patient had no any cardiac history and no etiologic risk factor for torsades de pointes. Slightly low serum potassium level was corrected properly. In detailed past medical history after the patient stabilized we learned that she had got a new natural slimming pill for a week.

Discussion

In many countries there are warnings to consumers against buying slimming pills marketed as natural products that actually contain banned substances and prescription medicines. People must be warned of the dangers of taking the slimming pills, because some of these products contain sibutramine, a prescription medicine withdrawn in October 2010 after a study showed an increased risk of major cardiac events especially ventricular arrhythmias.

Po-067

Rez de Jardin poster area

STENT THROMBOSIS FOLLOWING PLATELET TRANSFUSION IN A PATIENT WITH MYELODYSPLASTIC SYNDROMES (MDS)

Shakib Ziyada (1), Federica Paglia (1), Maurizio Di Lorenzo (2), Raffaele Schirripa (1), Valentina Valeriano (1), Nur Hashi Alasow (1), Caludia Cicchini

(1), Maria Teresa Proietti (1), Sabrina Leonetti Crescenzi (3), Francesco Rocco Pugliese (1)

1. Emergency department, Hospital Sandro Pertini, Roma, Italy
2. Cardiology department, Hospital Sandro Pertini, Roma, Italy
3. hematology day hospital, Hospital Sandro Pertini, Roma, Italy

Corresponding author: shakibz@hotmail.it

Keywords: Platelet transfusion, Stent Thrombosis, Myelodysplastic Syndromes

Introduction

The myelodysplastic syndromes (MDS) is one of the most common hematologic malignancies affecting adults.

The estimated incidence of MDS ranges from 3.5-12.6/100,000 per year in the U.S. However, the relative risk increases with age, reaching

15-50/100,000 per year in persons older than 70 years

This diseases associated with bone marrow failure, peripheral cytopenias.

The natural history of these syndromes ranges from a chronic course that may span years to a rapid course of acute myeloid leukemia (AML).

The incidences of atherosclerosis and myocardial infarction in pa-tients with MDS and chronic thrombo-cytopenia are very low.

Thrombocytopenai is a risk factor for hemorrhage, and platelet transuion reduces the incidence of bleeding. The threshold for prophylactic platelet transfusion is 10,000/ μ L.

This paper documents a case of late stent thrombosis was reported within 8 hours after platelet transfusion in a patient with platelet count: 8000/ μ L and suspected bloody diarrhea.

Case report

An 88-year-old woman is presented to the emergency department (ED) by ambulance with a 3 days history of abdominal pain and diarrhea .

His medical history includes myelodysplastic syndrome (MDS) ,type 2 diabetes, hypertension, hyperlipidemia, ischemic heart disease with past history revealed that he had been admitted to anther hospital a year ago for acute coronary syndrome and percutaneous coronary intervention (PCI) of the right coronary artery (RCA) and the left anterior descending artery (LAD) with stents implantation. His medications include bisoprolol, metformin, ramipril, simvastatin, aspirin, omeprazole.

Few days before admission she had stopped to take aspirin. On arrival to the emergency department the patient appears with fatigue and weakness. The physical examination reveals tenderness in the left iliac.

The vital signs were stable temperature is 36.8°C. Pulse is regular, with a rate of 75 beats/min. Blood pressure is 110/70 mm Hg,

Hematologic examination shows (initial white blood cell count: 8990, hemoglobin: 11.6 g/dL, platelet count: 15000/ μ L).In the emergency department she was treated with analgesia,Intravenous fluids and Metronidazole.

The next day her laboratory findings showed that she had severe thrombocytopenia and anemia (platelet count: 8000/ μ L,Hemoglobin 8.7g/dl,white blood cell 6770).

Due to suspected bloody diarrhea the hematologist recommended platelet trans-fusion and Prednisone.

Therefore, transfusion of 6 pints of platelet concentrates was performed. 8 hours later she developed chest pain and dyspnea.

The electro-cardiogram (Fig. 1) and the cardiac markers have confirmed the diagnosis of STEMI.

The day after coronary angiography demonstrated total occlusion of the stent in the left anterior descending (LAD), Balloon angioplasty was done.

Discussion

The myelodysplastic syndromes (MDSs) are heterogeneous hematopoietic diseases associated with bone marrow failure, peripheral Cytopenias.

The incidences of atherosclerosis and myocardial infarction in patients with myelodysplastic syndromes and chronic thrombocytopenia are very low.

There are few reports of stent thrombosis associated with blood component transfusion. Cornet et al.reported three case with gastrointestinal bleeding who received platelet transfusion early in the course after stenting, stent occlusion was diagnosed 6 to 17 hours after platelet transfusion.

Hyun-Sung Shin ed al.Reported a case of a late Stent Thrombosis Following Platelet Transfusion in a Patient With Aplastic Anemia

In our case,the patient was with severe thrombocytopenia due to MDS and bloody diarrhea,platelet transfusion was done inevitably.

8 hours later she developed NSTEMI with stent thrombosis.

In conclusion, our observations in patients with coronary stent implantation,platelet transfusion is a risk factor for occlusion of the stent.

Po-068

Rez de Jardin poster area

ENDOCARDITIS ON A CARDIAC TUMOR: THE IMPORTANCE OF AN ECHOCARDIOGRAPHY.

Vanesa Cabrera Caballero (1), Nuria Daroca Miro (1), Felicitas Garcia Ramallal (1), Eva Guerra Retamero (1), Cristina Marimon Blanch (1), Concepcion Pullana Bellido (1)

1. Emergency Department, Hospital Universitari Sant Joan, Reus, Spain

Corresponding author: nuriadaroca@yahoo.es

Keywords: Endocarditis, Myxoma, Echocardiography

INTRODUCTION: Cardiac tumors are rare in children. Their prevalence ranges from 0.00017 to 0.28%. Most of them have benign histology. Malignant cardiac tumors are rare, constituting less than 5% of all cardiac tumors.

The most common cardiac tumors are rhabdomyomas, followed by fibromas and myxomas.

Myxomas represent 9 to 15% of cardiac tumors and are usually found in the atrial septum, mitral valve and left atrium. While some of them may go unnoticed, others are notorious for their wide spectrum of clinical presentations depending on the size they have and where they are located. Some of the symptoms that can result from a

myxoma are: rhythm and conduction disorders, cardiomyopathies, constitutional syndrome, heart failure, simulate a cyanotic congenital heart disease and even a sudden death from arrhythmia or cardiac tamponade.

CLINICAL CASE: A 2 years old child was brought to our emergency service coming from a local hospital. He was suffering fever for the last two weeks and a new-onset pathologic murmur. On physical examination we found: hepatomegaly 1cm, mucocutaneous pale, rhythmic heart rate and systolic murmur II/VI in mesocardium.

LAB TEST: Anemia (hemoglobin 10g/dl), neutrophilia (WBC 16200/mcl, 72% neutrophils), thrombocytosis (707000 platelets/mcl) an elevated CRP (11.2mg/dl) and serial blood cultures were negative.

CHEST X-RAY: No abnormality

ECG: sinusal rhythm 150 bpm without rhythm disorders, no signs of increased cavity and normal repolarization.

With a suspicion of endocarditis, echocardiography was performed in the emergency department showing a 2 x 3 cm cardiac tumor on the right ventricle, that seemed to be attached to the free wall causing dilatation of inferior vena cava and hepatic veins.

Under the clinical diagnosis of cardiac tumor and suspected endocarditis, patient was transferred to a third level center where a full study with cardiac MRI was performed. Surgical resection of the tumor was proceeded. Histological study diagnosed myxoma with acute inflammatory component.

The patient had a good recovery and was discharged home after receiving intravenous antibiotics for 6 weeks. A year and a half later, the patient had no recurrence.

CONCLUSIONS: This case illustrates the importance of careful clinical examination and early use of appropriate investigations, including imaging techniques as an echocardiography in the emergency department. Here echocardiography was crucial to refer the patient to a third level center where he received surgical treatment and final pathological diagnosis.

It is to take into account about making an echocardiography in the emergency department in any case of suspected endocarditis.

Po-069

Rez de Jardin poster area

RUPTURE OF HEPATIC AND SPLENIC ARTERY ANEURYSM ASSOCIATED WITH POLYARTERITIS NODOSA

Gu Hyun Kang (1)

1. *Emergency Medicine, Hally University Kangnam sacred heart hospital, Seoul, Korea, (South) Republic of*

Corresponding author: drkang9@hanmail.net

Keywords: hepatic and splenic artery aneurysm, polyarteritis nodosa, shock

A 61-year-old male with history of hypertension presented with severe abdominal pain and syncope and admitted in emergency department. He complained epigastric pain,

anorexia and vomiting. Physical examination showed pale conjunctiva, abdominal tenderness. Blood pressures were 80/60. Pulse rates were 74/min. Oxygen saturation showed 70%. Central catheter was inserted via Rt. Internal jugular vein and central venous pressure was 0 cm H₂O. Bedside ultrasound showed large amount fluid collection in abdominal space, no pericardial effusion, collapsed IVC, hyperdynamic LV systolic function and two large aneurysms with intimal thickness

After fluid resuscitation, vital signs were stable. Abdominal CT was taken and showed hemoperitoneum, hepatic artery and splenic artery pseudo aneurysm extravasation. Consult to surgeon for emergency operation and Intervention radiologist for angiography intervention. Despite resuscitation and transfusion, vital signs were abruptly unstable. After 1hr admission, cardiac arrest was occurred. Circulations were occasionally recovered with resuscitation and transfusion. During the prepare for emergency operation, patient was expired.

After event. His son arrived and told the vessel disease. We called the previous hospital and know that he was diagnosed polyarteritis nodosa and multiple vessel aneurysms and recommended for intervention 3 months ago. But patient refused interventions.

Polyarteritis nodosa (PAN) is a rare but potentially life-threatening problem. Polyarteritis nodosa is vasculitis, which often involves small and medium sized visceral arteries. PAN is transmural vasculitis and associated with multifocal aneurysm and spontaneous rupture can result in life-threatening problem.

Rupture of hepatic and splenic artery aneurysm rupture is very rare. We describe a case of Rupture of hepatic and splenic artery aneurysm.

Po-070

Rez de Jardin poster area

DIFFERENTIAL DIAGNOSIS AND NON-INVASIVE MONITORING OF ACUTE DYSPNEA IN THE ED: A PILOT STUDY

Luca Carenzo (1), Roberta Marino (2), Francesco Moschella (2), Roberta Petrino (2), Aldo Tua (2)

1. *CRIMEDIM, University of Eastern Piedmont, Novara, Italy*

2. *Emergency department, S. Andrea Hospital, Vercelli, Italy*

Corresponding author: ropetrino@gmail.com

Keywords: Acute Cardiac Failure, non invasive hemodynamic monitoring, emergency ultrasound

Introduction

Dyspnea is one of the commonest presentations in the Emergency Department (ED). While it's relatively easy to diagnose an acute respiratory failure (ARF) through Blood Gas Analysis (BGA), it's imperative an early differential between cardiogenic dyspnea (Acute Cardiac Failure, ACF and Acute Cardiogenic Pulmonary Edema, ACPE) and dyspnea from respiratory causes (Pneumonia, Asthma, Chronic Obstructive Pulmonary Disease – COPD-

exacerbation, and others) since therapy, prognosis and mortality widely depend on the rapid recognition of the underlying cause of ARF.

Despite continuous attempts to find reliable biomarkers for diagnosing ACPE(1), unfortunately this diagnosis is still widely clinical and most of the times confirmation of this diagnosis is "ex adiuvantibus", observing the response to the administered therapy.

Luckily, a number of non-invasive procedures have become available during the last years, helping ED doctors in the diagnostic process as well as in monitoring patients' response to therapy: thoracic US (2,3), Inferior Vena Cava (IVC) and its collapsibility US(4) and Non Invasive Cardiac Output Monitoring (NICOM®)(5) can all be used to study these patients.

Objectives

To investigate the diagnostic sensibility and specificity of NICOM®, IVC and thoracic US, alone and in combination, in patients with acute dyspnea in the emergency setting, as well as their usefulness in monitoring these patients.

Materials and Methods

We conducted a pilot study on 20 patients with acute dyspnea and ARF (P/F <250 or SpO2 <90%), who were treated according to common therapeutic protocols for their supposed clinical diagnosis, through appropriate drugs and/or Non-Invasive Ventilation (NIV).

At T0, 3 and 6 hours from admission, along with classical clinical monitoring (diuresis, thoracic objective exam, vitals), we performed: NICOM® monitoring, thoracic US, BGA and IVC measurements and collapse index (CCI).

Results

Our data showed sensible reduction of Total Fluid Content (TFC) and its time variations (TFCd) as well as of Total Peripheric Resistance (TPR) and Total Peripheric Resistance Index (TPRI), reflecting intrathoracic water, in patients with ACF clinically responding to treatment. Those patients also had a sensible improvement in the CCI. The reduction in TFC correlates with reduction in Thoracic US comet score ($r=0,6$, $p<0,05$) and, though still without statistical significativity, with P/F improvement.

We found no sensible improving of CO or CI neither in patients with acute cardiac failure (ACF) nor in respiratory patients in the first 6 hours of treatment.

Discussion

Our data suggest that further studies with adequate numbers could lead to define and validate TFC and TPR normal values, which could be very useful, particularly when combined with thoracic US, in quick, bedside differential diagnosis between cardiac and respiratory acute dyspnea. Also it would be interesting to define and validate TPRI variations and TFCd to target in monitoring effectiveness of therapy in ACF patients.

In respiratory patients all these tools seemed less useful, and including those patients in our database probably weakened the results, as in ACF subgroup of patients the results had better statistical significativity.

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Po-071

Rez de Jardin poster area

GETTING TO THE HEART OF THE MATTER IS POINT-OF-CARE TRIPLE CARDIAC MARKER TESTING RELIABLE ENOUGH TO EXCLUDE ACUTE CORONARY SYNDROMES?

Sreejib Das (1), Ratna Merugumalla (2)

1. Emergency Department, Colchester General Hospital, Ipswich, United Kingdom

2. Emergency Department, Ipswich Hospital, Ipswich, United Kingdom

Corresponding author: sreejibdas@hotmail.com

Keywords: Point of care testing, cardiac markers, Chest pain

Background

Each year 700,000 people attend emergency departments (EDs) in England and Wales with chest pain. The majority of these patients are admitted for observation and a laboratory troponin assay 12 hours from time of symptom onset. Ultimately, 75-85% of patients evaluated for chest pain do not have a diagnosis of acute coronary syndrome (ACS). Despite best efforts, 2-5% of patients evaluated for an ACS are erroneously sent home from the ED resulting in avoidable adverse cardiac events.

Point-of-care (PoC) testing with triple cardiac markers (TCM) has the potential to assist clinicians in defining rapid care pathways to safely discharge low risk patients with minimal adverse event rate. PoC assays for cardiac markers – myoglobin, creatine kinase-MB (CK-MB), and cardiac troponins I (cTnI) and T (cTnT) are commercially available for clinical use.

Aim

To ascertain whether point-of-care triple cardiac markers can be used to safely discharge low risk patients evaluated for suspected acute coronary syndromes.

Method

We conducted a prospective pilot study using PoC TCM testing on patients with low risk for an ACS using a flow chart.

24 patients were selected in a two week period between 14 and 28 February 2013. All patients underwent PoC TCM panel (index test) at 0 and 90 minutes and a 0 and 12-hour cTnI assay (reference standard).

Results

22 patients (92%) had a normal PoC TCM which corresponded to normal 12-hour laboratory cTnI levels. All patients were discharged with a follow up in the Rapid Assessment Clinic. No adverse cardiac events were recorded. 2 patient (8%) had both PoC TCM and cTnI positive despite being stratified as low risk. One patient was diagnosed as having myo-pericarditis and the other had NSTEMI and was admitted to the coronary care unit for further management.

Conclusion

Our pilot study on use of PoC TCM at 0 and 90 minutes in low risk ACS patients seems to indicate that PoC testing correlates well to laboratory 12 hour cTnI testing.

Similar large studies have shown 2-5 % adverse cardiac event rate. PoC TCM testing has the potential to allow early discharge of patients evaluated for ACS and thereby decrease hospital resource utilisation. Further validation using a large prospective cohort of patients is required.

Po-072

Rez de Jardin poster area

RISK OF EMERGENT CORONARY HEART DISEASE AND INITIATION OF STATIN THERAPY IN PRIMARY PREVENTION

Ari Palomäki (1), Timo Muhonen (2)

1. Emergency department, Kanta-Häme Central Hospital, Hämeenlinna, Finland

2. Amgen at Finland, Amgen AB, Espoo, Finland

Corresponding author: veli-pekka.rautava@khshp.fi

Keywords: Coronary heart disease, Emergency, Statin therapy

Introduction: Although the evidence for effective statin therapy is widely accepted (1), not very much is known about the reality of statin therapy in relation to the risk of emergent coronary heart disease (CHD).

Methods: The aim of our study was to analyse indications and initial doses of statin therapy in primary prevention. These findings were correlated to the concentration of LDL-cholesterol and the risk of acute coronary events.

This study is a part of a national, multicenter cross-sectional survey of patients started on cholesterol-lowering statin therapy in Finland, the Finnish Statin Survey. The primary prevention group consisted of together 647 subjects (men/women: 312/335) from 35 hospitals and 24 general practice clinics operating in different parts of the country. Patients with ongoing statin treatment were excluded.

Lipid values were analysed in local laboratories and the de-identified, coded and encrypted data were sent for central statistical analysis. For the patients on primary prevention, a 10-year risk of emergent CHD was estimated using the PROCAM scoring scheme for calculating the risk of acute coronary events. (2)

Results: The average lipid values (SD) before the initiation of statin therapy were as follows: total cholesterol 6.8 (0.9),

HDL-cholesterol 1.4 (0.4), LDL-cholesterol 4.5 (0.8) and triglycerides 1.8 (1.1) mmol/l.

The following results were found:

1. In primary prevention, 40% of patients received statin therapy without an established indication for it.
2. The mean dose of statin was too low, i.e. 12% under the minimum dose used in most statin trials.
3. The initial statin dose did not correlate with the baseline LDL-cholesterol concentration ($r^2=0.003$), nor the age-corrected PROCAM Score for coronary emergencies ($r^2=0.006$).

Conclusion: According to our results, there is an evident need for a more closely scrutinised assessment of patients' risk for CHD emergencies in primary prevention and for more aggressive statin treatment in patients with a proper indication.

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Po-073

Rez de Jardin poster area

ELECTROCARDIOGRAPHIC PATTERNS OF PATIENTS WITH ST-SEGMENT ELEVATION ACUTE CORONARY SYNDROME AND PROXIMAL CORONARY ARTERY AFFECTION

Iván Villar Mena, José Valero Roldan, Inmaculada López Leiva, Cristina Fernández-Figares, Rafael Infantes Ramos

Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain

Corresponding author: ivillarmena@hotmail.com

Keywords: acute coronary syndrome, coronary artery, electrocardiogram

Background:

It's known that ST-segment elevation Acute Coronary Syndrome in which the proximal occlusion of a major coronary arteries is responsible, has a higher risk and worse prognosis. The first judgment of diagnosis is based on the ECG and patient's symptoms. This information which is cheaper and easily accessible, is key proof for the diagnosis of ischemia and myocardial necrosis, and also gives information, with a acceptable sensitivity and specificity, about the location of the coronary affection through ECG patterns previously written in medical publications.

Objetives:

Describe the ECG patterns of ST-segment elevation Acute Coronary Syndrome patients, of which the proximal occlusion of a major coronary arteries is responsible, and comparing them with known medical publications.

Methods:

A retrospective study of a 55 patients with ST-segment elevation Acute Coronary Syndrome, which had a Coronaryangiography undertaken, evidence was found of damage to the Proximal Anterior Descending Coronary Artery, Proximal Circumflex Coronary Artery, and Proximal Right Coronary Artery. All of these patients were made a EKG when admitted in to our Coronary Unit area, that was stored in our archives.

Results:

31 patients with damage to Proximal Anterior Descending Coronary Artery, had:

- 1) A 81,8% of them had a ST-elevation in former area and ST-decline in lower área.
- 2) A 12,1% had tachycardia-ventricular fibrillation
- 3) A 3% had ST-elevation in lower area and elevation in V4R.
- 4) A 3% left bundle branch block.

19 patients with damage to the Proximal Right Coronary Artery:

- 1) A 89,5% had ST-elevation in the lower area and elevation in V4R
- 2) A 5,3% had left bundle branch block
- 3) A 5,3% had tachycardia-ventricular fibrillation

5 patients with damage to the Proximal Circumflex Coronary Artery:

- 1) A 100% showed tachycardia-ventricular fibrillation.

Conclusions:

- 1) Although in a small percentage, damage to the proximal coronary arteries its likely to have similar ECG patterns.
- 2) It's remarkable that damage to the proximal area of the Circumflex artery can make Tachycardia-ventricular fibrillation appear in EKG patterns.

Po-074

Rez de Jardin poster area

ST-SEGMENT ELEVATION ACUTE CORONARY SYNDROME IN WOMEN: WORSE PROGNOSIS?

Iván Villar Mena, José Valero Roldan, Rafael Infantes Ramos, Cristina Fernández-Fígares, Inmaculada López Leiva

Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain.

Corresponding author: ivillarmena@hotmail.com

Keywords: acute coronary syndrome, women, prognosis

Background

The WISE and CRUSADE studies has given important details towards is chemiche art disease knowledge in women. Women with high risk ST-segment elevation Acute Coronary Syndrome, are older and shown to frequently have diabetes and hypertension. They receive the adequate

treatment (Acetyl salicylic acid, LMW heparin, antiplatelet drug IIb-IIIa, ACE inhibitors and statins) less frequently and also less frequent diagnosis catheterization or coronary reperfusion procedures.

Methods and material:

50 men and 50 women admitted in to our Acute Coronary Unit Area were selected, during 2008,withhighrisk ST-segment elevation Acute Coronary Syndrome diagnosis (measured against the TIMI scale) collecting data against the previously mentioned variables.

Results:

The mean age in the male group was 63,96 and 70,72 in the female group. In the male group the distribution of the risk factor was: 74% smoking, 68% hypertension, 36% diabetes and 62% dyslipidemia). In the female group: 18% smoking, 80% HT, 54% DM and 50% DL. There were no differences in the use of Acetyl salicylic acid and LMW heparin, using antiplatelet drug IIb-IIIa in 32% and 24%, ACE inhibitors in the 82% y 70%, statins in 98% y 88%, respective of men and women.

Diagnosis catheterization was made in 78% men and 66% women, of which 56% of men and 36% of women were percutaneous coronary reperfusion. 18% of men and 28% of women complications were present.

Conclusions:

The women admitted due to high risk ST-segment elevation Acute Coronary Syndrome have an higher mean age, cardiovascular risk factors most frequently associated were HT and DM, have a higher chance of complication, choising in most cases a more conservative treatment than the male group.

Po-075

Rez de Jardin poster area

PERICARDITIS OR ST-SEGMENT ELEVATION ACUTE CORONARY SYNDROME

Iván Villar Mena (1), Esther Banderas Bravo (2), Ana Cabrera Calandria (2), Victoria Olea Jimenez (2), Javier Muñoz Bono (2)

1. Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain.

2. Intensive Care Unit, Hospital Regional Carlos Haya, Málaga, Spain.

Corresponding author: ivillarmena@hotmail.com

Keywords: pericarditis, acute coronary syndrome, electrocardiogram

Background:

Chest pain is a frequent symptom in our field. There are many illnesses that can present themselves in the same way although their diagnosis and treatment are very different. ST-segment elevation Acute Coronary Syndrome is one of the first diagnosis to identify and treat, and due to its prognosis and its specific treatment. Pericardiac illness accompanied or not by myocardial infraction could be a diagnosis diferencial difficult to evaluate.

Objetives:

To determine which are the clinical and ECG characteristics in patients that were diagnosed with ST-segment elevation Acute Coronary Syndrome and whose diagnosis were wrong.

Material and Methods:

The retrospective observational study where they analysed patients that were admitted with a diagnosis of ST-segment elevation Acute Coronary Syndrome into the acute cardiac unit of our centre, and were released diagnosed to have pericarditis or myopericarditis by the Cardiology Unit. The variables analysed were: age, cardiovascular risk factors and therapeutic management. The information shows + - DE and n(%) as a mean average. The statistic analysis was under taken through the Student's T test, to $p < 0.05$

Results and discussions:

45 patients were analysed with a mean average age of 43, 23 of them (51,11%) had a classic cardiovascular risk factor and 16 of them (35,55%) admitted to having an previous infectious-inflammation condition. Regarding the treatment, 21 of these patients (46,66%) received fibrinolytic treatment, and 4 of them (8.88%) had a hemodynamic study that had normal results.

Conclusions:

The average age of patients diagnosed with pericarditis was inferior to the average in ST-segment elevation Acute Coronary Syndrome. A detailed clinical history, based on the characteristics of chest pain and the patient's personal history of illnesses, together with a correct analysis of ECG is likely to reduced these errors.

Po-076

Rez de Jardin poster area

SCASTE: DIAGNOSTIC ERRORS

Iván Villar Mena (1), Ana Cabrera Calandria (2), Esther Banderas Bravo (2), Javier Muñoz Bono (2), Victoria Olea Jimenez (2)

1. Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain.

2. Intensive Care Unit, Hospital Regional Carlos Haya, Málaga, Spain.

Corresponding author: ivillarmena@hotmail.com

Keywords: acute coronary syndrome, electrocardiogram, errors

Background:

Chest pain is a frequent symptom in our field. There are many illnesses that can present themselves in the same way although their diagnosis and treatment are very different. ST-segment elevation Acute Coronary Syndrome is one of the first diagnosis to identify and treat, and due to its prognosis and its specific treatment. Pericardiac illness accompanied or not by myocardial infarction could be a diagnosis differential difficult to evaluate.

Objetives:

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Results and discussions:

45 patients were analysed with a mean average age of 43, 23 of them (51,11%) had a classic cardiovascular risk factor and 16 of them (35,55%) admitted to having an previous infectious-inflammation condition. Regarding the treatment, 21 of these patients (46,66%) received fibrinolytic treatment, and 4 of them (8.88%) had a hemodynamic study that had normal results. In 3 cases fibrinolysis complication were developed: A major bleeding and two minor bleeding.

Conclusions:

The average age of patients diagnosed with pericarditis was inferior to the average in ST-segment elevation Acute Coronary Syndrome. A detailed clinical history, based on the characteristics of chest pain and the patient's personal history of illnesses, together with a correct analysis of ECG is likely to reduced these errors.

Po-077

Rez de Jardin poster area

COMBINATION THERAPY IN ACUTE CORONARY SYNDROME WITH ELEVATED ST SEGMENT, IT'S SAFETY?

Iván Villar Mena (1), Victoria Olea Jimenez (2), Javier Muñoz Bono (2), Esther Banderas Bravo (2), Ana Cabrera Calandria (2), José Valero Roldan (1)

1. Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain

2. Intensive Care Unit, Hospital Regional Carlos Haya, Málaga, Spain

Corresponding author: ivillarmena@hotmail.com

Keywords: combination therapy, acute coronary syndrome, fibrinolysis

OBJECTIVE: To evaluate the safety of combination therapy in patients younger than 75 years, with SCASTE less than 12 hours of development and high-risk criteria. Assessment of safety profile of combination therapy with fibrinolysis compared to other pharmacological reperfusion therapy.

METHODS: Non-randomized open clinical trial with patients admitted to Emergency and Intensive Care Unit of Carlos Haya Hospital, from January 2007 until September 2012, with the diagnosis of high risk, acute coronary

syndrome with ST elevation. We considered as high risk by: risk score TIMI>4, the presence of an electrocardiogram to suggest involvement of proximal coronary artery, new left branch block or primary FV. Complications recorded were: brain vascular accident, mayor bleeding and thrombocytopenia. Qualitative variables are expressed as absolute value and percentage, whereas quantitative variables are expressed as mean ± standard deviation. Comparisons between groups were made with the t test for continuous variables and the X² or Fisher's exact for categorical variables when necessary. Alpha Error has been considered a maximum of 5%.

RESULTS: A total of 1276 patients were admitted with Coronary Syndrome with ST elevation during the time period of the study, which was held to 920 of them fibrinolysis. Of these 920 met criteria and combination therapy was performed in 136 patients. Combination therapy (rt-PA half-dose + abciximab + heparin at very low doses and facilitated percutaneous intervention within 24 hours). When comparing this group with that of standard therapy, do not find significant differences in demographic variables of age, sex and cardiovascular risk factors (except dyslipidemia).

We found more thrombocytopenia in the combination therapy group as an intrinsic effect or abciximab which is used in combination therapy and no in standard therapy.

We found no differences in mortality for cardiovascular causes within UCI 10.6% in the fibrinolysis group of standard compared to 6.6% in the combined therapy group (p=0.15).

CONCLUSION: Combination therapy showed as safety as standard fibrinolysis in our serie, with no major adverse outcomes.

Po-078

Rez de Jardin poster area

PATIENTS WITH ACUTE THORACIC AORTIC DISSECTION: A ONE YEAR CASE SERIES OF PATIENTS PRESENTING TO AN ED

David Salo (1), Fred Fiessler (1), Kimberly Baldino (1), Hetal Patel (1)

1. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: ds1122@aol.com

Keywords: Acute thoracic dissection, Case series, Emergency department

Introduction: Thoracic dissection is an often fatal disease. While physicians must have a high index of suspicion for this disorder up to 38% of patients with dissection do not have it suspected on evaluation and up to 28% are found on autopsy not to have been correctly diagnosed. While rare thoracic aortic dissection is the most common lethal disease affecting the aorta and more common than AAA rupture. Mortality can be as high as 1-2% per hour, making quick and accurate diagnosis important. This is made more

complex by the various presentations of thoracic dissection, based on area of dissection and includes: severe chest pain, back pain, neck and jaw pain, abdominal and back pain, neurologic complications (lightheaded, diaphoresis, nausea/vomiting, stroke, paraplegia) and fever of unknown origin. Patients may have acute aortic regurgitation, pulse differences, abnormal EKG's including heart block or acute MI, and tamponade. Hoarseness, hemoptysis, pleural effusions and hematemesis, loss of renal perfusion and extremity ischemia are also possible. **Objectives:** To review all patient who presented or were referred to our ED with acute thoracic dissection for a one year period. **Methods:** Design: Retrospective, case-controlled study; IRB approved. Setting: Community ED with ED Residency and 85,000 visits/year. **Participants:** Patients > 18 yrs diagnosed with acute thoracic aortic dissection (ED ICD9 code) from 4/24/2012-4/23/2013. **Protocol:** ED records were reviewed for any patient carrying a diagnosis of thoracic or dissection for thoracic dissection. **Exclusion,** patients without thoracic dissections such as thoracic trauma, thoracic compression fractures, dissections not involving the thoracic aorta, patients who returned to ED within the year for pain related to dissection. Data was extracted onto a standardized form. Descriptive statistics and appropriate statistical tests were applied (Significant p value <0.05).

Results: 144 patients had a diagnosis of thoracic or dissection. 123 were excluded by predefined criteria. Of the 21 patients reviewed, 1 returned to ED for persistent symptoms and 2 were admitted and had a negative workup for dissection while vascular surgery disagreed with the diagnosis in 1 patient. 1 patient had a perforated diverticulitis with a new incidental type B dissection and 1 patient had a PE with a stable type B dissection. Of the remaining 15 patients the median age was 76 (IQR of 58-82), with the youngest being a 29 yo female and oldest a 95 yo female. 9 (64.3%) were male. Median time to present from symptoms was 1 day (IQR of 1-3.3). 4 patients described sharp pain, 1 spasms, 1 dull and 3 were not recorded while 1 was unresponsive. 2 patients described pain as severe. 3 patients had CP, 4 patients had back pain with an additional 3 with radiation to the back (7 total). 2 patients reported epigastric pain and 3 had either throat/neck pain. 1 each had bilateral flank or lower rib pain. 3 patients had syncope or near syncope and 2 had pleuritic pain. 12 patients (80%) had a history of HTN, 4 had coronary artery disease, and 2 had previous hx of AAA while 1 had previous thoracic aneurysm repair with a new dissection. Activity at onset included snow shoveling (1), drinking fluid (1), sleeping (2), sitting (1), intercourse (1) and bending over (1). The median pulse was 70 (95% CI 57-108) while median SBP was 137 (95% CI 120 to 183). The median hg in gm/dl was 13.2 (95% CI 11.3 to 16.2).

There was no statistical difference between type of dissection (A vs B) with regards to age (median difference -6.0; 95% CI -35 to 13) (p<0.57), sex (p<0.87) or initial SBP (median difference -12; 95% CI -54 to 46) (p<0.62). **Conclusion:** Thoracic dissections present with a variety of symptoms and physician must have a high index of suspicion for this disorder. **Limitations:** Small sample size, retrospective study.

Po-079*Rez de Jardin poster area***INTEGRATED HEALTH CENTERS. INITIAL APPROACH TO CHEST PAIN ACCORDING TO SELF-DEVELOPED PROTOCOLS. LAST UPDATED GUIDELINES**

Luis Manclus Montoya (1), Sergio Navarro Gutierrez (1), Almudena Lluch Sastriques (2), Oscar Martinez Ferris (1), Silvia Castells Juan (1), Maria Roig Dura (1)

1. Emergency Department, Hospital Universitario de La Ribera, Alzira, Valencia, Spain

2. Emergency Department, Hospital Universitario La Fe, Valencia, Spain

Corresponding author: sergionavarrog@hotmail.com

Keywords: chest pain, protocol, emergency

Problems associated to overcrowded emergency departments (ED) continue to be a major health problem in Spain. Health authorities have developed a prior step to the ED with the creation of Integrated Health Centers (IHC). These centers coordinate the Primary Care and the daily activity of family physicians with other specialist working as an outpatient facility as well. In addition to this, the emergency assistance is warranted by family physicians with special skills on emergency and acute cardiologic care. Even though IHC are not considered as a hospital facility, our emergency physicians have basic laboratory as well as simple radiology support being a key part of the emergency health system.

Acute heart pathologies are mainly first treated by our IHC emergency physicians. An important amount of patients complain about cardiorespiratory problems and improving coronary diseases treatment is one of our goals considering that we do not have cardiology nor intensive care support in these centres and patients with acute heart diseases should be transferred to our hospital, miles away from these IHC.

We present here how patients complaining of chest pain are initially assessed and treated according to self-developed protocols after the last updated guidelines and the recent implementation of the Acute Myocardial Infarction early strategy treatment protocol in our hospital area.

Po-080*Rez de Jardin poster area***PROGNOSTIC VALUE OF LEFT ATRIAL DYSFUNCTION IN AN ACUTE CARE SETTING: EVALUATION WITH THREE-DIMENSIONAL ECHOCARDIOGRAPHY**

Chiara Donnini (1), Eleonora De Villa (1), Stella Squarciotta (1), Aurelia Guzzo (1), Francesca Innocenti (1), Riccardo Pini (1)

1. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

Corresponding author: innocentif@AOU-careggi.toscana.it

Keywords: Left Atrial, Three-dimensional echocardiography, Dysfunction

Introduction: Left atrium (LA) enlargement is an independent predictor of adverse cardiovascular (CV) events in presence of a variety of cardiac disorders like atrial fibrillation (AF), congestive heart failure (CHF), coronary artery disease and cardiomyopathies.

Methods: In 382 subjects admitted to the Emergency Department (ED), we performed an echocardiogram for standard clinical work-up; 250 patients were admitted in an ED-HDU, a setting with a sub-intensive level of care. With a semi-automated border detection program, we evaluated LA volumes, always indexed by body surface area: maximal (Volmaxi), minimal (Volmini) and LA emptying fraction (LA EF), from real-time three-dimensional (RT-3D) images. A follow-up was performed in order to evaluate the occurrence of new cardiac events (death, both cardiac and non-cardiac, non-fatal STEMI, new hospital admission for CHF and AF).

Results: In 62 patients (16%) we were unable to derive quantitative LA volume measurements from RT 3D images: patients with bad image quality demonstrated a higher respiratory rate (20 ± 7 r/min, range 11-45, vs 18 ± 5 r/min, range 12-40, $p < 0.005$). We compared atrial volumes and function evaluated by two-dimensional (2D) and RT-3D echocardiography: the correlation between measures obtained from 2D and 3D evaluation was very good (LA Volmaxi; $r = 0.896$, $p < 0.001$; Volmini: $r = 0.906$, $p < 0.001$; LA EF: $r = 0.749$, $p < 0.001$).

Among 77 normal subjects (normotensive, non diabetic, in sinus rhythm (SR), with normal left ventricular (LV) systolic function), and without any significant cardiac valvular disease) people aged ≥ 65 years demonstrated comparable LA dimensions, respect to younger subjects (LA Volmaxi 25 ± 11 vs 20 ± 7 ml/m², Volmini 11 ± 7 vs 8 ± 5 ml/m², $p = NS$).

We considered separately patients in SR ($n = 237$, excluding 97 patients with AF and 48 without 3D quantitative evaluation), that were divided in three subgroups, respectively with normal LV function ($n = 178$), with asymptomatic LV systolic dysfunction ($n = 40$) and with symptoms of CHF ($n = 19$). Subjects with normal LV function showed significantly lower LA dimensions respect to both the other subgroups (Volmaxi: 23 ± 11 in patients with normal LV ejection fraction (EjF), 29 ± 10 in asymptomatic LV systolic dysfunction, 33 ± 12 ml/m² in CHF, $p < 0.05$; Volmini: 11 ± 8 in subjects with normal LVEjF, 17 ± 8 in asymptomatic LV systolic dysfunction; 20 ± 9 ml/m² in CHF, $p < 0.05$) with a significantly better LA global EF (55 ± 13 in subjects with normal LVEjF vs $43 \pm 17\%$ in asymptomatic LV systolic dysfunction; 55 ± 13 vs $39 \pm 11\%$ in patients with CHF, $p < 0.05$). In order to evaluate AF consequences on LA dimensions and function, we evaluated only patients with preserved LVEjF: we identified 218 subjects, 180 in SR and 38 in AF. Patients in AF showed significantly dilated LA (Volmaxi 37 ± 22 vs 24 ± 11 ml/m², $p = 0.002$; Volmini 27 ± 20 vs 11 ± 8

ml/m², p<0.001), with reduced LA global E_JF (31±18 vs 55±13%, p<0.001).

During follow-up we could contact 217 patients (57%). Twenty-six patients died, six for CV disease; 33 patients reported a new hospital admission for CV disease.

LA dimensions were significantly higher in dead patients (Volmaxi: 33±9 vs 25±9 ml/m², p<0.005, Volmini: 23±9 vs 14±11 ml/m², p=0.001), in patients with a new hospital admission for CV disease (Volmaxi: 34±13 vs 23±10 ml/m², p<0.0001, Volmini: 22±13 vs 12±9 ml/m², p<0.0001) and in patients with a new AF episode (Volmaxi: 40±12 vs 24±11 ml/m², p<0.005, Volmini: 27±11 vs 13±10 ml/m², p<0.0001). In a regression analysis, adjusted for age and LV E_JF, a reduced LA EF maintained an independent prognostic value for all the considered end-points: all cause mortality (RR 0.963, 95%CI 0.928-0.999, p=0.042), new hospital admission for CV reason (RR 0.949, 95%CI 0.924-0.973, p<0.0001) and new AF episode (RR 0.947, 95%CI 0.915-0.980, p=0.002). Increased LA volumes were independent prognostic determinants for new hospital admission for CV disease (Volmaxi: RR 1.074, 95%CI 1.035-1.115, p<0.0001; LA Volmini: RR 1.088, 95%CI 1.043-1.135, p<0.0001) and new AF episodes (Volmaxi: RR 1.079, 95%CI 1.033-1.280, p=0.001; LA Volmini: RR 1.074, 95%CI 1.030-1.230, p=0.001).

Conclusion: RT-3D evaluation of LA volumes and function is highly feasible in a non selected series of patients admitted in an acute care setting. From a prognostic point of view, presence of LA enlargement and dysfunction was associated with worse outcome both in terms of morbidity and mortality.

Po-081

Rez de Jardin poster area

EVALUATION OF PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT WITH SPONTANEOUS CHEST PAIN: STRESS-ECHO PROGNOSTIC VALUE

Chiara Donnini (1), Prospero Cerabona (2), Delia Lazzeretti (3), Sofia Bigiarini (1), Francesca Innocenti (1), Riccardo Pini (1)

1. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

2. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

3. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

Corresponding author: innocentif@AOU-careggi.toscana.it

Keywords: stress echocardiography, prognosis, spontaneous chest pain

INTRODUCTION: Diagnostic and prognostic assessment of patients admitted to Emergency Department (ED) with spontaneous chest pain represents a challenging task for the Emergency Physician. In this clinical setting stress-echo (SE) prognostic value needs further evaluation.

METHODS: Between 2008, June and 2012, July, 777 subjects with an episode of spontaneous chest pain, non diagnostic EKG and negative cardiac necrosis marker dosage after at least 12 hours from the index event, were evaluated with exercise stress-echo (ESE); in presence of reported physical deconditioning, coexisting diseases precluding the performance of maximal effort and LBBB on the EKG dobutamine stress-echo (DSE) was performed. Patients with inducible ischemia (li) were asked to undergo a coronary angiography; patients with a negative test for li were discharged. ES was considered normal in presence of a normal segmental kinesis both at baseline and at peak stress. In December 2012, all patients were contacted by telephone to verify vital status and occurrence of new hard cardiac events.

RESULTS: During follow-up (FU, mean length 854 □ 416 days), it was possible to contact 626 patients; 18 patients died for non-cardiac disease and they were excluded from this analysis. One-hundred forty-seven patients showed ES+ (24%), 417 ES- (69%) and 44 patients a non-diagnostic test (7%). Among ES+ patients, 112 (76%) underwent a coronary angiography, that evidenced a significant coronary artery disease (CAD) in 87 cases; 35 patients underwent a percutaneous coronary revascularization.

During the follow-up we observed 21 hard cardiac events: 5 fatal acute coronary syndromes (ACS), 14 non fatal ACS and 2 malignant ventricular arrhythmias. Patients with a new cardiac event were older (66 □12 vs 74 □0 years

and more frequently affected by a known CAD (55 vs 22%, p<0.0001) compared to subjects with a good prognosis. Diabetes, hypertension, dyslipidemia (respectively 15 vs 16%, 75 vs 62% and 45 vs 40%, all p=NS) showed a similar prevalence. Peripheral arterial disease was more frequent in patients presenting hard cardiac events (25 vs 6%, p=0.001). Patients with a bad prognosis presented an higher rate of CAD (33% vs 12%, p=0.005) and they more frequently underwent a percutaneous coronary revascularization (28 vs 5%, p<0.0001).

At the baseline echocardiographic evaluation, patients with hard cardiac events showed left ventricular (LV) dilation (LV end-diastolic volume index 64±21 vs 50±16 ml/m², p=0.017; LV end-systolic volume index 35±19 vs 21±12 ml/m², p=0.012) and a worst global systolic function both in terms of LV ejection fraction (EF) (48±16 vs 60±12%, p=0.010) and segmental kinesis (Wall Motion Score Index, WMSI, 1.7±0.7 vs 1.2±0.4, p=0.002). Hard cardiac events incidence was 7% in patients with ES+ (10/147) and 2,4% in patients with ES- (10/417, p=0.019). ES showed li in 10/21 (48%) patients with and 137/587 (23%, p=0.017) patients without hard cardiac events; peak WMSI was significantly higher in presence of a bad prognosis (1.9±0.6 vs 1.3±0.4, p<0.0001).

We identified 368 patients with a normal ES; during FU, 3 of them reported ACS occurrence, complicated in one case by death. Hard cardiac events incidence was significantly lower in patients with normal ES compared with those with an abnormal test (0.8% vs 8%, p<0.0001).

Among all the parameters significantly different between patients with good and bad prognosis (presence of vascular disease and CAD, LV EF, WMSI baseline and at peak, the presence of li, CAD at one month and a normal ES), a

multivariate analysis showed that the only independent predictor of new cardiovascular events was an higher value of peak WMSI (RR: 9.700; 95% CI: 3.649-25.782; $p < 0.0001$), that indicated a larger asynergic area at peak ES. We also divided the whole study population in three subgroups, according to peak WMSI: normal peak WMSI ($=1$), mildly abnormal peak WMSI (1.1-1.7) and markedly abnormal WMSI (>1.7). Event-free survival decreased significantly with increasing peak WMSI values (respectively 99, 95 and 87%, $p=0.003$ between the first and the second group, $p < 0.0001$ between the first and the third group, $p=0.030$ between the second and the third group).

CONCLUSION: In patients admitted to the ED with spontaneous chest pain, SE demonstrated a very good ability to identify patients at greater risk of an adverse prognosis; especially patients with abnormal SE results, in terms of an increased peak WMSI value, were more likely to have a reduced event-free survival.

Po-082

Rez de Jardin poster area

STRESS ECHOCARDIOGRAPHY IN THE EMERGENCY DEPARTMENT: PROGNOSTIC VALUE ACCORDING TO THE EMPLOYED STRESSOR

Chiara Donnini (1), Prospero Cerabona (2), Delia Lazeretti (3), Sofia Bigiarini (1), Francesca Innocenti (1), Riccardo Pini (1)

1. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

2. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

3. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

Corresponding author: innocentif@AOU-careggi.toscana.it

Keywords: stress echocardiography, dobutamine and physical exercise, prognosis

INTRODUCTION: Stress echocardiography (SE) is frequently employed in the Emergency Department (ED) to evaluate patients presenting with spontaneous chest pain; it has never been evaluated in this clinical setting whether a given test result has the same prognostic value whatever the employed stressor.

METHODS: Between 2008, June and 2012, July, 777 subjects with an episode of spontaneous chest pain, non diagnostic EKG and negative cardiac necrosis marker dosage after at least 12 hours from the index event, were evaluated with exercise stress-echo (ESE); in presence of reported physical deconditioning, coexisting diseases precluding the performance of maximal effort and LBBB on the EKG a dobutamine stress-echo (DSE) was performed. Patients with inducible ischemia (li) were asked to undergo a coronary angiography; patients with a negative test for li were discharged. ES was considered normal in presence of a normal segmental kinesis both at baseline and at peak stress. In December 2012, all patients were contacted by

telephone to verify vital status and occurrence of new hard cardiac events.

RESULTS: During the follow-up (FU, mean length 854 days), it was possible to contact 626 patients. ESE was performed in 365 subjects and it showed li in 58 patients, it was negative in 295 and non-diagnostic in 12. DSE was performed in 261 subjects and it showed li in 100 patients, it was negative in 133 patients and non-diagnostic in 28. Patients who underwent DSE were older (74 ± 10 vs 61 ± 12 years, $p < 0.0001$) and with an higher hypertension and diabetes prevalence (73 vs 55% and 22 vs 10%, $p < 0.0001$) compared with patients evaluated with ESE. We did not find significant differences in left ventricular (LV) dimension (LV end-diastolic volume index 50 ± 14 vs 52 ± 19 ml/m², $p=NS$) among patients evaluated with different stressors; patients who underwent DSE showed a worst LV global systolic function, both in terms of LV ejection fraction (EF), ($55 \pm 14\%$ vs $52 \pm 19\%$, $p < 0.0001$) and segmental kinesis (wall motion score index, WMSI, at baseline: 1.30 ± 0.48 vs 1.15 ± 0.48 , $p < 0.0001$). Coronary heart disease prevalence was slightly higher in patients who underwent DSE compared with patients evaluated with ESE, but not statistically significant (30 vs 23%, $p=0.055$)

Patients evaluated with ESE showed more frequently a normal ES (248/365 ESE and 120/261 DSE, 68 vs 47%, $p < 0.0001$) and less frequently critical coronary stenoses (10 vs 18%, $p=0.005$), compared with those evaluated with DSE. A similar number of patients underwent a percutaneous coronary revascularization (6% for both stressor).

During the FU we observed 21 new hard cardiac events: 5 fatal acute coronary syndromes (ACS), 14 non fatal ACS and 2 malignant ventricular arrhythmias. Respectively 15 (6%) patients evaluated with DSE and 6 (2%, $p=0.006$) evaluated with ESE reported a hard cardiac event. Among patients evaluated with ESE, all events occurred in patients with an abnormal test, both for rest wall motion asynergy or li; among patients evaluated with DSE, 3 subjects with a normal test reported a hard cardiac event, with an incidence of 2.5% vs 0% among ESE patients ($p=0.03$).

CONCLUSION: Patients evaluated with DSE represent an older and more "ill" population compared with subjects evaluated with ESE: in the first ones, we observed a significantly higher proportion of abnormal tests and an increased hard cardiac events incidence, both in patients with normal and abnormal test.

Po-083

Rez de Jardin poster area

TWELVE MONTHS CLINICAL FOLLOW-UP OF PATIENTS REFERRED TO CATHETERIZATION LABORATORY BY THE DEPARTMENT OF EMERGENCY FOR AORTIC BALLOON VALVULOPLASTY

Nathalie Peragallo (1), Matthieu Biais (2), Benjamin Seguy (1), Agnaly Desplantes (1), Catherine Pradeau (3), Eric Tentillier (3), Frederic Casassus (1), Warren Chasseriau (1), Pierre Coste (1), Michel Thicoipe (3), Lionel Leroux (1)

1. Cardiology, CHU de Bordeaux, Bordeaux, France
2. Emergency, CHU de Bordeaux, Bordeaux, France
3. SAMU, CHU de Bordeaux, Bordeaux, France

Corresponding author: lionel.leroux@chu-bordeaux.fr

Keywords: aortic balloon valvuloplasty, aortic stenosis, elderly

Background

Aortic stenosis is a very common valvulopathy in elderly. Number of patients admitted at the emergency department for a non-cardiac disease has a systolic murmur or a known aortic stenosis. In presence of symptoms, these patients have to be referred to conventional aortic surgery replacement (SAVR). But a lot of them are at high-risk or contraindicated for SAVR. For these patients, transcatheter aortic valve implantation (TAVI) is now recognized as the standard treatment. Balloon valvuloplasty in "bridge to TAVI" has recently emerged as an efficient alternative for patients temporarily contraindicated for TAVI because of frailty or infectious disease for example. In parallel, in the context of emergency, some no-way situations can be met due to the aortic stenosis (AS). Indeed, AS can contraindicate general anesthesia or create a vicious circle during severe sepsis. In such conditions, balloon aortic valvuloplasty (BAV) can theoretically rapidly be proposed in the aim to stabilize the situation. But, there is currently no data validating this option. In the goal to assess the interest of BAV in the field of non-cardiac emergency, we propose a follow-up of the patients referred to this procedure by the department of emergency for non-cardiac diseases. We will compare this cohort to the outcome of the patients treated for bridge to TAVI or in cardiac emergency context.

Method

Since July 2011, all patients who underwent BAV in our catheterization laboratory are registered. Procedure is performed according to standard techniques via a 12 French femoral retrograde access. After heparinization, we cross the aortic stenosis and record the transvalvular gradient. A temporary right ventricle pacing lead is introduced via a femoral route for rapid pacing (180bpm) during balloon inflation. A stiff guide wire is inserted in the left ventricle and an aortic balloon is inflated few seconds to dilate the valve. Transvalvular pressure gradient is measured again. Success is defined by a reduction of 50% of the mean trans-aortic gradient. Arterial puncture sites are closed by using closure devices. Clinical follow-up is assessed by phone contact at 12 months.

Results

Between July 2011 and July 2012, a total of 44 patients have been treated. Twenty five (56.8%) were male and the mean age was 83 y. Among them, 13 were referred by emergency department for non-cardiac reasons, 24 were treated for "bridge to TAVI" and the 7 others for cardiogenic shock or acute heart failure with or without associated acute coronary syndrome. In the non-cardiac group, 11 are male (84.6%) and the mean age is at 79 y. Reasons justifying the procedure were: need for digestive or urologic surgery in 5 cases, orthopedic surgery in 4 cases, severe sepsis for 2 patients, meningioma in 1 patient, and acute liver failure in 1. All had severe symptomatic calcified aortic stenosis confirmed by transthoracic

echocardiography. The procedure was successful for 9 patients (69.23%). One patient experienced severe post-dilation aortic regurgitation. In this case, we decided to perform emergency TAVI during the same procedure, with a good result. At 12 months follow-up, 10 were alive (mortality rate at 23%) and finally 4 others underwent TAVI few months after BAV and were still alive at one year. Notably, the patient implanted in rescue died after orthopedic surgery.

Comparatively, in the group of bridge to TAVI, 12 of the 24 patients were male (50%) and the mean age was older (85 years). Success rate was 83.3% but one patient died during the procedure. At one year, mortality rate is calculated at 45% and finally, only 6 (25%) underwent TAVI during this period. All of them were alive at follow-up.

Furthermore, in the group of the 7 patients treated in emergency for cardiac reasons, only 2 were male but the mean age was 88 y. The procedure was successful in 5 cases (71.4%). Only 3 of them were alive at follow-up (mortality rate: 57.4%) and none of them underwent transcatheter aortic valve implantation.

Conclusion

Balloon aortic valvuloplasty can be proposed in no-way situations for patients needing rapid non-cardiac treatment. These patients seem to be younger than in the other groups. The procedure is safe and effective and 12 months mortality rate is lower than those found in the other groups. These data have to be confirmed by further studies.

Po-084

Rez de Jardin poster area

RELEVANCE OF BLOOD MYOGLOBIN LEVELS ASSESSMENT IN THE EMERGENCY DEPARTMENT. PILOT STUDY.

Gabriela Gagu (1), Adela Golea (1), Ioana Nemes (1)

1. Department of Emergency Medicine, Cluj County Emergency University Hospital, Cluj-Napoca, Romania

Corresponding author: ioana.vlas@yahoo.com

Keywords: Myoglobin, Acute coronary syndrome, Miocardial infarction biomarkers

Introduction: Ischemic heart disease is one of the leading causes of death in adults, and up to 10% of all presentations in emergency department worldwide are patients with a symptomatology suggestive for acute coronary syndrome. Rapid assessment and access to treatment for these patients is key for improving outcomes. Recent research suggests that one way of providing such a rapid assessment is point-of-care determination of various cardiac markers. Out of these markers myoglobin is the one that has the earliest increase in blood levels.

Aim: To investigate whether myoglobin assessment in the emergency department can help reach a positive diagnosis of acute coronary syndrome or exclude an acute myocardial infarction.

Material and Method: 16 patients addressing at the Emergency Room (ER) of the Cluj County Emergency University Hospital for a symptomatology suggestive of an acute coronary syndrome were included. Mean age of persons included was 59.4 ± 3.7 years. A small percent of 25% persons included in study were females. Myoglobin (Myo) and creatine kinase MB (CK-MB) were determined at a median time of 3 hours after the onset of the symptomatology and 25 minutes after presentation to the ER. Troponin assessments were not available in the ER. Final diagnosis of acute coronary syndrome was made by consensus between an emergency medicine specialist and a cardiology specialist.

Results: Out of the 16 patients included, 8 (50%) were diagnosed with an acute coronary syndrome in the end. Out of these 3 (37%) had an over the limit value of Myo compared to 66% in the case of CK-MB. However, none of the patients without diagnosed of acute coronary syndrome had an over the limit value for Myo compared with 33% in the case of CK-MB.

Conclusions: 1. Myoglobin seems to be a better tool for rapid exclusion of an acute coronary syndrome than creatine kinase MB, in emergency rooms, very early after symptoms onset. 2. Our data is in line with other studies, but we need a large number of patients to get a guide approved ruling the exclusion of an acute myocardial infarction in the first 3 hours of chest pain, especially in case of remote area and small hospital.

Po-085

Rez de Jardin poster area

REVIEW CORONARY SYNDROME IN REGIONAL HOSPITAL DE LA RIBERA DURING 2012

Nuria Capilla Bolinches (1), Pedro Garcia Bermejo (2), Luis Manclus (2), Jose Minguez Platero (2), Juan Carlos Montalva Barra (3), Soria Millan Soria (4)

1. PRIMARY CARE, CS CARCAIXENT, CARCAIXENT, Spain
2. URGENCES SERVICE, HOSPITAL DE LA RIBERA, ALZIRA, Spain
3. urgencies, h lluis alcany, xativa, Spain
4. urgencies, H. lluis alcany, xativa, Spain

Corresponding author: jucar46680@gmail.com

Keywords: CARDIOVASCULAR, INFARTUS MYOCARDY, URGENCES

realizes study of coronary sharp picture including heart attack of myocardium, angina of chest and sd coronary to value time of action and hospitalization if keys needs in a regional hospital before introduction of code heart attack of the conselleria of sanitat of Valencian community: coronary, heart attack of miocarido, cardiological urgencies I

STUDY: On a total of 104405 urgencies dress in service patient 263 161 patients came for sd coronary, hearts attacks of myocardium 51 and unstable anginas of chest 50. They have been valued by ages, sex, and destination after valoración for urgencies. Middle Ages of woman 74.18

(32.32 patient %) and I remain PROVED men: an incident of hearts attacks has been observed

RESULTS: have been observed an incident of hearts attacks of myocardium of 19.39 % (51 cases), anginas of chest in 19.01 % (50 cases) and coronary syndromes in the rest by 61.21 % besides a case of cardiopathy that supposed 0.38 % of the total. Middle Ages in men of 68.46 with range of ages between 31 and 95 years whereas the women were in average ages of 74.18 years with ranges between 50 and 95 years conclusions: The coronary syndromes need of rapidity of diagnosis and treatment to manage to avoid progression of disease and to avoid complicaciones. This study will complete and compare in next year with the beginning of code heart attack put in march and that it will allow to value if the efficiency of this one improves the current results

Po-086

Rez de Jardin poster area

RISK FACTOR PROFILE OF PATIENTS EVALUATED IN A LOW RISK CHEST PAIN UNIT IN THE EMERGENCY DEPARTMENT.

Leonie Hester, Martina Broughall, Jennifer Foyne-Reynolds, Ken Maleady, Emily O'Connor, Niamh Collins.

Emergency Department, James Connolly Memorial Hospital, Dublin, Ireland

Corresponding author: leoniehester@yahoo.co.uk

Keywords: low risk chest pain, risk factor profile, exercise stress test outcome

Introduction:

The health-care burden of chest pain presenting to the Emergency Department is well documented, accounting for an estimated 6% of attendances annually. Missed diagnosis of cardiac ischaemia and inadvertent discharge is common; the reported rate varies from 2-4%.

Patients with low-risk chest pain are increasingly managed in a chest pain assessment unit in which accelerated diagnostic protocols are performed. ADP's comprise serial data followed by confirmatory testing, typically with exercise stress test or cardiac imaging.

Aim:

To explore the correlation between risk factor profile and EST outcomes in a population stratified as low risk.

Method:

Data were collected prospectively in Excel on all patients attending the CPAU in 2011. A total of ten risk factors were identified. The relationship of individual risk factors and EST results, and of total number of risk factors on EST outcome were analyzed and odds ratios calculated.

Results:

Of 633 patients, 594 completed an EST. 109 had undetermined (submaximal or inconclusive) results. 51 patients had a positive EST; 434 were negative.

The odds ratios of a positive EST for each risk factor were: previous history of cardiovascular disease: 3.74, smoking 3.25, hypercholesterolaemia: 2.82, hypertension: 2.31, Diabetes: 2.14, positive family history: 2.08, alcohol intake: 1.90, high BMI: 1.43. Recreational drug use was not related while stress was inversely related

Eighteen patients (36%) with a positive EST had ≤ 2 Risk Factors. Absence of risk factors did not predict a negative EST.

Conclusion:

Early risk stratification in the ED identifies patients at low risk of short-term MACE. However, additional risk stratification is essential with dynamic testing.

The Risk Factors most strongly associated with a positive EST are previous history of CVD and smoking.

Absence of risk factors does not predict a negative EST.

Po-087

Rez de Jardin poster area

ATRIAL FIBRILLATION CARIOVERSION FROM EMERGENCY DEPARTMENT

Daniela Rosillo Castro (1), Paula Lazaro Aragües (1), Maria Patricia Suarez Beke (1), Tamara Martín Casquero (1), Francisca Alonso Cano (1), Irene Fontes Manzano (2)

1. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

2. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: Atrial fibrillation, Cardioversion, Emergency Department

Objetives

Describe the attitude followed with patients in atrial fibrillation (AF) who were cardioverted in our ED

Methodology

Retrospective chart review. Its selected the cardioverted patients in 2012. 109 patients were cardioverted. The study variables were sex, age, history (hypertension, diabetes, previous AF, ischemic heart disease, valve disease, previous stroke) Whether or not they had previously made ECO-Cardio. Treatment to take in relation to FA, Clinic for consulting in emergencies (palpitations, dyspnea, chest pain, dyspnea, syncope, dizziness, accidental finding AF). Cardioversion performed (pharmacological, electric or both), if treating various base. If re-looked for the same reason in the past three months, and if they were controlled in cardiology in the three months following.

Results

38.5% were male, 61.5% female Average age 63.01/-/16.47 10% under 40 years. 33.1% over 70 years. Personal history: 51.4% previous AF, hypertension 35.8%, diabetes 20.2%, 13.8% ischemic heart, valve disease 5.5% and 4.6% prior stroke.

57.8% had made previous Eco-Cardiography, of which 47.8% had structural heart disease. 51.4% had basic

treatment for FA: 57% flecainide, 55.35% beta blockers, 41% acenocoumarol, Aspirine 26.78%, 9.8% dronedarone, amiodarone 8.21%, 6.6% verapamil, 3.21% Dabigatran, 1.7% warfarin.

Clinic presentation: palpitations 73.4%, 22% chest pain, dyspnea 9.2%, dizziness 7.3%, 1.8% AF casual and 0.9% syncope. CHA2DS2-VASC score: 0 20.2%, 1 11.0%, 2 18.3% and 30.5% are >3

Pharmacological cardioversion: 57.8%, 85.95% success, of which 73% use felcainida, amiodarone 20.63%, and 3.34% vernakalant. Electrical 62.4% of patients successfully 89.70% of cases. Both in 18.3% of cases. The load used 100 in the 34.9%, and 150 in the 14.7% followed. Destination on discharge from the emergency department: 80.7% home, 9.2% income in cardiology, Short Stay Unit 2.8, 1.8% Internal Medicine, and 0.9% Uci. At 55% change or added it again from emergency treatment. The patients did not re-consulted by 80.7%. If They did it; in less than 48 hours 0.9% in less than 1 week 5.5%, from 1 week to one month 6.4% one month 3 6.4%. Were revised in cardiology outpatient clinics 39.4%: 1.8% in less than 48 hours, 48 hours to 1 week 1.8%, 3.7% to 1 week 1, week to a month 1st 34.9% and 20.2% until 3 months. In consultation ECG was performed at 59.6% remained in sinus rhythm and the 96.92%

Conclusion

6 out of 10 patients were women. Half of our patients had had a previous episode of atrial fibrillation. Electrical cardioversion was performed in one third of cases. And were necessary both in 1 in 10 patients. 4 out of 5 patients were discharged from our service. The number of re-consulted by AF was below 20% and Cardiology patients reviewed almost all were in sinus rhythm

Po-088

Rez de Jardin poster area

CARDIOLOGICAL URGENCIES IN HOSPITAL OF RIBERA ALZIRA DURING 2012

Pedro Garcia Bermejo (1), M Teresa Magdalena Carreres (2), Oscar Martinez Ferris (3), Jose Minguez Platero (1), Juan Carlos Montalva Barra (4)

1. URGENCES SERVICE, HOSPITAL DE LA RIBERA, ALZIRA, Spain

2. PRIMARI CARE, CS CARCAIXENTE - H DE LA RIBERA, CARCAIXENT, Spain

3. URGENCES SEVICE, CSI ALZIRA, ALZIRA, Spain

4. urgencies, h lluis alcanys, xativa, Spain

Corresponding author: jucar46680@gmail.com

Keywords: DESTINATION, CARDIOLOGICAL URGENCIES, INFARCTUS

The hospital of the Bank received during him 2012 103405 urgencies of which only 263 (0,25 %) was cardiological. The area of the RIBERA has a población of approximately 800.000 inhabitants that they increase in almost 500000 in summer and has a regional hospital that centralizes all the services included the urgencies I

STUDY: taken the variables, sex, age and with articles of coronary syndrome, angina of chest and heart attack of myocardium they are checked the times of stay in urgencies and the final destination after initial treatment.

RESULTS. 263 patients urgently cardiological that suppose 0.25 % of the total of urgencies were in urgencies an average of 5 h before destinations be valuing: 20.53 % (54 patients) moved to UCI, 22 patients his destination was his domicile (8.36 %), 1.14 % his result was exitus and the rest, that is to say, 69.58 % (183 patients) was deposited in internal medicine CONCLUSIONS: A good triaje and control of symptoms and diagnostic precocious valuation allows that the majority of patients with coronary syndrome should be treated in internal medicine in his evolution with what the indice of survival is of mas 98 % in our hospital

Po-089

Rez de Jardin poster area

CONGENITAL DIAPHRAGMATIC HERNIA WITH LATE PRESENTATION IN ED

Hojjat Derakhshanfar (1)

1. Emergency Medicine depttment, Imam Hossein hospital, Tehran, Iran, Islamic Republic of

Corresponding author: hojjatderakhshanfar@yahoo.com

Keywords: Acute Coronary Syndrome, Esophageal perforation, Chest pain

Chest pain is a common complaint in patient present to the emergency department(ED) and it caused by several life threatening condition such as esophageal perforation. A 78 years old man known case of ischemic heart disease came into the ED with complaint of chest pain, physical examinations were normal on arrival. ECG and CXR was non specific. Eventually he was admitted in CCU with acute coronary syndrome.

During admission the patient got fever and productive cough. Despite antibiotic administration, patient was deteriorated and in this stage chest CT scan showed pulmonary abscess. Having no result in spite of utilizing board spectrum antibiotic, abscess drainage under guide of sonography was performed. A large amount of pus and food particle was drained. Gasterographin study showed esophageal perforation and entrance of contrast to mediastan and right sided pleura.

With chronic perforation he was admitted in ICU with conservative management. Two weeks after, the patients was discharged from hospital with good recovery and acceptable result.

Chest pain is a common complaint in the emergency visits. Perhaps putting wrong the first step, begin a series of measures to be unnecessary in patients and delay the correct diagnosis. Esophageal perforation is a life-threatening condition that must be identified and treated early to minimize morbidity and mortality.

Po-090

Rez de Jardin poster area

ETHYLENE GLYCOL POISONING

José Valero-roldan (1), Iván Villar-mena (2), Inmaculada López-leiva (1), Rafael Infantes-ramos (1), Cristina Fernández-fígares (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Ethylene glycol, Poisoning, Ethanol

Clinical cse: A 59 years old man brought in by emergency ambulance goes by voluntary intake, three hours earlier, 10 tablets of Diazepam 10 mg, 10 tablets Lormetazepam 3 mg to about 300-500 cc of car antifreeze (ethylene glycol) bought Gas station in advance.

Flumazenil is administered for suspected intoxication Benzodiazepines, showing even more collaborative then defiantly, with information and knowledge from the Internet of the mechanisms of action, effects and toxic and lethal dose of ethylene glycol and recognizing its attempted suicide without seeking medical help for solve it.

In the observation area is monitored, we proceed to catheterization to control diuresis, and fluid therapy is administered after contact the National Toxicology telephone, Absolute ethanol is given as an antidote in loading and maintenance doses indicated, requesting Pharmacology for allocation to our workspace. Is contraindicated, gastric lavage and activated charcoal

Personal history:

No drug allergies. Diabetes, hypertension and dyslipidemia, depressive syndrome.

Medication: Enalapril, Simvastatin, Citalopram, Metformin. Ocasional.Vive only smoker and drinker.

Physical examination:

TA: 132/73, HR: 78 bpm, O2 saturation 98%. Blood glucose: 101 mg / dl, FR: 17 rpm. Conscious, Oriented, uncooperative, sleepy, well hydrated and precast Normocoloreado. Eupneic at rest. Do not run. No enol fetor. Glasgow 15/15 (looks drunk), bilateral mydriatic pupils reactive

Fisical examination devices without alterations.

Neurological examination: no abnormalities

Investigations:

ECG: sinus rhythm at 70 bpm, PR: 0.14; without repolarization abnormalities or signs of cardiac ischemia.

Laboratory tests: blood count, coagulation and blood gas unaltered venous blood gases: pH: 7.34; pCO2: 32.2, pO2 67, HCO3: 17; Excess bases: - 7.3.

Urinalysis: unchanged.

Chest X-ray within normality.

Evolution:

The patient remains stable in the observation area with good diuresis (1400 cc in 7 hours) and Absolute ethanol is

administered according to indicated doses, and bicarbonate 1/6 M to possible metabolic acidosis.

At 10 hours shows mild temporo-spatial disorientation Glasgow 14/15 without laboratory abnormalities evident even Ethanol 156 mg / dl, ph.: 7.29, pCO₂ 34.4, pO₂: 90.5, HCO₃: 16.2 and after calculating deficit bicarbonate (218 ml) to continue with the administration and control of blood gases 1M HCO₃ hour.

After 17 hours metabolic acidosis persists despite treatment for alcohol dehydrogenase competitive with ethanol and bicarbonate. ICU admission is decided, where it remains stable. 48 hours later, the figures were normalized blood gas and the internal environment.

Rated by Psychiatry pattern antidepressants, anxiolytics and proceeds to involuntary admission Acute Mental Health Unit at high risk of reoffending again attempted suicide.

Conclusions:

Ethylene glycol is a low molecular weight alcohol. Accidental or intentional ingestion is a common cause of intoxication. Diagnosis is based on clinical suspicion and / or a history of ingestion and the triad of neurological impairment, metabolic acidosis with elevated anionic and kidney failure. The presence of calcium oxalate crystals in the urine are characteristic of this intoxication. Early diagnosis and treatment significantly increased survival.

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Po-091

Rez de Jardin poster area

AN UNUSUAL FOREIGN BODY IN THE ORAL CAVITY - PAEDIATRIC

Omar Ghazanfar (1), Nick Jenkins (1)

1. Emergency Department, Wexham Park Hospital, Slough, United Kingdom

Corresponding author: oghazanfar@nhs.net

Keywords: Foreign Body, Airway, paediatric

A 2 year old presented to the emergency department as a pre-alert call with a foreign body lodged in the oral cavity.

On initial assessment the patient had part of a tooth brush stuck in the left lateral aspect of the oral cavity which was extending outside the lips. The patient was bradycardic at 70 but the rest of the observations were normal and the airway was intact.

It was very difficult to assess as to where the distal end of the tooth brush was extending and a facial and oblique xray was obtained which showed the foreign body extending toward the inner ear and not within the brain. It was very difficult to determine whether the distal end was hinging on a blood vessel or nerve bundle and it was subsequently decided to transfer the patient to a maxillo-facial surgical centre where the foreign body was successfully removed under anaesthesia.

This was a very unusual presentation and we will try and illustrate that medical management of the patient in any acute situation will follow the time memorial ABC algorithm.

Po-092

Rez de Jardin poster area

SEVERE DISEASE IN WEGENER'S GRANULOMATOSIS: PULMONARY HAEMORRHAGE

José Valero-rolan (1), David Nuñez-castillo (1), Cristina Fernández-figares (1), Inmaculada López-leiva (1), Rafael Infantes-ramos (1), Iván Villar-mena (2)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Wegener's granulomatosis, Hemorrhage, Vasculitis

Clinical case:

Introduction

Wegener's granulomatosis is a disease of unknown origin in the context of primary systemic granulomatous vasculitis with involvement of the upper and lower respiratory tract, glomerulonephritis and vasculitis of small vessels. Pulmonary involvement ranges from asymptomatic pulmonary nodules pulmonary infiltrates and alveolar hemorrhage fulminantes (1-4).

Clinical case:

A forty one years old woman with no personal history that goes for seven days of weakness, fatigue and progressive dyspnea associating polyarthralgia, hearing loss and occasional rectal bleeding, with unquantified weight loss for 3 months.

Exploration:

When he arrived, had tachycardia at 125 beats per minute, and oxygen saturation of 85% basal, malaise, tachypnea and respiratory auscultation crackles bibasilar.

Additional tests:

Analytical with normocytic anemia, leukocytosis, thrombocytosis, and elevated C-reactive protein (CRP). Chest radiograph with bilateral infiltrates broncho-alveolar bibasal dominance and bilateral nodular. Presented intense and progressive respiratory deterioration, requiring ventilatory support by noninvasive mechanical ventilation, BiPAP type, and starting antibiotics, steroids and transfusion of red cells, with subsequent clinical improvement. Blood cultures were requested, urine and sputum after self-limited hemoptysis, with negative results. Negative and hepatic markers of autoimmunity study with antinuclear antibodies (ANA) and myeloperoxidase (MPO) negative, and neutrophil cytoplasmic antibodies (c-ANCA) and antibodies to proteinase 3 (PR3) positive.

Computed tomography (CT) showed infiltrative lesions with predominantly air bronchogram bibasal compatible with non-cardiogenic pulmonary edema and mediastinal lymphadenopathy. In Pneumology completed the study and diagnosis of Wegener's granulomatosis definitely with accompanying massive alveolar hemorrhage.

Conclusion:

Wegener's granulomatosis has low prevalence, has the highest incidence at 40 years.(5,6) and usually begins affecting upper respiratory tract and ear. Other changes are polyarthralgia, arthritis, deterioration in general health, weight loss, anorexia and astenia (2). Radiologically, bilateral infiltrates can be found mainly lower multiple nodules that may cavitate or have migration patterns. There may be pleural effusions, diffuse alveolar infiltrates or mediastinal and hilar lymphadenopathy.

A 10% have massive pulmonary haemorrhage secondary to alveolar capillaritis leading cause of alveolar hemorrhage difusa (1).

Analytically normocytic anemia may exist with leukocytosis, thrombocytosis, hypoalbuminemia, increased erythrocyte sedimentation rate, c-ANCA positivity and PR3 (1,5). The final confirmation by biopsy is pulmonary, nasal, kidney or skin and the treatment involves administration of immunosuppressants, cyclophosphamide, methotrexate

and corticosteroids intravenosos6. There is a early mortality prognosis of 90% without treatment (1,2)

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Po-093

Rez de Jardin poster area

MENINGOENCEPHALITIS REQUIRING MECHANICAL VENTILATION

Inmaculada López-leiva (1), José Valero-roldan (1), David Nuñez-castillo (1), Iván Villar-mena (2), Cristina Fernández-figares (1), Rafael Infantes-ramos (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain
2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Meningoencephalitis, Artificial respiration, Intubation

Patient without drug allergies or past medical history, attended the previous day in the hospital by malaise, not feeling dysthermia thermometer, chills and dizziness. There were no alterations in analytic except Leukocytes: 23340 (N: 88.9%). Plain thoracic radiography and physical examination unaltered. May be discharged.

After 24 hours at home has tonic-clonic partial seizure right arm and deviation of the oral commissure and gaze upward and subsequently generalized knowledge lost in the presence of medical personnel Ambulance that moved to hospital.

Exploration

Pauses of apnea and scale Glasgow 3/15, so we proceed to Intubation and mechanical ventilation. Treatment began with Ac. Valproic, ceftriaxone and vancomycin.

Computed Tomography is performed without alterations of skull. In analytic Leuc: 23,680 (N: 82.9%), Cr 1.4, severe acidosis respiratory (pH: 7.06, pCO₂: 105; HCO₃: 28.9); Radiology single thoracic showed a complete atelectasis of the left lung .

Evolution

The patient was admitted to the Intensive Care Unit (ICU) with respiratory isolation of suspected bacterial meningitis, lumbar puncture is performed, the cerebrospinal fluid was analyzed as multiple virus serology in cerebrospinal fluid, enterovirus PCR,...

Electroencephalogram is made compatible with diffuse encephalopathy nonspecific etiology with focal type PLEDs (periodic lateralized epileptiform discharges) that could be related to focal alterations harmful (necrotizing viral encephalitis, herpes, focal vascular disorders, stroke,...)

Cerebrospinal Fluid biochemistry was consistent with viral meningitis

After elderly patient could be extubated without neurological sequelae and after hemodynamic stability and absence of symptoms after 3 days in ICU may be discharged to the patient's home.

Po-094

Rez de Jardin poster area

PTOSIS SECONDARY TO LEFT ANTERIOR CHOROIDAL ARTERY ANEURYSM

Iván Villar-mena (1), Inmaculada López-leiva (2), José Valero-roldan (2), Cristina Fernández-fígares (2), Rafael Infantes-ramos (2)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Ptosis, Aneurysm, Therapeutic Embolization

A 37 years old man, with no personal history or known allergies, who goes to medical consultation for hemicraneal left headache radiating to neck and left ear 10 days left of evolution that does not go away with painkillers after being seen in the emergency with a diagnosis of atraumatic cervicgia.

Now he goes back to emergency to present left eyelid drop for 4 days and blurred vision companion. On examination shows complete left ptosis with mydriatic pupil unresponsive with preserved abduction and paralysis of the medial rectus eye muscles, upper and lower, with the rest of the examination without alterations.

It is derived from Hospital for specialist valuation (Ophthalmology and Neurology).

Exploration: Background Eye: papillae with clean edges and good color, no papilledema and normal-appearing macula. Rest exploration by ophthalmologist and neurologist unaltered.

Investigations:

Analytical unaltered.

Cranial CT angiography: partially torn posterior communicating aneurysm and severe vasospasm.

NMR: injury morphology of 6-7 mm saccular aneurysm support posterior communicating artery without signs of subarachnoid hemorrhage

Evolution: Following findings of laboratory tests and evaluation of Neurology income plan is decided. Keep in neurological monitoring and after 4 days of admission arteriography is program for aneurysm embolization is performed successfully and without complications.

Treatment: Treatment began with Nimodipine and neurological observation floor.

Rehabilitation ptosis recovery after being discharged after aneurysm embolization.

Clinical Trial: Left anterior choroidal artery with third cranial nerve palsy.

Conclusions: The implementation of an adequate history and physical examination with normal results do not always represent the absence of pathology and require monitoring at home and monitored by your doctor. Developments in many cases forces us to use the means we have and act with multidisciplinary specialty care and emergency department.

Po-095

Rez de Jardin poster area

APPROACH TO INJURIES CAUSED BY RABIES SUSPECTED DOG BITES: THREE CASES

Ak Yapici (1), U Kaldirim (2), A Karakas (3), I Arziman (2), Sk Tuncer (2), O Altinel (4)

1. PLASTIC AND RECONSTRUCTIVE SURGERY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey

2. EMERGENCY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey

3. INFECTIOUS DISEASES AND CLICAL MICROBIOLOGY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey

4. GENERAL SURGERY, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey

Corresponding author: ibrahimarz@hotmail.com

Keywords: animal bites, rabies, wound care

Animal and human caused bites constitute 5% of total trauma cases admitted to emergency department. Seventy % of animal bites are caused by dogs. These bites are usually incised wounds. Repair timing of wounds due to animal bites are still in discussion. In recent studies, it is advised that primer repair must be carried out for cases who admitted within the first 24 hours with non-infected wounds particularly if wound is at head and neck region. Besides of wound repair, immunoglobulin application, vaccine program initiation and proper antibiotic treatment should be also considered, in order to prevent rabies and wound infection. In this study, we aimed to share our experiences of primer of repair animal (dog) bites admitted to emergency department.

Po-096

Rez de Jardin poster area

COMBINED CAUSES OF PNEUMO MEDIASTINUM - SPONTANEOUS PERFORATION OF THE ESOPHAGUS AND EMERGENCY TRACHEOTOMY - AFTER AN ACUTE CAUSTIC SUBSTANCE INGESTION

Luciana Teodora Rotaru (1)

1. emergency department, County Hospital, Medical University, Craiova, Romania

Corresponding author: lucianarotaru@yahoo.com

Keywords: esophageal rupture, tracheo - esophageal fistula, pneumomediastinum

Introduction. Reasons for submission

Pneumomediastinum can be a difficult problem triggering and maintaining of intrathoracic compression syndrome due to identification difficulties in the first instance, the possible etiology and especially to the difficulties of the emergency management.

The material of the study - case presentation - patient (gender M, 32 years) with acute esophagitis after caustic ingestion. At 7 hours from the onset, low emergency tracheotomy for progressive upper airway obstruction. At 6 hours after this time, the patient is transferred from another hospital to ED Emergency Hospital Craiova showing progressive acute respiratory failure with extensive subcutaneous emphysema in the neck, head and upper torso. Chest X-ray shows massive pneumomediastinum.

Case analysis

We have considered two possible causes of pneumomediastinum, iatrogenic injury to the posterior tracheal wall perforation during tracheotomy and spontaneous esophageal rupture. Thoracic CT (without oral contrast administration - total dysphagia) shows only pneumomediastinum. Esophageal and tracheal endoscopic exploration, impossible and dangerous is delayed. By day 5 remains feverish patient with moderate respiratory distress, feeding gastrostomy, bilateral chest drainage, total dysphagia, regurgitation of esophageal necrotic mucosa. Day 5 - sudden atrocious chest pain, rapidly progressive shock, respiratory failure brutal worsening, on the tracheotomy canula outwardly gastric contents. CT with contrast administered on the gastrostomy tube shows the contrast exteriorization intrathoracic and on the tracheal canula. Diagnosis: Esophageal - tracheal fistula. Esophageal rupture. Acute mediastinitis. Pneumomediastinum. Death in less than 7 hours.

Conclusions

Low tracheotomy beyond 7 hours in conditions of severe esophageal lesions, weakened tracheo esophageal area.

As peri lessional edema decreased, opening and - produced both mediastinitis and the eso - tracheal communication.

Endoscopy either exploratory or therapeutic visa was not an option in the acute phase, because of the major risks of perforation.

Retrograde administration of contrast on the gastrostomy tube could be beneficial for the identification of therapeutic solutions.

Late identification of pneumomediastinum generated by the concomitance of the esophageal syndrome may cause late initiation of intensive therapy and initiation of mediastinitis. A chest ray examination at the patient admission and after tracheotomy is mandatory.

Po-097

Rez de Jardin poster area

ORGANIC OR PSYCHIATRIC PATHOLOGY?

Sara Visiedo Sánchez (1), Ana Isabel Condon Abanto (1), Teresa Escolar Martinez Berganza (1), Alejandra Vidal Gomara (1), Jose Manuel Abascal Roda (1), María De La Peña Lopez Galindo (1), Miguel Rivas Jimenez (1)

1. Emergency department, HCU Lozano Blesa, Zaragoza, Spain

Corresponding author: saravisiedo@hotmail.com

Keywords: Psychiatric patient, Brain tumor, Meningioma

Case description: woman of 46 years with a history of hypertension, delusional disorder (with several income in psychiatry service), dyslipidemia and osteoporosis. She went to the emergency service forced by a family member by oppositional attitude of 48 hours of evolution (refuses to take medication, do not eat, do not drink...).

Exploration and complementary tests: conscious and alert. Cardiopulmonary auscultation: without alterations. Abdomen: anodyne. Lower extremities without edema and signs of DVT.

Neurological examination: looks to the call, speaks coherent but incongruous (repeated phrases, emits insults), anodyne pupils, no alteration of cranial, no motor or sensitive focality. Present reflections. No stiff neck or signs of meningeal irritation. Mental examination: temporo-spatial disorientation, bit collaborator conduct, disorganized speech, mutista attitude, perplexed look occasionally.

Complementary tests: analytical blood and urine without alterations, ECG: a 78 beats per minute, sinus rhythm without alterations, chest x-ray: without alterations. Cerebral CT: mass located in woven arachnoid.

Clinical trial: Meningioma.

Differential diagnosis: behavioural alterations in context of delusional disorder Vs alterations behavioural due to an organic process.

Final comment: meningioma is a usually benign brain tumor, typically manifests itself in patients in middle age. The clinic is determined by the location of the mass and size. You must not never forget to discard organic pathology in a psychiatric patient who comes to the Emergency Department for any reason difficult to filial.

Po-098

Rez de Jardin poster area

CHILAITITI'S SYNDROME WITH PNEUMOBILIA IN A PATIENT IN THE EMERGENCY DEPARTMENT: A CASE REPORT

Alexandru Nicolae Carstea (1), Gabriela Filip (1), Rodica Daniela Gavrilă (2), Vasile Gavrilă (1)

1. Emergency Department, Emergency County Hospital, Timisoara, Romania

2. Department of Family Health Care Providers, Romanian National Society of Family Medicine, Timisoara, Romania

Corresponding author: gavrilă_vasile@yahoo.com

Keywords: Chilaiditi's syndrome, pneumobilia, Emergency Department

Introduction: The hepatodiaphragmatic interposition of the colon or small intestines known as Chilaiditi's syndrome is a rare entity. It is frequently experienced in elderly, particularly in men. This syndrome was described for the first time by the radiologist Demetrius Chiliaditi in 1910. It may be asymptomatic, but it may be also present with symptoms, such as abdominal pain, nausea, vomiting, constipation and respiratory distress. **Case report:** We report a case of a 82 year old male with the past medical history of Parkinson's disease, hypertension and cholecystectomy (10 years ago), who was brought by ambulance in the Emergency Department with a history of generalized abdominal pain, nausea, vomiting starting 10 days ago. Clinical examination revealed dehydration, abdominal distension and severe stabbing right upper quadrant and epigastric pain. The supine and erect abdominal X-ray showed elevated right hemidiaphragm with transverse colon interposition between diaphragm and liver (Chilaiditi's sign) without evidence of air fluid levels. Endoscopy showed a duodenal orifice anastomosis (choledochoduodenoanastomosis). CT scan of the abdomen showed the interposition of the hepatic flexure of the colon between the right liver lobe and the right hemidiaphragm and pneumobilia. The patient was admitted in the hospital and treated conservatively. The patient evolution was favorable with disappearance of symptoms. He was discharged from hospital three days later.

Conclusion: The treatment for Chilaiditi's syndrome is generally conservative. This case reports an association less common: Chilaiditi's syndrome and pneumobilia.

Po-099

Rez de Jardin poster area

AN UNEXPECTED CASE IN THE EMERGENCY DEPARTMENT: SEIZURE-INDUCED PETECHIAL RASH ON THE CHEEKS

Ozlem Dikme (1), Ozgur Dikme (1), Hakan Topacoglu (1), Abdullah Ilhan (1)

1. Emergency department, Istanbul Education and Research Hospital, Istanbul, Turkey

Corresponding author: ozlemakinci80@yahoo.com

Keywords: seizure, petechial rash, emergency department

Background: Petechial hemorrhage causes distinctive findings which can vary in size and distribution ranging from few tiny markings to an array of large blushing areas and may look like a rash or abrasion known as petechiae. Petechiae can be caused by a variety of situations and conditions and they can play a role in both forensic science and in medical diagnosis. It can also occur when someone has a seizure.

Objective: In this case report, we describe a patient who was admitted to the ED with syncope and petechial rash on the cheeks due to seizure.

Case Report: A 71 year old female patient was admitted to the ED with syncope. Her son said that he found her unconscious and after the syncope petechiae appeared instantly on her cheeks. The patient had no history of epilepsy. Also, she had no complaints before the syncope. In her medical history, she had hypertension and had used bisoprolol fumarate. After one hour follow up in the ED, generalized tonic-clonic seizure had occurred. Non-contrast CT of the brain taken after postictal period was normal. After initial stabilization, she transferred to neurology department with secondary epilepsy diagnosis. No additional seizures were observed during the follow-up period. After 24 hours of petechiae development, the size of petechial area was decreased (Figure 2) and the patient was discharged at the end of the 24 hours. On the third day control, petechial area had totally disappeared.

Conclusion: Seizure related petechial rash is a rare finding and in the absence of other objective signs, it may be a clue for the diagnostic purposes. When people are asphyxiated, classic petechiae occur due to blood vessel bursts. They generally develop around the eyes but may appear at any part of the face such as cheeks. However, it should be kept in mind that a patient with a history of syncope particularly associated with petechiae on any part of the face may be suffering from seizures.

Po-100

Rez de Jardin poster area

AN IDIOPATHIC INTRAMURAL HEMATOMA OF ESOPHAGUS MIMICKING THORACIC AORTIC DISSECTION

Misaki Murasaki, Shigenobu Maeda, Makoto Sera, Kenichi Kano, Takashi Matsumoto, Hideya Nagai, Shinsuke Tanizaki, Hideyuki Matano, Hiroshi Ishida
Emergency department, Fukui Prefectural Hospital, FUKUI, Japan

Corresponding author: pxt01173@nifty.ne.jp

Keywords: intermural hematoma, aortic dissection, chest pain

Intramural hematoma of esophagus is a rare clinical condition. It was first reported as spontaneous submucosal

dissection in 1957. Since then, this condition has been inconsistently named as submucosal hematoma, submucosal dissection, and intramural hematoma of esophagus.

It seems to be a consequence of esophageal injury such as vomiting, foreign body ingestion, nasogastric tube insertion, endoscopic examination and procedures, with or without coexisting blood coagulopathy.

We experienced a case of an idiopathic intramural hematoma of esophagus, initially diagnosed and treated as a thoracic aortic dissection.

A 58-year-old man with a history of untreated hypertension presented to a local hospital with sudden chest and back pain without any preceding event.

On initial evaluation, he was diagnosed with Stanford type B thoracic aortic dissection based on his symptoms and findings on enhanced computed topography imaging.

After treatment with intravenous antihypertensives, he was transferred to our emergency department.

On reviewing the CT images, a circumferential hematoma was pointed out in the esophageal wall extending into the mediastinum; Dissection of thoracic aorta was not confirmed.

He was admitted and was treated conservatively with nothing by mouth.

Upper gastrointestinal endoscopy revealed no hematomata or ulcers in the esophageal membrane, which suggested that the hematoma was located deeper in the mucosal membrane. The hematoma decreased in size and the symptoms improved only with conservative treatment.

We conclude it is important to remember that the clinical picture of intramural hematoma of esophagus can mimic thoracic aortic dissection.

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Rez de Jardin poster area

CERVICOFACIAL EMPHYSEMA AND PNEUMOMEDIASTINUM FOLLOWING DENTAL EXTRACTION

Funda K. Akarca, Ozge Can, Yusuf Ali Altuncu, Selahattin Kiyani, Murat Ersel
Emergency Department, Ege University Medical School Hospital, Izmir, Turkey

Corresponding author: fkarbek2003@yahoo.com

Keywords: pneumomediastinum, cervicofacial emphysema, dental extraction

Introduction

Cervicofacial subcutaneous emphysema is an unusual complication after dental surgery, occurring by inadvertent introduction of air into the soft tissues during procedures using high-speed, air-driven handpieces or air-water syringes.

Case Report

A 31-year-old male presented to the emergency department (ED) with swelling in his face and neck one hour after undergoing extraction of a lower molar. The swelling began at the dentist's office and was steadily increasing up until his presentation to the ED. He denied shortness of breath, chest pain, and dyspnea. On examination he appeared in no acute distress; vital signs were normal. On examination he had non-erythematous soft tissue swelling from the right infraorbital region to the thoracic region with crepitus on palpation, suggesting profound subcutaneous emphysema. His trachea was in the midline. His lungs were clear to auscultation. Computed tomography (CT), performed to determine the extent of the emphysema, showed air in the submandibular space, parapharyngeal space, carotid space, retropharyngeal space, mediastinum, and paracardiac region. Consultation was obtained from the thoracic surgery department and the patient was hospitalized for observation and to receive prophylactic antibiotics. During his hospital stay, his emphysema gradually resolved without complication, and he was discharged on hospital day four.

Discussion

Cervicofacial subcutaneous emphysema results from the entry of air or gas into soft tissue planes of the head and neck. Once air enters the deep soft tissues under pressure, as in our patient, it follows the path of least resistance through the connective tissues. The periapical space underneath the lower molars is contiguous with the submandibular space, which communicates with the retropharyngeal space and mediastinum. From the retropharyngeal space, which lies between the posterior wall of the pharynx and the vertebral column, air may penetrate the alar fascia posteriorly to enter Grodinsky and Holyoke's "danger space", which is in direct communication with the posterior mediastinum. When air collects here, it may compress the venous trunks resulting in cardiac failure, or it may compress the trachea resulting in asphyxiation. Further complications of subcutaneous emphysema include pneumothorax, pneumopericardium, and mediastinitis; air can even reach the retroperitoneal space. Although rare, another life-threatening complication is air embolism.

The clinical presentation and course are generally predictable: during or soon after the procedure using a high-speed dental drill, the patient notices sudden unilateral facial swelling which may quickly spread in the subcutaneous tissues towards the neck and thoracic wall. Mild tenderness and crepitus on palpation are noted. Retrosternal pain and dyspnea are characteristic if the air has dissected into the pneumomediastinum. Additional signs of pneumomediastinum include dull cardiac sounds and mediastinal crepitation during systolic contraction ('Hamman's crunch'). Venous distension, hypotension, hypercarbia, and acidosis are life-threatening consequences if a massive amount of air becomes trapped in the mediastinum.

The differential diagnosis of sudden onset head and neck swelling after dental procedures includes hematoma, cellulitis, allergic reaction, angioedema and subcutaneous emphysema. Anaphylaxis would be expected to result in more profuse, bilateral facial swelling and skin changes with possible cardiorespiratory symptoms and collapse (wheezing and/or shock). Angioedema (related to massive extracellular fluid extravasation) usually appears in the maxilla as a reddened area with well-circumscribed rings and a burning sensation. If a hematoma is suspected from sudden arterial bleeding, crepitus would not be present on examination.

Roentgenographic evidence of air within the mediastinum, seen as a thin line of radiolucency outlining the cardiac border on PA chest radiography, is diagnostic for this entity. Clues to the presence of air in the mediastinum on ultrasonography have also been reported. Pneumopericardium can easily be diagnosed on chest CT images.

Conclusion

Recognition of cervical emphysema and pneumomediastinum occurring after dental procedures is essential for dentists and emergency physicians. Once diagnosed with dental procedure-related pneumomediastinum, the patient should be observed so that any life-threatening problems can be treated promptly.

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Rez de Jardin poster area

FASTEN YOUR SEATBELTS! LETHAL THORACIC INJURY AFTER AIRBAG ACTIVATION WITHOUT FASTENED SEATBELTS: CASE REPORT

Michal Plodr (1)

1. Emergency Medical Service, 7th Field Hospital, Czech Armed Forces, Hradec Kralove, Czech Republic

Corresponding author: plodrmic@seznam.cz

Keywords: resuscitation, airbag injury, aortic disruption

The author presents case report of a motor vehicle accident, where a front passenger sustained from lethal thoracic injury. The mechanism of injury was blunt thoracic trauma after airbag activation without fastened seatbelts. The main steps of resuscitation efforts of the Helicopter Emergency Medical Service team with subsequent life-saving procedures with gradually worsened health status of the patient are described. After carrying out all available resuscitation maneuvers, the patient died due to hemorrhagic-traumatic shock. Autopsy findings are described, where the cause of death was aortic disruption with massive bleeding into the mediastinum. Finally, main principles of development of thoracic injury after airbag activation are mentioned.

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Rez de Jardin poster area

WIDESPREAD SURGICAL EMPHYSEMA FOLLOWING TRIVIAL INJURY TO THE HAND

William Gietzmann (1), Joana Mousinho (1), Karuna Tandon (1), Samuel Turner (1)

1. Surgical department, Eastbourne District General Hospital, Eastbourne, United Kingdom

Corresponding author: w.gietzmann@nhs.net

Keywords: Trauma, Minor injuries, Surgical emphysema

Introduction: Surgical emphysema is a recognised complication of trauma, typically significant penetrating trauma such as gunshot and stab injuries or blunt injuries of the respiratory tract such as fractured ribs. Other aetiologies include gas-producing bacteria.

Case presentation: A 22-year-old male window-fitter presented to the emergency department with pain and swelling of the left hand, forearm and arm following a 1mm puncture wound to the thenar eminence with a large piece of plastic. On examination, crepitus was felt all the way up the medial side of the arm. There were no signs of infection or other injury and the patient was well systemically. Plain radiographs of the arm and chest showed air tracking from the proximal phalanges to the upper arm. There was no pneumothorax. The patient was treated initially with intravenous antibiotics to cover gas-producing organisms. Neither haematological, nor biochemical, nor microbiological investigations showed any evidence of an infective aetiology. The patient was discharged home after 48 hours with no further treatment.

Discussion: Surgical emphysema has rarely been described in cases of such apparently insignificant injury. In this case, the disparity between the extent of the surgical emphysema and the triviality of the wound raised concerns of bacterial infection, but in fact none was demonstrated. A proposed mechanism of gas accumulation is the propagation of environmental air subcutaneously secondary to the formation of a one-way valve at the sight of injury and subsequent muscular activity.

Conclusion: Although surgical emphysema is a well-documented consequence of high impact trauma, it is important not to discount seemingly trivial penetrating injuries. Awareness of this possibility may allow empirical treatment with broad-spectrum antibiotics to be avoided in future. Whilst urgent surgical and microbiological advice should be sought in this setting, the mainstay of management is conservative.

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Rez de Jardin poster area

ISOLATED JEJUNUM PERFORATION WITH LOW ENERGY BLUNT ABDOMINAL TRAUMA

Y?lmaz Ayd?n (1), Tuba C. Ozturk (1), Hasan Demir (1), Elif B Garda (1), Asl? Ucar (1), Ozge E Onur (1)

1. Emergency department, Fatih Sultan Mehmet RTH, Istanbul, Turkey

Corresponding author: ozberkozge@gmail.com

Keywords: Jejunum perforation, Emergency department, low energy

Introduction: Jejunum is one of the frequently injured organ with high energy blunt abdominal trauma, but isolated jejunum perforation is observed very rare (1%). The diagnosis is also difficult. The mechanism involves a sudden increase in the intraluminal pressure due to entrapment of the small bowel segment between the vertebrae and the abdominal wall resulting with a blow-out type perforation. Here we are presenting a case with isolated jejunum perforation with a low energy trauma.

Case: A 34 years old male patient admitted to emergency room with nausea, vomiting and abdominal pain. He described a low energy trauma as he stumbled and fell down on the road and struck his abdomen to the corner of the pavement one hour ago. He was hemodynamically stable and his Glasgow Coma Scale was 15. There was diffuse tenderness on the abdomen which was more prominent in the right upper quadrant. No guarding or rebound tenderness. The physical examination was otherwise normal. Erect chest plain film revealed no free air under the diaphragm. E-FAST was negative for free fluid also. Routine blood tests and urine analysis was normal. The patient was admitted for observation in the emergency room. On repeated examinations his abdomen became more tender on palpation and abdominal computed tomography was performed with intravenous contrast. There was no free air and free fluid but an increased thickness of jejunal loop wall was revealed. The patient became more symptomatic and guarding had begun so exploratory laparotomy was applied. 1*1cm² full thickness perforation at the antimesenteric surface of the jejunal wall 140 cm distal to Ligament of Treitz was observed.

Discussion: The diagnosis of traumatic small bowel perforation is difficult. It is important to be suspicious even in low energy traumas with negative screening tests. And also we believed that the bowel wall thickness on CT images should be considered as an early sign of perforation.

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Rez de Jardin poster area

OF FISH BONES AND THE ELDERLY: A RARE CASE OF LIVER ABSCESS SECONDARY TO FISH BONE PERFORATION OF STOMACH WITH GASTRO-HEPATIC FISTULA FORMATION

Yuzeng Shen (1), Kwok Fai Mark Leong (1)

1. DEPARTMENT OF EMERGENCY MEDICINE, SINGAPORE GENERAL HOSPITAL, SINGAPORE, Singapore

Corresponding author: yuzeng9@hotmail.com

Keywords: Liver Abscess, Fish Bone, Stomach Perforation

INTRODUCTION: Upper abdominal pain presents the emergency physician a diagnostic challenge, more so when the nature of pain is non-specific and when the patient is elderly. We present a case of liver abscess secondary to fish bone perforation of stomach with gastro-hepatic fistula formation.

CASE REPORT: A 69 year old male presented to the emergency department with the complaint of non-specific epigastric and right hypochondrial pain for 4 days, associated with a few episodes of non bilious and non-bloody vomiting. He had no other gastrointestinal symptoms and denies any bleeding manifestations. There was no history of prior abdominal surgery.

His vital signs are as follows: pulse rate, 81/min; respiratory rate, 18/min; blood pressure, 109/60mmHg; temperature 36.5 and pain score, 2/10. On physical examination, the patient was neither pale nor jaundiced. There was tenderness and guarding elicited at the epigastrium and right hypochondrium. WBC count was elevated at 13.62 x 10⁹/L; Liver panel showed mildly raised bilirubin of 36umol/L, ALP of 131 U/L with mild transaminitis (ALT 41U/L and AST 55U/L). General Surgery was consulted and the patient was admitted with the provisional diagnosis of biliary sepsis to the Surgical High Dependency unit.

CT abdomen done during the day of admission revealed a multi-loculated abscess at segments 2 and 4a of the liver; a suggestion of a linear foreign body embedded within the abscess; along with a wall enhancing tract bridging the affected liver surface superiorly and lesser curvature of the stomach inferiorly. Patient subsequently underwent a laparotomy with intra-operative findings of a 7cm multiloculated liver abscess, 4cm fishbone lodged in liver, with fistula tract from lesser curvature of stomach to liver. Resection of affected liver segments and gastro-hepatic fistula was done and patient made an uneventful recovery thereafter. The patient was unable to recall any history of ingestion of fish bone. He was discharged with oral antibiotics and followed up outpatient where he remained well.

DISCUSSION: Gastrointestinal perforations by foreign bodies are uncommon. Oft quoted foreign bodies which lead to gastrointestinal perforation include fish bones, chicken bones and toothpicks. Fish bones are the most common foreign body and the stomach is the most common site of perforation. Liver abscess formation secondary to gastric wall perforation is relatively rare.

Elderly patients with abdominal complaints may present atypically, and the emergency physician should be alert to the possibility of significant pathology despite relatively innocuous presentations. Despite having a large multi-loculated liver abscess, our patient did not present with the classical triad of fever, jaundice and abdominal pain; no visible foreign body was identified on the abdominal xray and it required a CT of the abdomen before the final diagnosis was obtained.

If identified for poster presentation, additional relevant images of pertinent radiological investigations done would be included to provide further illustration and enhance learning value.

CONCLUSION: In summary, the emergency physician should be entertain the possibility of atypical presentations of liver abscess, especially in the elderly with non-specific upper abdominal pain; and that fish bone perforation via lesser curvature of stomach with gastro-hepatic fistula formation is a rare, but possible cause of liver abscess.

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Rez de Jardin poster area

AN UNUSUAL PRESENTING SYMPTOM OF AORTIC DISSECTION IN A YOUNG MALE

Deniz Dedeoglu (1), Dilek Durmaz (1), Erkan Goksu (1)
1. Emergency Department, Akdeniz University Hospital, Antalya, Turkey

Corresponding author: denizdedeoglu@live.com

Keywords: aortic dissection, Painless dissection, pulse deficit

Introduction: Although aortic dissection is a relatively uncommon phenomenon, this catastrophic disease often presents with severe chest pain and acute hemodynamic compromise. A typical presentation can be seen rarely. But above all, early diagnosis and treatment are crucial for survival [1].

Case: A 33 years old male patient was presented to our emergency department with a complaint of loss of dorsiflexion of his left foot. In his past medical history, he had the same complaint previous year with complete recovery in 3 hours spontaneously, he denied any usage of medicine. He had no family history. On arrival his Glasgow Coma Scale was 15 and initial vital signs were heart rate 78 beats/min, blood pressure 122/60 mmHg, respiratory rate 18 breaths/ min and oxygen saturation was 98%. Blood pressure was equal between the arms and he denied chest or back pain. Physical examination of the patient revealed that his left foot was slightly colder and paler; his left dorsalis pedis artery and tibialis posterior artery were barely palpable. No other pathology was noted on physical examination. Electrocardiography and chest x-ray were normal. His abdominal arterial doppler ultrasound examination showed 7 centimeters dissection flap extending from superior mesenteric artery to common iliac artery bifurcation with diameters of 12 mm in true lumen and 3 mm in pseudo lumen. His CT angiography showed the dissection flap starting from level of aortic root down to external iliac arteries bilaterally. He had thrombosis in left common iliac artery and collateral filling of distal segments. His echocardiography also revealed aortic valve dysfunction. After consultation with cardiology and cardiothoracic surgery departments, patient was taken to emergent operation. Finally the patient was discharged from hospital with complete recovery.

Discussion:

Acute aortic syndromes are uncommon but frequently fatal. In a study of 14.000 cases, the incidence was 16 per 100,000 for men and 9 per 100,000 for women. [2]. Twenty-two percent of cases were undiagnosed prior to

death. The primary event in aortic dissection is a tear in the aortic intima. Degeneration of the aortic media, or cystic medial necrosis, is felt to be a prerequisite for the development of non-traumatic aortic dissection [3]. Patients with an aortic dissection typically present with severe, sharp or "tearing" posterior chest or back pain. The pain can radiate anywhere in the thorax or abdomen. Painless dissection has been reported, but is relatively uncommon. In an analysis from the IRAD registry of 977 patients, only 63 (6.4 percent) had no pain [4]. Patients with painless dissection were older (mean age 67 versus 62 years) and more often had a type A dissection (75 versus 61 percent). A prior history of diabetes, aortic aneurysm, or cardiovascular surgery was more common in patients with painless dissection. Presenting symptoms of syncope, heart failure, or stroke were seen more often in this group. In-hospital mortality was significantly higher than for patients presenting with pain (33 versus 23 percent). In one study, up to 10 percent of patients presented with neurologic symptoms, but without chest pain [4]. The presence of impaired or absent blood flow to peripheral vessels is defined as a pulse deficit resulting from the intimal flap or compression by hematoma. A pulse deficit has been described in 19 to 30 percent of patients with an acute type A dissection [5] compared with 9 to 21 percent with a type B dissection. These patients have a higher rate of in-hospital complications and mortality than those without a pulse deficit [5]. Women are less likely to have a pulse deficit than men [6].

Conclusion: Although aortic dissection is a relatively uncommon phenomenon, mortality rate is high and atypical cases make the situation worse. History and physical examination may not be helpful for all cases and until further investigations can define criteria with high sensitivity and high specificity for ED diagnosis of aortic dissection, physicians should keep high index of clinical suspicion of this rare entity.

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SYNCOPE ASSOCIATED WITH WATER PIPE SMOKING

Nurhak Aksut (1), Umut Eryigit (1), Yunus Karaca (1), Suha Turkmen (1)

1. Department of Emergency Medicine, KTU School of Medicine, Trabzon, Turkey

Corresponding author: drsuhaturkmen@hotmail.com

Keywords: Water pipe, Syncope, intoxication

The water pipe (narghile) is particular widely used in the Arabian peninsula and the Turkish world, and has also recently become an increasingly popular way of consuming tobacco in Europe. Contrary to belief, it contains more tar, CO and toxic gasses than cigarettes. This report describes a patient presenting to the emergency department with syncope as a result of water pipe use, with tests revealing toxically high CO levels.

Key words: Water pipe, syncope, intoxication

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Rez de Jardin poster area

FULMINANT HEPATIC FAILURE SECONDARY TO DRUG INTAKE

José Valero-rolan (1), Iván Villar-mena (2), Inmaculada López-leiva (1), Cristina Fernández-figares (1), Rafael Infantes-ramos (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Hepatic failure, Drug, Hepatotoxicity

Case presentation:

A 35 years old woman who came to the emergency with epigastrium pain radiating to the right hypochondrium and hematemesis for some 30 minutes accompanied by dizziness and blurred vision for the past 10 hours and voiding symptoms com termometrada not feeling feverish. She refers intake for 3 days of large amounts of paracetamol, metamizol and Diazepam by continuous aches that "despair".

On arrival presents TA: 85/60 and 44 blood glucose. He fluid regimen with subsequent improvement. The analytical sample coagulation disorder. The urinalysis with high hematuria with high pyuria.

She is transferred to the observation area where monitors, we proceed to catheterization to control diuresis, fluid therapy is administered and urine analysis is requested with toxic (including acetaminophen) and proceeds to nasogastric tube to confirm hematemesis with negative result.

Personal history:

No known drug allergies. Moderate drinker. No smoking. Depressive syndrome in 8-year follow-up by primary care physician. Borderline Personality Disorder. Previous suicide attempts.

Medication: Lorazepam 1 mg, Alprazolam 0.25 mg, metamizol, paracetamol.

Physical examination:

TA: 85/60, HR: 78 bpm, O2 saturation: 98% (baseline). Glucose: 44 mg / dl, FR: 17 rpm. Conscious, oriented, collaborative, and perfused well hydrated, eupneic at rest. Glasgow 15/15 (looks drunk), bilateral mydriatic pupils reactive

Abdomen: soft and palpable, no masses or organ enlargements, right upper quadrant abdominal pain, left flank defense and hypogastrium with right upper quadrant, left fist percussion positive, negative rebound tenderness and a positive Murphy's sign.

Digital rectal ampulla remains empty without bleeding.

Cardiopulmonary auscultation, chest, limbs and neurological unaltered

Investigations:

ECG: sinus rhythm at 100 bpm, PR 0.14, not alt of repolarization or cardiac ischemia.

Analysis: CBC: Hb: 10.2, Hematocrit: 36; VCM: 69; Platelets: 303,000, Leukocyte 7820 (N; 82.6%, L: 10.4%), coagulation INR: 3.43, TP: 20%, APTT: 40.7; biochemistry Cr: 1.51, Na: 134, K: 3.8, Bit: 3.4, bid: 2.5, GOT: 8775; GPT: 4303; GGT: 373, FA: 155; Amylase 109, blood gas pH: 7.35, pCO2: 34.5, HCO3: 18.7, acetaminophen <2; Toxics BZD positive urine.

Urinalysis: leukocyturia + + + + + hematuria

Chest X-ray within normality.

ECO: no alterations in kidney, liver, portal, biliary and gallbladder. No free fluid in the peritoneal cavity, spleen and pancreas could not be assessed.

Evolution:

The patient shows signs of disease with persistent abdominal pain despite analgesic therapy, antibiotic therapy with ceftriaxone 2 grams intravenously and fluid. After analytical data, is discussed Digestive valuing the patient with suspected liver disease secondary to toxic medication.

The patient sample sleepiness and TA: 70/30 despite that increases fluid, FC: 110, BG 90 although IV administration of glucose without associated encephalopathy. Anuria in the early hours with worsening renal function and coagulopathy (TP: 13.2%, INR: 5.2). After review by Digestive, ICU admission is decided to present hepatorenal syndrome.

Sign in ICU with a diagnosis of acute liver failure secondary to toxic liver disease in relation to intake of Paracetamol. There needs blood transfusion for anemic syndrome, is given Vitamin K and N-acetylcysteine as an antidote. Presents metabolic acidosis and requesting extension of analytical hepatic markers, Cu, ceruloplasmin and Irregular antibodies.

At 18 hours after admission shows improvement in analytical liver enzymes, renal function and blood clotting so after stabilization and progressive clinical improvement and analytical proceed transfer to plant 78 hours after admission.

Conclusions:

The liver damage caused by medications and drugs of abuse is becoming a major public health problem that affects patients. The drug-induced liver injury is the most common cause of death from acute liver failure and accounts for about 10% of cases of acute liver failure worldwide. The recognition and diagnosis of hepatotoxicity is often difficult and long time due to the need to exclude numerous alternative causes liver damage.

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Rez de Jardin poster area

BILATERAL POSTERIOR CEREBRAL ARTERY OCCLUSION

Lobke Ruijs (1), Joyce Van Der Vegt (2)

1. emergency department, UMCN St Radboud, nijmegen, Netherlands

2. Neurology, UMCN St Radboud, Nijmegen, Netherlands

Corresponding author: lobkeruijs@hotmail.com

Keywords: altered consciousness, thalamic infarction, Bilateral posterior cerebral artery occlusion

Bilateral posterior cerebral artery occlusion can lead to thalamic infarction which can clinically manifest as an altered consciousness and mimic other etiologies.

Case

A 47 year old male patient was presented at the emergency department (ED) with a suspected subarachnoidal hemorrhage (SAH). The patient showed a sudden loss of consciousness followed by jerky movements of the extremities and slurred speech. There were no complaints preceding this episode. History revealed type II diabetes, alcohol dependency and depression respectively treated with insulin, citalopram and a benzodiazepine.

The initial Glasgow Coma Scale (GCS) on arrival at the ED was E3M5V3. He appeared agitated with convulsion/choreatic like movements of the extremities. Vital signs and bedside glucose level were normal. Pupils responded to light equally and there were no signs of meningism. Laboratory and tox screen results came back normal and there were no electrocardiographic abnormalities.

Cranial CT showed no signs of intracerebral hemorrhage. Laboratory and tox screen results came back normal. His agitation persisted and his GCS did not improve. Angio CT revealed a bilateral embolic occlusion of the posterior cerebral artery (PCA) (image 1). The patient was admitted to the intensive care unit (ICU) and anti-platelet therapy was started as secondary prevention. A subsequent cranial MRI showed evidence of bilateral thalamic and occipital ischemic infarction (Image 2). The patient was discharged to the neurological ward after three days with residual neurological symptoms consisting of cognitive impairment, apraxia, difficulty of speech and a mild left side hemiparesis.

Discussion

In patients presenting with altered consciousness always consider an ischemic event. Bilateral PCA infarction is rare and can have a presentation similar to a "top of the basilar" syndrome or embolic occlusion of the artery of Percheron. This can result in ischemia of the midbrain and thalamus bilaterally, as well as of the temporal and occipital lobes. 1,5,6,7

The posterior cerebral arteries (PCAs) arise from the top of the basilar artery. The PCAs supply parts of the midbrain, subthalamic nucleus, basal nucleus, thalamus, mesial inferior temporal lobe, and occipital and occipitoparietal cortices. The artery of Percheron is a rare anatomical variant where a single vessel arising from the proximal segment of one posterior cerebral artery supplies both medial thalami. Occlusion of the artery of Percheron results in bilateral medial thalamic infarction. 1,2,3,4 This variant was not seen in our patient. BPCAO can mimic subarachnoid hemorrhage, drug intoxication and encephalitis, prompt recognition is important and should guide further investigations.1 Acute thrombolysis is as useful after PCA infarctions as after anterior circulation

strokes. Mortality after PCA infarction is low, but long-term behavioral and cognitive deficits are underestimated.2

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Rez de Jardin poster area

MITOCHONDRIAL ENCEPHALOMYOPATHY, LACTIC ACIDOSIS AND STROKE-LIKE EPISODE LEADING TO RECURRENT SUPERIOR MESENTERIC ARTERY SYNDROME

Oh Young Kwon, Sung Yeol Ye, Seung Yun Kang, Han Sung Choi, Hoon Pyo Hong, Young Gwan Ko

Department of Emergency Medicine, Kyung Hee University Hospital, Seoul, Korea, (South) Republic of

Corresponding author: koy0004@hotmail.com

Keywords: Encephalomyopathy, Lactic acidosis, Superior mesenteric artery syndrome

BACKGROUND: Mitochondrial encephalomyopathy, lactic acidosis, and stroke-like events (MELAS) syndrome is a neurodegenerative disorder caused by a mitochondrial DNA point mutation. The common clinical features are seizure, gastrointestinal symptoms, stroke, altered consciousness, and hypertrophic cardiomyopathy. Superior mesenteric artery syndrome (SMAS) results from vascular compression of the duodenum caused by weight loss and intraabdominal compression. We report a case of MELAS syndrome leading to recurrent SMAS.

CASE: A 28-year-old female presented to the emergency department with a three-day history of vomiting and malaise. The patient suddenly developed right-sided hemiplegia both five and two years earlier, therefore confirmed MELAS syndrome. One year ago, she had a

SMAS, and was treated conservatively. She was alert, but cachexic (30 kg). Her vital signs included a body temperature of 38.6°C, blood pressure 90/60 mmHg, pulse rate 104 beats/min, respiratory rate 20/min. She complained nausea, vomiting, and diffuse abdominal pain. Physical examination revealed her abdomen was soft, but tenderness in epigastric region. Laboratory examinations revealed leukocytosis and elevated serum lactic acid (9.64 mmol/L). Arterial blood gas analysis showed mild metabolic acidosis with respiratory compensation, with a pH of 7.44, a PCO₂ of 27 mmHg, a PO₂ of 81 mmHg, actual bicarbonate of 21.7 mEq/L. An electrocardiogram revealed a sinus tachycardia with right ventricular hypertrophy. Chest radiograph and plain abdominal x-ray disclosed cardiomegaly and severe gastric dilatation with no gas in the rest of the intestinal tract, respectively. We inserted a nasogastric tube urgently, and an abdominal computed tomography (CT) scan was performed to investigate the possibility of small bowel obstruction. The CT scan showed a SMAS. The stomach and proximal parts of the duodenum were dilated because the second part of duodenum was compressed between the aorta and superior mesenteric artery. The finding of transthoracic echocardiography was severe left ventricular dysfunction (ejection fraction 28%) with decreased global left ventricular wall motion. She was admitted to the intensive care unit and received hydration and parenteral nutrition. Subsequently SMAS was improved quickly by conservative management but she was expired the heart and renal failure on hospital day 15.

DISCUSSION: Only a few cases with MELAS syndrome and gastrointestinal involvement have been reported. To our knowledge, there is just one report of adolescent patient with MELAS syndrome with SMAS. The suspicion of mitochondrial disease may be difficult in emergency department. Unknown cause of nausea and vomiting, lactic acidosis, and stroke-like events will be the clues to recognize MELAS syndrome.

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Rez de Jardin poster area

REMEMBERING WELLEN'S SYNDROME: THE IMPORTANCE OF RECOGNIZING AN SPECIFIC EKG PATTERN.

Tanilu Christie Grande Montalvo, Raúl Salmerón Ríos, Graciela Cueto González, Ángel Sánchez Garrido-Lestache, Sergio Salmerón Ríos

Emergency Department, General Hospital of Albacete, Albacete, Spain

Corresponding author: tanilu_grande@yahoo.com

Keywords: Wellens' Syndrome, Electrocardiography, Coronary artery disease

Wellens' syndrome refers to a subset of patients with history of anginal chest pain, who had specific precordial T-wave changes, which are associated with critical stenosis of the proximal left anterior descending (LAD) coronary artery.

Recognition of this EKG abnormality is of vital importance because this syndrome represents a preinfarction stage of coronary artery disease (CAD) that can potentially progresses to a fatal large anterior wall myocardial infarction.

A 58-year-old woman presented to the emergency department of the General Hospital of Albacete, for new onset of chest pain of 7 days duration. The pain was described as an intermittent pressure, moderate intensity, located retrosternally and radiating to neck and both shoulder. The pain was not clearly induced by physical activity. It was associated to cephalgia, but no another symptoms as diaphoresis, nausea, vomiting, or dysnea. We assigned a 6 points score obtained with the Geleijnse scale. The patient denied a history of hypertension, diabetes or hyperlipidemia, only she have a 35-pack-year smoking history. She denied also cardiovascular and pulmonary disease history.

She presented to the hospital because since the beginning of the day the retrosternal pain was increasing, but at the moment of the consult the patient was free of pain.

Physical examination was normal and about the vital signs only blood pressure was increasing (200/100), all the rest were normal.

In addition, Chest radiography should be performed and no abnormality were seen on it. The EKG obtained with pain showed normal sinus rhythm, normal axis, narrow QRS, ST-segment depression 0.5 mm in II, aVF and elevation of ST-segment <2 mm in V2 and biphasic T waves in V1-V3; in another EKG obtained without pain showed deeply inverted T waves in V1-V3, I and aVL, with biphasic T waves in V4. After that the EKG showed elevation of ST-segment 2 mm in V1-V3 with positivization of T wave.

Laboratory studies indicated myocardial injury, with Cardiac biomarkers minimally elevated.

Coronary angiography demonstrated critical stenosis of the proximal LAD (99%). The patient underwent successful after transluminal coronary angioplasty with conventional stent deployment (PROKINETIC of 3.50 mm * 20 mm).

Conclusion: We think it is very important for emergency physicians to recognize the criteria for Wellens' syndrome in order to appropriated management (urgent cardiac catheterization), and more over to avoid Stress testing that is not indicated in patients with this classic EKG pattern (T-wave changes), because it places them at high risk for acute anterior wall Myocardial infarct.

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Rez de Jardin poster area

CASE-REPORT: A PARTY WITH A BAD AFTERTASTE - THE IMPORTANCE OF SYSTEMETIC X-RAY REVIEWING-

Lauke Bisschops (1), Stacey Mans (2)

1. *Emergency department, Hospital Maasziekenhuis, Boxmeer, Netherlands*

2. *Emergency department, UMCN St. Radboud, Nijmegen, Netherlands*

Corresponding author: s.mans@seh.umcn.nl

Keywords: x ray, lungabscess, aspiration

Case-report:

A party with a bad aftertaste

A lung abscess is a cavitating lesion containing necrotic debris caused by microbial infection.²

Most patients present themselves with indolent symptoms; cough, fever, purulent sputum and dyspnea, that evolve over a period of weeks.

Lung abscesses mostly arise from aspiration and are caused by species of anaerobes that are present in the gingival crevices. Most common are; Peptostreptococcus, Prevotella, Bacteroides and Fusobacterium spp. Aerobic bacteria are less common. 1-3

Case

A 55-year old man presented with pain in his right flank. His medical history revealed a hypertension treated with antihypertensiva. He visited the emergency department 2 days ago with abdominal pains and loss of appetite. An elevated level of CRP was seen, nevertheless he was sent home without diagnosis or treatment. Now he experienced dyspnea, coughing with purulent foul smelling sputum. He smoked for several years and was familiar with a sputum producing cough which exacerbated 2 weeks ago after a party where he drank a reasonable amount of alcohol and had amnesia for a part of the evening.

On physical examination he did not appear sick. Vital signs: RR125/85mmHg, pulse 80bpm, T37.8°C, respiration rate 18p/min and pulse-oximetry 98% without oxygen. Chest excursions were symmetric, with normal percussion and normal breathing sounds. Further examination was unremarkable.

Extended laboratory results showed no abnormalities, despite CRP 280 mg/dl (normal < 5mg/dl) and leukocytes of 12x10⁹/l (normal 3,5- 11x10⁹/l).

Chest radiography, revealed a silhouette (on the lateral view: the vertebra become brighter instead of darker towards the distal part) suspect for pathology. Unfortunately this was missed during the first chest x-ray.

A CT scan was showed a lung abscess in the left lung.

The patient was admitted and treated with Amoxicillin. It evolved in an ephyema and a tube drain was needed for drainage. Cultures showed a S.Milleri. No dental focus was found or malignant cells with bronchoscopic diagnostics.

Discussion

Conditions contributing to formation of a lung abscess are: necrotizing tumors, septic emboli, vasculitis (Wegener's) but aspiration is the most common cause and (not surprisingly) alcoholism is the most common condition predisposing to lung abscesses.¹⁻⁵ Treatment is usually with antibiotics.

Conclusion

This patient developed a lung abscess probably caused by aspiration during altered consciousness after drinking. No other conditions which can contribute to the formation of a lung abscess were found.

Because the diagnosis is normally based primarily on x-ray systematic evaluation is of great importance!

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Rez de Jardin poster area

CASE-REPORT: GARROTTER'S THROAT

Stacey Mans (1)

1. Emergency department, UMCN St. Radboud, Nijmegen, Netherlands

Corresponding author: s.mans@seh.umcn.nl

Keywords: garrotter's throat hyoid fracture, airway, trauma

Case-report: Garrotter's throat

Hyoid bone fractures, or Garrotter's Throat, are very rare, accounting for only 0.002% of all fractures.¹ The rarity of this fracture is likely due to the protected location of the larynx, with the mandible hanging in a superior and anterior position and the rigid cervical spine posterior. Fracture of the hyoid is typically associated with strangulation. Traumatic cases mostly include mechanisms of blunt trauma, hyperextension, gunshot, motor vehicle accidents, cervical trauma. 1-9 But there are also cases reported of a fracture caused by induced vomiting. 10

Case

A 63-year old man presented in the emergency department an hour after physical abuse. That evening he went into a

bar and drank 2 bottles of wine. He told he was beaten in his face, kicked on the right side of his thorax, coccyx and his throat. Further he complained of pain with swallowing and a change of his voice which he wasn't able to specify.

On physical examination the patient's airway was intact with minimal swelling and no difficulty of breathing. No expanding hematoma, pulsating mass, crepitus, or subcutaneous air was noted. He did have a mild excoriation on his throat and an hoarse voice, an alcoholic foetor, Vital signs were: RR 130/80 mmHg, pulse 70 bpm, pulse oximetry 100% without oxygen.

Trauma screening diagnostics showed:

X-thorax: no traumatic injury

FAST: absence of signs for haemoperitoneum

X-pelvis: no traumatic injury

CT-CWK-thorax-abdomen: a fractured hyoid and thyroid, no dissection of the carotids.

Initially he was nebulized with adrenaline and received prednisone intravenous to prevent swelling. Five hours after the trauma the patient was intubated and admitted.

Discussion

Mostly the primary presenting sign of a hyoid fracture is neckpain whorsening with talking, nose blowing, coughing and swallowing. 1,4,5 Hoarsness is also reported mostly in combination with dyspnoe, stridor and crepitus.¹ If the neck is hyperextended the hyoid becomes vulnerable to fracture because it loses some anatomic protection.⁸ Furthermore it is often associated with injuries nearby like; to the mandible, cervical spine, larynx, and pharynx.^{2,6-9} These related injuries tend to be more urgent because they compromise the airway.

Conclusion

These fractures potentially lead to fatal complications. The airway can be compromised with blood, debris or edema.^{2,7,9} This patient had a hyoid fracture because of direct blunt trauma to the neck (anterior). Even though after 5 hours edema was still mild the decision was made to secure the airway by intubation.

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Rez de Jardin poster area

BRUISING AND BLEEDING MIMICKERS OF PHYSICAL ABUSE: A CASE REPORT.

Ilenia Mezzocolli (1), Graziana Casacanditella (2), Caterina Compostella (2), Chiara Sandonà (2), Gianna Vettore (1), Franco Tosato (1)

1. Servizio di Pronto Soccorso e Accettazione, Azienda Ospedaliera di

Padova, Padova, Italy

2. Scuola di Specializzazione in Medicina d'Emergenza-Urgenza, Università

degli Studi di Padova, Padova, Italy

Corresponding author: caterina.compostella@gmail.com

Keywords: physical abuse, traditional medicine, bruises

Introduction

Physical abuse on women, although a worldwide problem, is frequently underdiagnosed and underestimated. Nevertheless, the lack of experience in recognizing signs of abuse can result in overdiagnosis. Both situations can be ruinous for patients and their relatives. Physicians must become skilled in recognizing even minor signs of abuse and to interpret evidence of abuse even in difficult situations. It is mandatory to be aware of mimickers when confronted with physical examination that may suggest abuse.

Case report

A chinese woman aged 44, reported to the local Emergency Department complaining a long history of fever, haematuria and right flank pain. Neither the patient nor her relative accompanying her spoke any language other than chinese making it difficult to collect medical history. During physical examination we noticed major skin pallor and multiple linear bruises symmetrically distributed with a regular pattern on the patient's back and arms which appeared consistent with slashes. When asked on the aetiology of these skin lesions the patient wasn't able to give any explanation. Suspecting physical abuse a forensic examination was requested to the local Institute of Legal Medicine. The forensics agreed with the suspicious nature for physical abuse of the bruises. Meantime, lab tests performed in the ED demonstrated a haemoglobin level of 3 gr/dl. The patient firmly denied abuse. The cultural intermediary later recognized the skin lesions as a traditional Chinese remedy known as "Guasha", not free of side effects, which is frequently performed to "wash away" fever in rural areas of China. Guasha consists in applying on bare skin specific jars previously heated with matches or cottonwool soaked in alcohol to create vacuum thus causing a sucking effect which

“sucks away pain”. A CT scan explained anemia to be due to a kidney neoplasm which caused haematuria.

The patient underwent blood transfusions, was admitted to the urological ward and underwent successful surgery.

Conclusions

A great range of traditional medical practices has the potential to be mistaken for physical abuse.

Furthermore, it shouldn't be forgotten that bruises secondary to physical abuse may mimic many skin diseases both primitive and secondary to systemic disorders which must be considered in differential diagnosis. Especially in these cases a multidisciplinary collaboration becomes essential, in first place with forensics and cultural intermediaries, to prevent both underdiagnosis and misdiagnosing physical abuse. As the number of people who practice traditional Chinese medicine and other forms of alternative medicine increases in the western world the medical community must familiarize with these practices to prevent social and legal conflicts that may arise from a misdiagnose of abuse.

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Rez de Jardin poster area

ENDOMETRIOSIS: INFREQUENT CAUSE OF THORACIC PAIN IN THE EMERGENCY. BY THE WAY OF A CASE.

López Galindo Maria de la Peña, Condón Ana Isabel, Millan Alberto, Sierra Beatriz, Escolar Teresa, Visiedo Sara

Servicio de Urgencias, Hospital Clinico Universitario "Lozano Blesa". Zaragoza, Spain

Corresponding author: mplopez@salud.aragon.es

Keywords: endometriosis., thoracic pain, hemothorax catamenial

The thoracic not traumatic pain is a motive of frequent consultation in emergency departments (SUH) and, in some urban areas, can mean up to 11, 9% of urgent medical consultations.

His etiology is very varied like his forecast and gravity. This generates a great worry in the patient who will require an immediate evaluation of a doctor, who has to realize a differential correct diagnosis in short time and with the material available resources in every Center of Urgencies.

It is defined as a thoracic sharp pain to any culminating sensation located in the area between the diaphragm and the base of the neck, of recent restoration requiring rapid and precise diagnosis before the possibility of deriving urgent surgical medical treatment. Is essential to differentiate those causes of thoracic pain that can put in danger the life of the patient.

Of his form we can differentiate between:

1. POTENTIALLY MORTAL CAUSES SHORTLY TIME:

- Sharp heart attack of myocardium.
- Unstable angina.
- Embolism and pulmonary heart attack.
- Dissecting aortic aneurysm.
- Pericarditis.
- Acute mediastinitis.
- Pneumothorax spontaneous.
- Pneumonia.

-Abdominal processes: cholecystitis, pancreatitis, perforation of viscerohueca.

2. NOT MORTAL CAUSES:

- Pain osteomuscular.
- Psicogeno.
- Herpes zoster.

The anamnesis and the physical exploration are the essential tools in the diagnosis of the thoracic pain. There are very small the patients who report his pain of a dear form. It is

necessary to investigate on the form of appearance, location, intensity that doesn't correspond in many occasions with the severity of the process, character, irradiation, reasons precipitating, maneuvers that modify it increasing it or decreasing it, associate symptoms

(difficulty in breathing, cough, nausea, thrubs).

The endometriosis is the unnormal growth of fabric endometrial out of the uterine cavity. The pelvic endometriosis extra can appear in more of 12% of the women with endometriosis.

The thoracic endometriosis understands four clinical entities recognized well that they include:

- 1) The pneumothorax catamenial
 - 2) The hemothorax catamenial
 - 3) The hemoptysis catamenial
 - and 4) endometriotic pulmonary nodules.
- We present the case of a 42 year-old patient with precedents of coronary carrying disease of a stent, presented to the emergency for thoracic pain in hemithorax. Between his personal precedents they emphasize also infertility for endometriosis ovarian.

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Rez de Jardin poster area

TRACHEOINNOMINATE ARTERY FISTULA: EARLY DIAGNOSES IS CRITICAL

Carson Harris (1), Wendy Woster (2)

1. *Emergency medicine, Regions Hospital, Saint Paul, United States*
2. *Emergency Medicine, Regions hospital, saint Paul, United States*

Corresponding author: harri037@umn.edu

Keywords: tracheoinnominate artery fistula, tracheostomy, hemorrhage

Introduction: Patients with tracheostomy are at risk of severe hemorrhage from developing tracheo-innominate artery fistula (TIF).

Case Report: We present a case of a 30-year-old male with Duchenne muscular dystrophy arriving to the emergency department (ED) with history of bleeding from his tracheostomy site for 2-3 hours. Two days prior he had his tracheostomy tube replaced. On arrival the bleeding has decreased and no bleeding was seen by ED providers. It was elected to monitor the patient for 2 hours in the department and reassess. After approximately 1.5 hours, the nurse attending the patient noted brisk bleeding. Attempts were made to compress the bleeding site by replacing the current tracheostomy tube with a larger tube. endoscopic assessment was attempted but difficult due to excessive blood. It became increasingly difficult to ventilate the patient. He subsequently had a cardiac arrest, but was resuscitated with chest compressions, fluids, amiodarone, sodium bicarbonate and blood products. During resuscitation, the tracheostomy tube was replaced with a larger endotracheal tube, the balloon was inflated and pulled cephalad in an effort to tamponade the bleeding. ENT and cardiothoracic surgery was called to assist with acute management. After stabilization in the ED, computerized tomography with angiography was obtained prior to transfer to the operating suite. Via median sternotomy the TIF was repaired with a gore-tex graft and tracheal defect repaired with SCM muscle flap. During the procedure, the patient had a second cardiac arrest requiring open cardiac massage. He was transferred from the OR to the intensive care unit where he was noted to have seizure activity, developed torsades des pointes, and he never regained any meaningful neurologic function. Computerized tomography of the head revealed diffuse anoxic injury. He required vasopressor to maintain mean arterial pressure. the family elected to provide comfort care only and the patient died on hospital day 2.

Discussion: TIF is a critical complication of tracheostomy and is oftentimes fatal. It can cause severe bleeding and airway compromise. Early recognition and intervention is crucial in the management of these cases presenting to the ED. Although the occurrence is generally reported at less than 1 percent, the mortality approaches 100 percent. approximately 72 percent of TIF occurs within the first 3 weeks post post-tracheostomy. The initial sentinel bleed is typically mild and followed by massive hemorrhage.

Pressure necrosis of the anterior tracheal wall by the tracheostomy cuff or tip can lead to erosion of the trachea and innominate artery. Other factors that may contribute to

the formation of the fistula include steroids weakening the endotracheal mucosa, and hypotension allowing a discrepancy in pressure exerted by the tube cuff on the mucosa. Temporizing management in the emergency department include hyperinflation of the tracheostomy or an endotracheal tube cuff or application of digital pressure to the bleeding area. Early intervention by ENT and cardiothoracic surgery is highly recommended for endovascular and surgical management.

Conclusion: TIF is a rare but rapidly fatal complication of the tracheostomy patient. Emergency physicians must be aware of this diagnosis and act quickly to confirm and treat such patients with bleeding post tracheostomy tube placement.

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Rez de Jardin poster area

A CASE OF ATTENUATED TETANUS IN AN URBAN ED

Rebecca Liggin (1)

1. *Pediatrics and Emergency Medicine, University of Arkansas for Medical Sciences, Little Rock, United States*

Corresponding author: ligginrebeccal@uams.edu

Keywords: Tetanus, Attenuated, Resource limitation

Case of attenuated tetanus in an urban emergency department:

Case:

Our patient is a 37 yr old white female who presented to our ED with a sudden onset of muscle spasm of the jaw, difficulty swallowing and breathing, and slurred speech. She appeared agitated and in distress secondary to difficulty breathing associated with the facial muscle spasms. Per her husband the episodes were intermittent lasting 5-15 minutes with resolution between spasms that lasted 20-30. She had a recent history of purulent otitis media that had been treated with antibiotics, a burn to the leg, and an untreated cut to the leg. She was also homeless and living in a tent under a bridge with her husband. She had received her initial immunizations as an infant and possibly one round of booster vaccinations but no other immunizations to her knowledge.

Patient Course:

Our patient was given valium and morphine in the ED for the spasms and pain control. She was given a tetanus vaccination and 5000 U of TIG was ordered. Unfortunately as she was the 2nd patient with tetanus to present to our hospital in less than 2 weeks we only were able to obtain 1250 U. She was admitted to the ICU after Vancomycin and Flagyl were initiated IV. The remainder of the TIG was obtained from surrounding hospitals. This unfortunately depleted the supply of TIG for the allhospital in central Arkansas until supplies could be replenished. The patient remained in the ICU overnight and continued to have intermittent episodes of spasms but with decreasing frequency. She was transferred to the floor the following day the discharged home several days later in good condition. Since the family was homeless she was lost to follow up after discharge.

Discussion:

Because of widespread immunization tetanus is rare in the US, however there are still between 50-100 cases per year. Tetanus is a clinical diagnosis and is based on symptoms and exposure history since there are no confirmatory laboratory tests. Classic symptoms include spasms that occur in a descending pattern usually starting in the face/jaw with trismus or lockjaw and then facial spasms or risus sardonicus. Spasms usually last several minutes with periods of relaxation in between and can continue up to 4 weeks and recovery can take months. Classic body arching spasms can also be seen and are called opisthotonos.

Patients may also be febrile and tachycardic on presentation. Cephalic tetanus is a rare form involving the cranial nerves and is secondary to otitis media from *C. tetani*. Starting treatment quickly with the tetanus vaccine as well as tetanus immune globulin is important. The recommended dose of TIG is 3000-5000 U. It is also recommended to start patients on broad spectrum antibiotics such as vancomycin and flagyl and admit to the ICU because of the risk of respiratory failure. There are many potential sources of tetanus prone wounds including burns, surgical wounds, otitis media, contaminated wounds, crush wounds, dental infections, and others. Attenuated tetanus is a form of tetanus that occurs in partially immunized patients or patients that received their initial rounds of immunization but do not receive booster vaccinations. Patients present with milder symptoms and tend to have a shorter course if treated. The case fatality rate is also lower, however patients still require treatment with both vaccine and TIG. These patients are also easily missed if there is not a high index of suspicion since their symptoms tend to be milder.

Conclusion:

Tetanus remains a problem in the U.S. and in other urban environments despite immunization and attenuated tetanus can be a particular problem since it is an easy diagnosis to miss. Tetanus vaccine and TIG remain the mainstay of therapy but even one or two cases can rapidly deplete most hospital resources if you are not prepared. Keeping a high index of suspicion for these cases and insuring that your hospital has adequate supplies of TIG is important to assuring appropriate care for these patients.

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Rez de Jardin poster area

BILIARY STENT WITH PERICARDIAL PENETRATION AND MIGRATION VIA LATERAL SEGMENT OF LIVER, RESULTING IN BACTERIAL PERICARDITIS

Ming Ta Chiu (1)

1. Emergency department, Chang Gung Memorial hospital, Tao-yuan, Taiwan

Corresponding author: miltonch777@yahoo.com.tw

Keywords: biliary stent migration, pericardial penetration, pericarditis

To our knowledge, this is the first case of extra-abdominal, specifically pericardial involvement of biliary stent associated complication ever been reported.

CASE REPORT

A 80-year-old female patient had undergone ERBD due to cholidocolithiasis associated obstructive cholangitis on 2011-08-10 at another hospital. The patient presented to our ER with 2 days of progressive chest tightness. Chilly sensation was also complained but there was no fever recorded at home, no abdominal pain, no back radiation pain or orthopnea. Chest film revealed marked cardiomegaly without active lung lesion. Laboratory tests

showed significant leukocytosis (WBC: 27.5, 1000/uL), elevated C-reactive protein (210.52 mg/L, normal value <5 mg/L), hyperbilirubinemia (Total bilirubin: 3 mg/dL), normal Troponin-I (0.04 ng/mL) and normal limit of liver function enzyme (GOT: 29U/L). Owing to hypotensive episode with the suspicion of septic shock status, emergency department (ED), a computed tomography (CT) of chest with contrast medium administration was done. CT-scan was reported as a migration plastic catheter presenting one tip penetrating from left lobe of liver to pericardium, resulting in pericardial effusion and pericarditis change (Fig 1-3). Dilated IHDs with small IHD stones and some air collection in the atrophic left lobe of liver, favoring chronic cholangitis with suspicious of pyobilia was also reported by CT-scan.

General and cardiovascular surgeons were consulted and surgical intervention suggested. The OP findings included severe adhesion and odor at left upper abdominal quadrant, atrophic lateral segment of liver, dilated CBD (2 cm), distended GB, plastic biliary prostheses tip abutting or penetrating pericardium and 200ml serosanguinous pericardial effusions aspirated. Lateral segmentectomy of liver, Cholecystectomy, Choledocholithotomy with T-tube insertion and pericardiectomy were performed. The cultures of pericardial effusions yield *E.coli* toward aerobic culture and *Peptostreptococcus* sp over anaerobic culture. The patient was discharged after 3 weeks of parental antibiotics without further eventful admission course.

DISCUSSION

Insertion of biliary endoprotheses has become an increasingly popular, well-established and first-line non-surgical procedure toward a wide variety of obstructive biliary or pancreatic disorders. The procedure is generally safe and minimally invasive but complications such as cholangitis, biliary stent occlusions, hemorrhage, duodenal perforation, pancreatitis or biliary stent migration have been reported to range from 8% to 10%³⁻⁶. Biliary stent migration, either proximal or distal, had been reported in about 5-10% among biliary stenting patients⁵⁻⁷. As to biliary stent migration associated complications, serial reports could be classified into categories of penetration, intestinal obstruction or perforation.^{2,3,8-13} Among them, there was no available report regarding extra-abdominal involvement on our best knowledge.

With pericardial involvement of the migrated stent, the patient didn't show up with overt gastrointestinal symptoms such as abdominal pain, vomiting, jaundice or dyspepsia. Such chest discomforts as the patient mentioned made physician focus primarily on cardiovascular or respiratory etiology for tentative diagnosis initially. The amount of the reactive pericardial effusions though not resulted in cardiac tamponade, but the septic nature initiates the systemic inflammatory response. Furthermore the patient developed septic shock which necessitates aggressive diagnostic facility as CT scan and figure out the final diagnosis.

The mechanism of such migrating of plastic biliary stent with penetrating through diaphragm and abutting pericardium remains uncertain due to no previously report available. Old age, necrotic change of lateral segment of liver, improper size of biliary stent or increased intra-

abdominal pressure may contribute to the serious complication.

The case illustrates a rare but severe complication of biliary endoprosthesis placement, and could remind physicians that awareness of the history or possible relationship of the procedure to other systemic disease cannot be overemphasized. In addition, more frequent follow up after biliary stent application especially in old age or other comorbidities should be necessary.

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ISOLATED MULTIPLE TRANSVERSE PROCESS FRACTURES OF FOUR CONSECUTIVE LUMBAR VERTEBRAS

Omer Faruk Celik (1), Haldun Akoglu (1), Cigdem Ozpolat (1), Serkan Eroglu (1), Ozge Ecmel Onur (1), Arzu Denizbasi (1)

1. Department of Emergency Medicine, Marmara University, Istanbul, Turkey

Corresponding author: drhaldun@gmail.com

Keywords: tranverse process fracture, abdominal injury, falls

Introduction

Lumbar vertebral TPF (transverse process fracture) are commonly thought of as minor injuries compared with body, pedicle and lamina fractures. Lumbar vertebral TPF usually occur during high-energy traumas and must be evaluated extensively as they may associate with serious other visceral injuries. High number of consecutive lumbar TPFs are associated with increased concomitant injuries.

Case

A thirty years-old male presented with the complaint of back pain after a fall while working at a height of 3 metres. He did not mention any amnesia after trauma. There was no history of vomiting, seizures, abdominal pain, hematuria or ear and nasal bleed. On examination, there was no pallor, icterus or cyanosis. Pulse was 80 bpm, blood pressure was 132/70 mm/Hg and respiratory rate was 16 breaths/min. The heart and respiratory sounds were also normal. Abdomen was soft and non-tender. Bowel sounds were normally heard. The patient was conscious, alert and oriented to time, place and person. Cranial nerve examination was normal. Motor power was normal in all four limbs and there were no sensory deficits, and plantar responses were flexor. The patient could pass urine normally. There was local pain over the back on right side. FAST USG was negative for any intra-abdominal pathology. Urine analysis showed no microscopic hematuria. Spinal CT was performed. Spinal CT showed unilateral transverse process fractures thru L1 to L4. Then to investigate associated injuries abdominal CT was performed and no visceral injuries were recognized.

Discussion and Conclusion

With the widespread use of whole-body CT scanning in trauma patients, the isolated transverse process fractures

has been increasingly recognized. TPF require careful pain management and benefit by early mobilization. Yet, where no other vertebral fracture is seen on an adequate screening CT scan, investigation may reasonably end. Further imaging and consultations with spine services waste scarce resources, and lead to prolonged log-roll precautions, which delay mobilization and are potentially deleterious to overall patient care.

However, many clinical research suggest that lumbar TPFs should not be thought of as minor injuries but regarded as a significant marker for abdominal organ injuries and should alert the doctor caring for the injured patient of the high probability of these injuries. However, multilevel TPFs more than 3 levels are extremely rare and reported rarely.

In our case, patient had multilevel TPF (4 to be exact) and to investigate associated intraabdominal injury abdominal CT with IV contrast was performed. Patient received contrast material and exposed to further radiation. Abdominal CT increased both cost and radiation exposure however, did not reveal any further injuries, as mentioned in previous studies.

In conclusion, TPFs, even they include multiple consecutive levels, are not associated with significant injury most of the time and conservative approach with USG and clinical observation may decrease radiation and contrast exposure as well as costs.

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Rez de Jardin poster area

CASE REPORT: MORE THAN JUST EUPHORIA FROM ECSTASY – ONE IS TOO MUCH!

Jen Heng Pek (1), Juliana Poh (1), Fazlur Rehman Jaufeerally (2)

1. Emergency Department, Singapore General Hospital, Singapore, Singapore

2. Department of Internal Medicine, Singapore General Hospital, Singapore, Singapore

Corresponding author: jenheng_@hotmail.com

Keywords: Ecstasy, Hyponatremia, Rhabdomyolysis

Objectives: The use of recreation drugs is tightly controlled within Singapore due to strict legislation. However, the Emergency Department occasionally receives patients presenting with symptoms post ingestion. This case report highlights the issues related to abuse of 3,4-methylenedioxy-N-methylamphetamine (MDMA), or commonly known as ecstasy. Ecstasy toxicity, particularly the pathophysiology and treatment of ecstasy-induced hyponatremia and rhabdomyolysis, are discussed.

Methods: Case report.

Results: 28-year-old Chinese male presented to the Emergency Department following an ingestion of 1 ecstasy pill with a chief complaint of generalised lethargy associated with nausea and vomiting. During observation in the department, the patient had a generalised tonic clonic seizure lasting 90 seconds which was aborted with

intravenous diazepam. He was found to have a serum sodium level of 120mmol/L, a creatine kinase level of >36000 U/L and serum creatinine of 61 umol/L.

Conclusions: Ecstasy can result in feelings of euphoria, emotional empathy, and increased energy. But these effects come at a significant risk for complications. A single pill is all that is necessary to put an individual at risk for life-threatening complications. In our patient, it has resulted in symptomatic hyponatremia and rhabdomyolysis. Emergency physicians should be aware of ecstasy-related complications to decrease the potential mortality that is associated with this drug.

Po-122

Rez de Jardin poster area

ABDOMINAL WALL ENDOMETRIOSIS: CASE REPORT AND REVIEW OF LITERATURE

Jafar Malmir (1), Mohammad Davood Sharifi (2)

1. Emergency medicine department, Mashhad medical university, Mashhad, Islamic republic of Iran

2. Emergency department, Imam Reza Hospital, Mashhad university of medical sciences, Mashhad, Islamic Republic of Iran

Corresponding author: malmirj901@mums.ac.ir

Keywords: abdominal wall, endometriosis, rectus abdominis muscle

The abdominal wall is an uncommon site of extra pelvic endometriosis, which usually develops in a previous surgical scar and it should be considered in the differential diagnosis of any abdominal swelling. Endometriosis involving the rectus abdominis muscle is a very rare event and its rarity explains the incomplete nature of the reports in the literature. The true incidence of endometriosis is unknown, but it is estimated that 15 percent of females have some degree of the disease [1].

We report the case whom came to our observation, a woman with endometriosis of the abdominal wall.

The diagnosis was made by the histopathological analysis of the specimens.

Key words: abdominal wall, endometriosis, rectus abdominis muscle, surgery.

Po-123

Rez de Jardin poster area

PHEOCHROMOCYTOMA. THE GREAT MIMIC.

Teresa Escolar Martínez-Berganza (1), Daniel Sáenz Abad (1), Ana Condón Abanto (1), Sara Visiedo Sanchez (1), Maria de la Peña Lopez Galindo (1), Lourdes Martínez- Berganza Asensio (2), María Sanchez Ballestín (3), Miguel Rivas Jimenez (1)

1. Emergency Department, Hospital Clínico Lozano Blesa, Zaragoza, Spain

2. Dirección Asistencial Este. Atención Primaria. Area 3, Centro de Salud Nuestra Sra del Pilar, Madrid, Spain

3. Servicio de Radiología, Hospital Clínico Lozano Blesa, Zaragoza, Spain

Corresponding author: teresaescolar@yahoo.es

Keywords: Pheochromocytom, adrenal hemorrhage, abdominal pain

Pheochromocytoma is a rare catecholamine- secreting tumor of adrenal glands. It is referred to as the great mimic. We present the case of a 50 year-old man who was admitted with a 6 hours history of intense right sided flank pain, diaphoresis, nausea, vomits and occipital headache. He had no significant medical history. Physical examination on admission discloses blood pressure 201/117 and heart rate 110 beats/ min. The patient was conscious, tachypneic, with deterioration in general condition. Abdomen with tenderness on general palpation, more marked in the right side but without signs of peritonism. Peripheral pulses were symmetric.

The electrocardiogram showed sinus tachycardia with sings of inferolateral myocardial ischemia. Laboratory findings showed elevated white cells count and troponin level and serum hyperglycemia.

Since acute coronary syndrome due to hypertensive emergency versus acute aortic syndrome were suspected, electrocardiographic monitoring was accompanied by high-flow oxygen therapy and intravenous nitroglycerin perfusion.

He remained hemodynamically unstable, with persistence of symptoms and sings, despite the treatment. For that reason we considered pheochromocytoma as another differential diagnosis and

a computed tomography scan (CT) of abdomen was performed. It revealed a right adrenal haemorrhage. On the basis of these results a more conclusive diagnosis of pheochromocytoma was suspected and alpha- adrenergic blockers were added to his treatment as well as intravenous nitroglycerin perfusion was removed from it. The patient was transferred to a high dependency unit.

Subsequent investigation revealed an isolated elevation of urine catecholamine concentrations and an iodine- 123 metaiodobenzylguanidine scan (I123 MIBG) demonstrated increased uptake in the right adrenal gland, which confirmed the suspicion of pheochromocytoma.

The clinical status of the patient improved. In a few days, once blood pressure was controlled, the patient was transitioned to oral alpha- blockade agents and he was discharged home on oral antihypertensive agents. He had elective removal of pheochromocytoma (with laparoscopic intervention) 4 weeks later without any complications, at which time antihypertensives were withdrawn.

Classic presentation of pheochromocytoma includes headache, sweating and tachycardia, also hypertension, from oversecretion of catecholamines, which can lead to hypertensive urgency and emergency or induces chest pain and segmental myocardial dysfunction mimicking an ischemic acute episode.

Although reported as a rare presentation, spontaneous haemorrhage within a pheochromocytoma can present as an abdominal catastrophe, because there is a high mortality associated with the undertaking of an operative intervention in the face of an unrecognized functional pheochromocytoma.

To facilitate diagnosis, catecholamines determination has the highest sensitivity and specificity. However, false positive results are reported, being described in conjunction with the use of drugs such as labetalol together with foods such as fruits and nuts. Acute illness can also elevate urine catecholamine concentrations. In addition, catecholamines determination is not available in our emergency department.

Once biochemical evidence of pheochromocytoma is obtained, imaging for localization should be undertaken to guide surgical resection, which is mandatory.

CT and magnetic resonance imaging (MRI) provides high sensitivity for lesion detection, though poor specificity. Alternative imaging modalities such as I123 or I131 MIBG scintigraphy or positron emission tomography (PET) may be utilized when CT or MRI fails to reveal the lesion or if malignancy is suspected.

Elective surgery, with laparoscopic intervention, is the ideal option, accompanied by preoperative medical treatment. Emergent or urgent surgical intervention supposes a mortality of 25% and it may be considered in refractory cases to maximal medical management.

If the tumor is completely removed, postoperative alpha-blockade is not typically necessary.

We were faced with a set of circumstances which raised suspicion for pheochromocytoma and the presence of adrenal haemorrhage supported our proposal, which was confirmed by catecholamines determination and the result of I123 MIBG scan. An elective removal of pheochromocytoma was performed, after hemodynamic stabilization and adequate medical pre-treatment, and the patient's symptoms disappeared completely

Po-124

Rez de Jardin poster area

HYPOTHERMIA AND PROTECTION FROM PARACETAMOL-INDUCED LIVER INJURY

Rebecca Whysall (1), Kirstine Coomer (2)

1. Intensive Care Unit, Royal Derby Hospital, Derby, United Kingdom
2. Emergency Department, Queens Medical Centre, Nottingham, United Kingdom

Corresponding author: rwhysall@doctors.org.uk

Keywords: paracetamol, hypothermia, poisoning

A 66 year old man presented to hospital, unconscious, after being found outside in the woods. In his car were unopened packs of 120 paracetamol and 56 citalopram (20mg).

His temperature on admission was 24.6 degrees C, he was cardiovascularly stable and had saturations of 99%. A blood gas showed a pH of <6.8, pCO₂ 3.6, pO₂ 40.5, K 5.5, Na 138,

Cl 101, Ca 1.35, Glucose 5.7, Lactate 16.1. The base excess/HCO₃ etc were incalculable.

His bloods showed an acute kidney injury (Ur 9.5, Creat 195, eGFR 31) and his LFT's were normal with the exception of an ALT of 164. His haemoglobin was 16.1 with a WCC of 16.41 and his coagulation screen was normal.

He was intubated and taken to ITU. Rewarming at 0.5 degrees C per hour was started. His paracetamol level was rung through to the unit at 195mg/l and N-acetylcysteine therapy was begun. We later found out that this level was taken 26 hours post ingestion, which implied a very high risk of hepatocellular damage as well as fulminant liver failure, even if treated with n-acetylcysteine.

His ALT reached a peak of 2770 48 hours after presentation (74 hours post ingestion) and returned to near normal within 7 days. His coagulation screen remained normal throughout the clinical course. On waking he admitted taking 87 paracetamol with ethanol.

This remarkable clinical course indicates a possible role for therapeutically induced hypothermia in the management of severe paracetamol overdose, particularly in the group of patients who seek medical attention some hours after ingestion of the drug and who therefore remain at high risk, despite treatment with n-acetylcysteine.

Po-125

Rez de Jardin poster area

POINT-OF-CARE ULTRASOUND IN THE DIAGNOSIS OF NECROTIZING FASCIITIS

R. Eleanor Anderson (1), Elke Platz (2), Heikki Nikkanen (3)

1. Department of Emergency Medicine, Brigham and Women's Hospital, Boston, United States
2. Department of Emergency Medicine, Brigham and Women's Hospital, Boston, United States
3. Consulting, Beyond Triage, Boston, United States

Corresponding author: randerson3@partners.org

Keywords: necrotizing fasciitis, ultrasound, diagnosis

A 33 year-old male presented to the Emergency Department (ED) with four days of increasing redness, tenderness and edema to the left antecubital fossa and fever. Four days prior, he had injected cocaine and vitamin B12 into subcutaneous tissue.

On arrival, he was alert and in mild distress with a temperature of 40 degrees Celsius, pulse of 130, blood pressure of 122/72, respiratory rate of 18, and oxygen saturation of 100% on room air. He was noted to have a grossly edematous, erythematous and tender left arm. A puncture in the antecubital fossa was draining pus. Axillary lymphadenopathy and erythema extended to the left side of the neck.

Laboratory analysis revealed a white blood cell count of 19,000 cells/mm³ and broad-spectrum antibiotics were initiated. A point of care ultrasound (POCUS) was performed by emergency physicians (EPs) and

demonstrated a complex, subcutaneous fluid collection with multiple gas bubbles within the fluid, seen as bright echogenic foci, concerning for necrotizing fasciitis (NF). Urgent surgical evaluation and computed tomography (CT) were pursued, the latter confirming EUS findings of NF. The patient was taken emergently to the Operating Room for wide débridement.

His recovery was complicated by a second débridement and split thickness skin grafting, as well as narcotic dependence. At four months he had complete wound healing and his narcotic prescription was refilled for the last time.

NF is a rare however rapidly progressive, life-threatening disease with a 30%-70% mortality. (1,2). Early identification and surgical intervention is of utmost importance to decrease morbidity and improve patient survival (3). Historically, EPs have relied on clinical exam when these critically ill patients present, as the delay associated with CT or magnetic resonance imaging (MRI) may prove unacceptable.

Initial signs and symptoms of NF include swelling, erythema, pain, and tachycardia. With progression, edema, pain out of proportion to exam, blisters, and crepitus may be present. While these findings are fairly specific for NF, their sensitivity is low, and they are present in only 10%–40% of patients.(3) Clinical exam may be further limited by few physical findings in early disease, necessitating a high degree of clinical suspicion and reliance on imaging.

POCUS provides a quick and reliable means for early detection of this life threatening disease. POCUS findings of NF include fascial irregularity, abnormal fluid collections along the fascial plane >4mm, thickening of the subcutaneous tissue and/or fascia, and gas within the subcutaneous tissues (4,5). The sensitivity and specificity of EUS for detecting NF has been reported at 88.2% and 93.3% respectively while a recent study reported CT to be 100% sensitive and 81% specific (6). This suggests that a negative CT can reliably exclude NF while a positive result identifies the disease with high likelihood. Even so, the rapid results provided by POCUS render it an ideal test for the early recognition of NF in critically ill patients. This is underlined in a recent case series evaluating ED patients with clinically suspected NF, found to have positive POCUS findings for NF, the latter facilitating expedited surgical intervention (7). Though limited by sample size, this paper illustrates a potential role for POCUS as a primary imaging modality in suspected cases of NF, obviating the need for CT.

As demonstrated by this case and literature review, POCUS is useful in suspected cases of NF. Proficiency in it and familiarity with POCUS findings of NF are important tools in the armamentarium of the practicing EP.

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Po-126

Rez de Jardin poster area

TREATMENT OF A DECOMPRESSION INJURY: A LEAP INTO THE DEEP END ? A CASE REPORT AND LITERATURE REVIEW.

Bram Dewulf (1), Nicolas Müller (1), Marc D'hooghe (2), Carine Vandycke (1), Marc Bourgeois (1)

1. *Department of Anesthesiology and Critical Care Medicine, AZ Sint-Jan Brugge-Oostende, campus Sint-Jan, Brugge, Belgium*

2. *Department of Neurology, AZ Sint-Jan Brugge-Oostende, campus Sint-Jan, Brugge, Belgium*

Corresponding author: bramdewulf@hotmail.com

Keywords: decompression injury, recompression and adjuvant treatments, inflammatory respons

CASE REPORT

A 37-year old healthy man consulted with urinary retention, paresthesias of both arms and legs and a paresis of the right leg, 6 hours after two recreational dives strictly following the instructions of his professional dive computer. First neurologic examination revealed mild pyramidal signs in the right arm and mainly the right leg, paresthesias of both arms and legs and urinary retention. Respiratory, cardiovascular and cognitive assessment was normal. Routine blood, ECG and chest X-ray revealed no abnormalities.

Acute decompression injury (DCI) type II was suspected. Recompression treatment US Navy Table 6 was started and repeated for 7 consecutive days until no further clinical improvement occurred. Recompression was combined with aggressive parenteral rehydration, high-dose corticosteroids, atorvastatin and thiamine.

Transesophageal echocardiography excluded patent foramen ovale. Somatosensory and motory evoked potentials revealed bilateral prolonged central motor conduction time of the upper extremities. Spinal cord damage was excluded by MRI allowing aspirin.

Upon discharge there was significant recovery of muscle strength and urinary dysfunction returned to normal. Paresthesias at the right knee and fingertips however did not recover.

DISCUSSION

Recompression breathing 100% oxygen decreases bubble formation and increases the inert partial pressure gradients between tissue and alveolar gas. This leads to quick resolution of bubbles, relieves mechanical pressure on surrounding tissue and encourages redistribution of bubbles lodged in the microcirculation. It oxygenates compromised tissue and attenuates inflammatory

responses that contribute to tissue injury (1). Although universally accepted as standard practice it is not based on any RCT evidence (2).

Immersion diuresis, reduced fluid intake and a capillary leak, presumably associated with the widespread endothelial damage or inflammation in severe decompression, puts the diver at risk for severe dehydration. In animal models this increases the seriousness of DCI (1).

Pharmacologic treatments are mostly hypothetical or limited to anecdotal reports. Their common denominator is they all try to mediate the process of bubble formation or its detrimental effects.

Statins preserve endothelial integrity, reduce reperfusion injury and depress the interdependent inflammatory and coagulation cascades. Until now no RCT's involve statins in the treatment of DCI (3).

Aspirin has been advocated for its antiplatelet effects but has not been formally studied in DCI excluding evidence for aspirin (1,4).

Animal model suggest that pretreatment with clopidogrel has a protective effect on decompression risk. No studies demonstrate a benefit in divers (5).

High-dose steroids worsen outcome in animals and are currently not recommended in humans (1).

There is little evidence that tenoxicam reduces the number of recompression sessions however without improvement of recovery or symptom resolution (1,2).

It is hypothesized that nitric oxide may reduce DCI risk and severity by mediating the formation of venous gas bubbles after decompression. It possibly also changes endothelial properties and depresses deleterious bubble-mediated inflammatory and coagulation cascades (3). At the moment it is not recommended in DCI.

CONCLUSION

We combined recompression with aggressive rehydration. Theoretical beneficial effects encouraged us to start aspirin and atorvastatin. The potential benefit of clopidogrel did not outweigh its risks. High-dose steroids were initiated because of initial doubt of DCI in correctly executed dives. Lack of evidence kept us from prescribing a non-steroidal anti-inflammatory drug.

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Rez de Jardin poster area

A FAST STEMI – DIAGNOSTIC CONUNDRUM

Galamoyo Nfila, James Binchy, John O'Donnell
Emergency Department, University Hospital, Galway, Ireland

Corresponding author: galanfila@gmail.com

Keywords: Simultaneous stroke and myocardial infarction, Atrial fibrillation, STEMI and CVA

A 61 years old male was brought into the Emergency Department by ambulance following a witnessed history of collapse at home at 11.35 hours. When the emergency services arrived at his house, he had obvious left sided hemiparesis, facial droop and dysarthria and a Glasgow coma scale of 10. He was therefore called in through the emergency phone as a stroke patient with a possibility for thrombolisation.

He had a past medical history of mitral valve annuloplasty in 2009, moderate mitral regurgitation, atrial fibrillation, hypertension and alcoholism.

His medication list included aspirin, bisoprolol, digoxin, verapamil, perindopril, spironolactone, furosemide and omeprazole.

On arrival to the department at 13:30 hours, he was clinically unstable with a BP of 86/52, Heart rate 84/min irregular. His GCS was 13 (E4V4M5) and his pupils were equal and both reacting. He had a temperature of 33.6 and Blood glucose of 9.3. A systemic exam revealed normal cardiovascular/respiratory and gastrointestinal systems. Neurological exam showed dense left hemiplegia, facial droop and slurred speech.

He had an ECG performed in department showing ST elevation in the anterolateral leads and atrial fibrillation.

At this stage our differential diagnosis was either Type A aortic dissection, anterior ST elevation myocardial infarction with right middle cerebral artery territory infarct or intracerebral haemorrhage with ST changes secondary to raised intracranial pressure.

After being stabilised he immediately had a CT angiogram of the aorta which didn't show any dissection. His CT brain showed early ischaemic changes in the middle cerebral artery territory.

He was therefore transferred to cardiac catheterisation laboratory and an angiogram showed total occlusion of the proximal left anterior descending artery and mid portion of the circumflex. During PCI there was no residual atheromatous changes or signs of plaque rupture in the coronary arteries. This indicated that the thrombus had embolised from somewhere else instead of directly from the coronary arteries.

Post PCI he went into cardiogenic shock, intubated and ventilated and was admitted to intensive care unit. He required intra-aortic balloon pump for 3 days. Due to risk of haemorrhaging into his cerebral infarct, heparin infusion was held. He made very poor slow progress mainly due to the neurological insult.

Simultaneous myocardial infarction and stroke is a rare presentation to the Emergency Department. Literature search has shown similar cases in paradoxical emboli and acute myeloid Leukaemia but no cases related to atrial fibrillation. These patients present a diagnostic dilemma in the emergency department. The question arises as to whether in centers with no neurosurgical specialists, should these patients be thrombolised for the stroke prior to PCI or not.

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Rez de Jardin poster area

UNUSUAL CASES OF FROSTBITE IN SOUTH KOREA

Hojung Kim (1)

1. Emergency department, Soonchunhyang univ. bucheon hospital, bucheon, Korea, (South) Republic of

Corresponding author: lovelydr@schmc.ac.kr

Keywords: FROSTBITE, COLD, CIVILLIAN

The first patient was a 23-year-old woman who worked at a foreign office in Seoul. She did not participate in winter sports, but stood in leather boots outside her office for 7 h as part of a campaign. The temperature at the time was -12°C with strong wind chill. She experienced foot pain and rubbed her feet after standing for 5 h. Although she felt that her feet were cold, she thought that the pain was due to her tight boots. The pain later became more severe and she was admitted to the hospital after work. The subject had injured all of her toes, which were swollen and had developed friction blisters that burst and oozed serosanguineous fluid. The big toe and second toe were severely affected with partial color changes and blood clots (Fig. 1). These toes showed decreased motor (grade III/V) and sensory (grade III/V) grades but the circulation was relatively good. On admission, the feet were soaked in warm (24°C) saline for 30 min and the toes were dressed with antibiotic ointment and medical tape. We consulted a plastic surgeon who made a diagnosis of bruising due to frostbite. We changed the dressings daily and she was discharged in good condition after 10 days.

The other patient was a 44-year-old woman who was a street vendor in Chuncheon, Gangwon Province, South Korea. She stood for 9 h in sneakers outside when the temperature was -15°C and raining. After lunch, she complained of foot pain and went to a local hospital. The doctor referred her to our larger hospital. The subject had injured all of her toes, which had become reddish in color, were swollen, and had developed friction blisters. The blisters on the third, fourth, and fifth toes burst and oozed serosanguineous fluid (Fig. 2). These toes had decreased motor (grade IV/V) and sensory (grade III/V) grades but circulation was relatively good. On admission, the feet were soaked in warm (24°C) saline for 30 min and the toes were dressed with antibiotic ointment and medical tape. A plastic surgeon made a diagnosis of bruising due to frostbite. The

dressings were changed daily and she was discharged in good condition after 8 days.

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Rez de Jardin poster area

HYPERGLYCEMIA-INDUCED HEMIBALLISMUS HEMICHOREA

Derya Cabbaroglu (1), Funda Karbek Akarca (1), Ayse Guler (2), Yusuf Ali Altuncu (1), Selahattin Kiyan (1), Murat Ersel (1)

1. Emergency Department, Ege University Medical School Hospital, Izmir, Turkey

2. Neurology Department, Ege University, Medical School Hospital, Izmir, Turkey

Corresponding author: fkarbek2003@yahoo.com

Keywords: hemiballismus, hemichorea, emergency

AIM: Diabetes mellitus and its complications are commonly seen in emergency department, except hemichorea and hemiballismus. Here we report two patients presenting with hemichorea due to hyperglycemia.

CASE 1: 30 years old woman admitted to emergency department with left sided involuntary movements till 15 days. She has had diagnosed as type 1 diabetes mellitus 4 years ago. Brain CT showed right deep basal ganglionic hypodensity. Her symptoms disappeared with blood glucose levels regulation.

CASE 2: 33 years old woman admitted to emergency department with left sided involuntary movements continued for 7 days. Type 1 diabetes mellitus was known in her medical history for seven years. Brain CT shows bilateral basal ganglionic hypodensity. Her symptoms disappeared by haloperidol treatment and blood glucose levels regulation.

CONCLUSION: Hemichorea and hemiballismus due to hyperglycemia is a treatable condition with good prognosis. But the first step of the treatment is recognising the cause of this pathology.

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Rez de Jardin poster area

SEVERE ARTERIAL ISCHEMIA OF LEFT ARM. REPORT OF ONE CASE

José Valero-rolan (1), Iván Villar-mena (2), María Eugenia Reyes García (2), Inmaculada López-leiva (1), Rafael Infantes-ramos (1), Cristina Fernández-figares (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: ischemia, embolic, stenosis

A sixty-four years old patient who go to the emergency for left arm paresthesias and severe pain in 3 or 4 hours earlier with accompanying loss of strength.

No known drug allergies.

Previous history: no hypertension, no diabetes mellitus and no dyslipidemia. Cervical spondylosis. Medication: Tramadol and Paracetamol. Toxic Habits: smoking 40 packs / year. Non drinker.

Exploration:

Blood Pressure: the right arm 140/80 mmHg, do not get blood pressure in the left arm.

Conscious, oriented, collaborative, well hydrated and perfused, normocoloreado.

Unaltered cardiopulmonary auscultation

Exploration pulsed right arm axillary, radial and ulnar present; Lower limbs with femoral pulses, popliteal and pedal current and symmetric.

Left arm with absent pulses humeral, radial and ulnar with coldness, cyanosis and paresis from supracondylar region to hand and slow capillary refill. Positive Buerger sign

additional tests:

Analytical: unaltered except Creatinine: 2.3 mg/dl

Cervical and thoracic radiography unaltered

Electrocardiogram showed sinus rhythm at 80 bpm, if repolarization abnormalities or signs of cardiac ischemia.

Angio-CT: is discarded before the alteration of renal function

ECO-DOPPLER: vascular flows at left axillary and subclavian artery. Image severe stenosis in the proximal third humeral artery with high-speed flows at that location, turbulent flows in centimeters proximal to the stenosis and low resistance patterns (parvus et tardus) radial artery level. Findings consistent with moderate to severe stenosis of the proximal left humeral artery embolic likely.

Diagnosis: acute arterial embolic ischemia in the left arm

Evolution: for suspected severe acute arterial ischemia contact coursing Cardiovascular Surgery preoperative treatment regimen of low molecular weight heparin unfractionated (therapeutic enoxaparin) in area of observation and emergency surgery program.

We proceed to Thromboembolectomy Fogarty probe via # 3 left humeral under local anesthesia with thrombotic material extraction.

Conclusions: acting and definitive diagnosis in the presence of signs of acute ischemia in a patient who comes to the emergency area must be imminent to act quickly and get resolve the underlying cause of this disease.

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Rez de Jardin poster area

SUBACUTE ENDOCARDITIS ASSOCIATED WITH VALVE DISEASE IN A PATIENT ADMITTED FOR PULMONARY EMBOLISM

José Valero-roldan (1), Iván Villar-mena (2), María Vitoria Alarcon Morales (2), Inmaculada López-leiva (1), Cristina Fernández-figares (1), Rafael Infantes-ramos (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: endocarditis, valve, embolism

A sixty- seven years old male patient with a history of hypertension, smoking, with criteria for chronic obstructive pulmonary disease, chronic bronchitis type and CPAP at home. Initially consulted the emergency department for fever constitutional symptoms during 48 hours, which resolved with antipyretic treatment.

A month later go back to the emergency department by persistent fever and rectal bleeding. Colonoscopy was performed and cauterize polyps in zone 3 sigma. During that income has several bronchospasm, with good response to bronchodilators and systemic steroids sprays.

In additional tests, he was diagnosed with aneurysm perforation of anterior leaflet mitral-aortic junction level and is performed by Cardiovascular Surgery surgical intervention with subsequent poor outcome, It presents a complicated postoperative intensive care unit and later the patient died in status refractory cardiogenic shock.

Exploration:

Well hydrated and perfused. TA 112/80 mmHg, FR 75 bpm, O2 saturation 92%.

Cardiopulmonary auscultation: Light based hypophonesis left. Pansystolic murmur but less intense, II / V. Abdomen soft and palpable, not peritonitis. Tips: MII bandage. Symmetric pulses.

Electrocardiogram: sinus rhythm at 90 bpm, and S1Q3T3 BCRDHH.

Chest radiography: ICT enlarged. Slight left costophrenic grip.

Clinical Trial: Subacute endocarditis.

Investigations:

Analytical: hb 8.1, Platelets 73,000 (95,100 left from ICU admission). PH 7.37. TP 48%. troponin 1.85, Rest without findings. Sustained renal function

Echocardiogram: moderate mitral and aortic.

Doppler brachiocephalic trunk: mild bilateral carotid atheromatous stenotic not, spinal injuries are not displayed.

Angio MRI: right posterior cerebral artery stenosis. Hypoplastic right verebral artery.

ECG: BCRDHH with S1Q3T3 image.

CT angiography of the pulmonary arteries: submassive pulmonary embolism.

Evolution

During this admission, the patient had a sudden loss of visual acuity, so that visual field testing is performed and then a brain MRI, which is reported as multiple cerebral infarcts. The realization of the Angio-TAc showed submassive pulmonary thromboembolism so Heparin therapy is established.

Given persistent dyspnea despite adequate treatment of heparin, we performed ultrasound scan which revealed mitral insufficiency murmur unknown and newly emerging. Given the suspicion of endocarditis left completes the study with transesophageal echocardiogram showed severe mitral and aortic insufficiency. Vegetation in right coronary cusp aortic valve. Perforated aneurysm anterior leaflet mitral-aortic junction level. In blood culture grew *Staphylococcus epidermidis* sensitive to linezolid, vancomycin, gentamicin, and rifampin.

The patient was operated by cardiovascular surgery where drilling veils appeared right coronary and non-coronary aortic endocarditis with no signs of current active. Were implanted prosthetic aortic and mitral valves.

There was a torpid with complicated postoperative ICU and eventually died in refractory cardiogenic shock.

Conclusions:

Infective endocarditis is a serious entity by insidious onset and high mortality despite treatment. In our case the diagnosis was delayed by the appearance of other comorbidities such as lower gastrointestinal bleeding and recurrent PE.

It is important to suspect this entity even if no cardiac symptoms from the onset of symptoms, with this surgery and the prognosis of patients. If there are more integrity intact valves enabling better prognosis exists.

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Rez de Jardin poster area

NEUROLEPTIC MALIGNANT SYNDROME IN AN E.R. PATIENT WITH GILLES DE LA TOURETTE'S SYNDROME, A CASE STUDY WHERE THE TREATMENT WORSENE THE PATIENT'S CONDITION.

Robert Leach (1), Camélia Masdrag-Ralea (2)

1. Department of Emergency Medicine /S.M.U.R., Centre Hospitalier de Jolimont, La Louvière, Belgium

2. Department of Neurology, C.H.U.P.M.B. Ambroise Paré, Mons, Belgium

Corresponding author: robert.leach@hap.be

Keywords: Neuroleptics, Gilles de la Tourette's Syndrome, Neuroleptic Malignant Syndrome

A 23 year old male was brought to the E.D. by his mother complaining of muscle rigidity, fever and sweating starting 6 days prior to admission and progressively worsening.

This same patient was recently diagnosed with Gilles de la Tourette's Syndrome, however, neither he nor his mother were able to identify his daily treatment, but there was a vague notion of having taken risperidone along with prothipendyl HCL. The patient himself indicated that he had stopped this treatment because "there was no improvement with these medications". He also mentioned that he was seen in the E.D. of a surrounding hospital, 3 days earlier for insomnia, sweating, epistotonos, uncontrollable muscle contractions, swearing and a depressive attitude; a worsening of his Gilles de la

Tourette's Syndrome symptomatology. The E.D. physician proposed to stop all treatment and he was administered prothipendyl HCL and prescribed haloperidol 5 mg twice daily and released with the diagnosis of drug withdrawal. There was no blood analysis done at that time.

On admission to our institution, the patient's vital signs were 160/80mmHg. 100 bpm. O₂ saturation 96%. 38,7° C. The clinical exam remarked painful myodystonia of the right foot and the left hand with intermittent episodes of epistotonos. A blood work-up was ordered which showed cpk 2318 UI/L, cpk-mb 14,7ng/mL, MDRD 81mL/min/1,73m², Idh 390 U/L, but did not demonstrate hyperleucocytosis. The patient was quickly referred for a neuroleptic consult which confirmed the diagnosis of neuroleptic malignant syndrome. The patient received procyclidine intravenously followed up by trihexyphenidyl 5mg and diazepam 5 mg three times a day. An active rehydration program was then begun. The blood work the following day showed cpk 2754 UI/L, cpk-mb 12,3 ng/mL, MDRD 78 mL/min/1,73m² and Idh 364. The in-hospital evolution was favorable and the patient was released from the hospital after 3 days. There was no renal failure and only mild rhabdomyolysis.

It was established that since childhood, this patient had numerous ticks such as gesticulations and shouting that the patient tried to conceal as best he could. His mother pleaded with him to "stop doing this", but he could only answer by saying that he couldn't control himself. He was eventually considered simply as a "trouble maker" in school and eventually dropped out. He was a good tempered boy from a nice family so the village "accepted" this odd behaviour. Realizing the handicap that this kind of behaviour would cause, his mother arranged a job for him as a garbage collector in the local town thereby also insuring a certain sense of job security for her son. He worked hard and was recognized as a hard worker so even his fellow colleagues at work accepted this unusual behaviour.

Eventually, when his G.P retired, he was taken to see a new G.P. (approximately 2 months before this E.D. visit), who finally referred him to a neurologist who rapidly identified Gilles de la Tourette's Syndrome and proposed a treatment of risperidone. Since there was no improvement in his condition after the first month, the dosages were doubled which only seemed to aggravate the symptoms and adding now some auto aggressive episodes. 5 days before coming to our E.D. he was seen again by the neurologist who this time completely changed his treatment prescribing primozide and clonidine 25mg twice a day. This even increased the problem more by sometimes having the patient "blocked" in a tick. Since he "did not know where to turn", and his symptoms were getting worse, he presented to the E.D.

It was most probably the haloperidol that was prescribed during the first E.D. visit that was responsible for the neuroleptic malignant syndrome, in a patient especially vulnerable since his base treatment was not yet stabilized. Another interesting discussion is the actual indication for treating this patient at all, since the treatment is not curative but rather only dampers the symptomatology, and since he is rather adequately socially integrated as is,

should one run the risk of eventual fatal medical complications in this specific patient.

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Rez de Jardin poster area

SPONTANEOUS HEPATIC RUPTURE: A RARE CAUSE OF ABDOMINAL PAIN

Karin Rappard (1)

1. Emergency department, Radboud Hospital, Nijmegen, Netherlands

Corresponding author: karinrappard@hotmail.com

Keywords: Spontaneous hepatic rupture, Etiology, Treatment

Introduction

Spontaneous hepatic rupture is a rare acute complication of several hepatic pathologies. Correct and timely diagnosis is of utmost importance.

Case description

A 91-year-old male was brought to the ED with sudden onset of abdominal pain and collapse suspected for an acute abdominal aortic aneurysm. His past history consists of hypertension, prostate carcinoma, TIA and a Mobitz I AV block. The medication he takes are antihypertensives, acetylsalicylic acid and dipyridamole.

Initially he complained of chest pain with dyspnea, which evolved in pain in his right upper quadrant.

Vital signs were a pulse rate of 110 b.p.m. and a systolic blood pressure of 55 mmHg. Abdominal examination revealed tenderness in the right upper quadrant without a palpable aortic aneurysm.

Lab results were a hemoglobin of 6.5 mmol/l, lactate of 8.5 mmol/l and normal platelet count and liver function tests.

Ultrasound showed free fluid in Douglas and paracolic without an aneurysm. Despite fluid resuscitation blood pressure didn't improve and noradrenalin was started. A contrast-enhanced CT scan of the abdomen showed a big oval lesion in the right liver lobe with active bleeding, possibly consistent with hepatocellular carcinoma, angiosarcoma or giant hemangioma. Embolization of the right hepatic artery stopped the bleeding and the patient recovered. The cause of the bleeding is still unknown, because the patient didn't want further investigations.

Background

Spontaneous rupture of the liver is a rare and life-threatening condition.^{2,3,4} The major causes are hepatocellular carcinoma, hemangiomas, liver adenomas, liver metastases and HELLP syndrome in pregnancy.^{1,2,3,4} The clinical presentation can range from abdominal pain, anorexia and vomiting to severe hemorrhagic shock.^{1,4} Once suspected, the diagnosis can be confirmed by ultrasound or contrast-enhanced CT scan.³

The treatment depends on the etiology, the patient's condition, the characteristics of the hepatic lesion and the medical center's abilities.^{2,4} If the patient is stable and the liver capsule is intact patients can be managed

conservatively with regular ultrasound and CT-scans.^{3,4} If the patient is unstable treatment options are hepatic artery ligation or embolization, hepatic lobectomy and surgery to control the bleeding.^{1, 2,3,4} The outcome of patients greatly depends on the etiology and severity of the hemorrhage. Patients with primary or metastatic malignant liver disease have a poor long term prognosis.⁴

Conclusion

Delayed diagnosis in spontaneous hepatic rupture might be fatal and therefore it's important to act quickly and decisively when there is a high index of suspicion.

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Rez de Jardin poster area

LOST IN TRANSLATION

Oliver Bannon (1), John O'hare (1)

1. Emergency Department, Craigavon Hospital, Northern Ireland, Belfast, United Kingdom

Corresponding author: Ollybannon@yahoo.co.uk

Keywords: Communication, Poisoning, Methaemoglobinaemia

A 2 year-old Polish boy presented to our Emergency Department in cardiac arrest. He was transferred from the factory of a local food manufacturer where his mother worked as a cleaner. She had been taking her child to work with her as she was unable to afford childcare.

The child had been playing unsupervised prior to being discovered in a state of respiratory distress. On arrival of paramedics, the boy appeared to be choking and was profoundly hypoxic. The child's mother spoke very little English but indicated he had been eating something prior to collapse. The paramedic team phoned through a stand-by call of suspected asphyxia secondary to choking.

The child's condition deteriorated en route and on arrival to hospital the child was asystolic. He was intubated and despite the suggested history of foreign body inhalation, he ventilated easily. Despite prolonged resuscitation efforts, the child died.

When a translator subsequently became available, it transpired that the child had ingested sodium nitrite. This is a substance commonly used as a food preservative. Sodium nitrite is an oxidising agent which can oxidise the ferrous ion (Fe²⁺) on the haem molecule of haemoglobin to the ferric state (Fe³⁺) leading to the formation of methaemoglobin. Methaemoglobin has decreased oxygen carrying capacity, it shifts the oxygen dissociation curve to the left and results in global tissue hypoxia. The child's methaemoglobin level was recorded at 40%.

The Paramedics had misinterpreted the aetiology of the cardiac arrest due to miscommunication with the child's mother. There was then a delay in utilising a translator when the child arrived in the Emergency Department. It is well recognised that the majority of medical errors are as result of poor communication.

With increasing emigration and a growing ethnically diverse population in the UK, this case highlights the importance of establishing an early, accurate history and the potential difficulties of miscommunication.

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Rez de Jardin poster area

DOCTOR MY LEGS HURT! PARANEOPlastic SYNDROME OF PULMONARY ORIGIN.

Zulema García Anadón (1), Sara Visiedo Sánchez (2), Belén Portillo Bernad (2), Alejandra Vidal Gomara (2)

1. Emergency department, Hospital Clínico Universitario Lozano Blesa, Zaragoza, Spain

2. Emergency department, Hospital Clínico Universitario Lozano Blesa, Zaragoza, Spain

Corresponding author: zulemagarciaanadon@hotmail.com

Keywords: Paraneoplastic syndrome, Hyponatremia, small cell lung cancer

Man of 72 years old with good quality of life. A history of acute coronary syndrome without ST-elevation with stent implantation in proximal circumflex artery. Ex-smoker 30 cigarettes a day from January 2012. Treatment with add 100 mg, Clopidogrel 75 mg, atorvastatin 80 mg, Ramipril 2.5 mg, Bisoprolol 2.5 mg and transdermal nitroglycerin. He consulted in the Emergency Department by malaise, intense weakness muscle pain in both lower limbs, and hypoxemia in relation to abdominal pain, 15 days ago. Physical examination was unremarkable. Complementary tests presents electrocardiogram: sinus with asymmetric wide T waves in V2 and V3 rhythm. The x-ray chest shows prominent left hilum with interstices marked not to rule out the presence of mass; left costophrenic sinus obliteration. In the blood analysis only hyponatremia of 113 mmol/l.

Since the patient symptomatology was compatible with existing moderate/severe hyponatremia and before the finds on the chest x-ray decided entering Internal Medicine for complete diagnosis and begin treatment with intravenous electrolyte replacement.

During hospitalization be scheduled treatment with water restriction, intravenous furosemide dose of 40 mg/day and reset slow intravenous electrolyte, with analytical and clinical improvement.

Tumor markers, resulting in a value of 67,72 ng/ml enolase, well above the upper normal range information was sought. Suspected hyponatremia of paraneoplastic origin it requested a thoracic, abdominal and pelvic scanner that showed the existence of a mass hilar and left lower parahilar with associated atelectasis; the mass included the left main bronchus; also observed bilateral mediastinal lymphadenopathy, left pleural effusion and suggestive images of secondary disease in both adrenal glands. No intracranial lesions were found.

Fiberoptic Bronchoscopy confirmed the existence of pulmonary neoplasm with result pathology compatible with small cell lung cancer stage IV. The patient was transferred

to the Medical Oncology Department where treatment was started with chemotherapy and prophylactic cranial irradiation.

The syndrome of inappropriate secretion of ADH (IADHS) is related to tumoral pathology of different origin, such as prostate, esophagus, pancreas, colon, adrenal glands, thymoma, mesothelioma or lymphomas, as in the case of small cell lung cancer the only in which ectopic ADH secretion occurs. IADH syndrome may be due to the use of drugs such as morphine, vincristine, cyclophosphamide, thiazides, carbamazepine and chlorpromazine. Finally, it may also be in relation to thyroid disease, kidney and adrenal failure.

In the case of patients with small cell lung cancer, from 1% to 2% can suffer IADHS staying mostly asymptomatic, the clinic occurs depending on sodium levels in plasma, coming to produce coma and death by cerebral edema in cases in which the sodium falls below 110 mmol/l.

Our patient, despite low levels of plasma sodium, presented a non-specific clinic that at first did us not suspect the existence of IADHS syndrome, however, once we receive the results of the complementary tests, in the absence of taking drugs potentially can lower plasma sodium levels, or symptoms of thyroid dysfunction or impaired kidney function and given a history of smoking, we toyed the possibility of finding ourselves in a paraneoplastic syndrome possibly secondary to pulmonary disease.

Sometimes paraneoplastic syndromes may be the first sign of disease, and its detection is crucial to achieve early diagnosis and treatment.

In the emergency services have limited diagnostic tests and lack of time, making it difficult to detect such cases that occur with low frequency but the physician must suspect given the potential seriousness pose.

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HIGH-FREQUENCY OSCILLATION IN ACUTE RESPIRATORY DISTRESS SYNDROME- BENEFIT OR A MYTH?

Hubertus Rawert (1), Marina Zdravkovic (1)

1. Department of Anesthesia, Intensive Care and Pain Therapy, Klinikum Bremen Ost, Bremen, Germany

Corresponding author: dr.milenkovicmarina@gmail.com

Keywords: ARDS, HFOV, recruitable lung, improved oxygenation

Abstract

Background: The acute respiratory distress syndrome (ARDS) is a severe, diffuse inflammatory lung condition caused by a range of acute illnesses. Mortality in affected patients is high. Lung-protective ventilation using tidal-volumes of 6 ml/kg IBW or less is part of the therapeutic concept for ARDS. High-frequency oscillatory ventilation (HFOV), in which very small tidal volumes are applied at a high respiratory rate, should help to limit overdistention,

and high mean airway pressures should prevent injuries from shear forces caused by repetitive collapse and reopening of the lung. Potential harm from HFOV has also been postulated, including the harmful effects of increased sedation, hemodynamic instability due to reduced right ventricular preload and increased right ventricular afterload. Increasing mean airway pressure can lead to regional overdistention of the lung. A critical factor influencing the effects of these various mechanisms may be the response of the individual patient to application of high mean airway pressure. The potential for benefit or harm may depend critically on the degree of lung recruitment in response to increasing mean airway pressure. In patients with a "recruitable lung", high-frequency oscillatory ventilation can improve oxygenation and therefore the chance of survival in patients with acute respiratory distress syndrome.

Case: A 51-year-old female patient came for examination because of dyspnea. Arterial blood gas analysis during spontaneous breathing showed the following results: pH 7,30, paO₂ 49,2 mm Hg, SAT 81%, paCO₂ 36,9 mm Hg. The X-ray of the thorax was made and blood samples were taken. Due to gas analysis and the patient's condition (all signs of acute respiratory failure were present) non-invasive ventilation (NIV) was applied. The X-ray image showed bilateral infiltrates, laboratory parameters of inflammation were elevated. Blood cultures were taken and a calculated antibiotic therapy was started. A few hours later there was no improvement in lung function. Another arterial blood gas analysis under NIV with a FiO₂ of 0,7 was performed. pH was 7,19, paO₂ 78 mm Hg, SAT 93%, paCO₂ 56,2 mm Hg. The patient was intubated and pressure controlled ventilation was started. Blood tests and patient's condition indicated SIRS and MODS. She became dependent on catecholamines despite aggressive volume replacement therapy. The patient's condition met the criteria of septic shock. Blood cultures grew *Streptococcus pneumoniae*. A control X-ray image showed signs of ARDS. Due to poor gas exchange, the patient was placed in prone position. Arterial blood gases with FiO₂ 1,0 were pH 7,23, paO₂ 75,2 mm Hg, SAT 95,1%, paCO₂ 56,0 mm Hg. Because of refractory hypoxemia HFOV was initiated according to protocol using a Vision- α -Ventilator (Fa. Novalung). Initial settings were FiO₂ 1,0, Pmean 30 cmH₂O, respiratory rate 7 Hz (= 420 bpm). After two days of HFOV arterial oxygenation significantly improved: pH 7,28, paO₂ 103 mm Hg, SAT 97,8%, paCO₂ 50,7 mm Hg. FiO₂, respiratory rate and Pmean were reduced according to the protocol. During the use of HFOV, control X-rays were performed. There were no signs of pneumothorax and infiltrates were significantly reduced. On the third hospital day, transesophageal ultrasound was performed and showed no evidence of right heart failure. Weaning was completed, when FiO₂ was reduced to 50% and Pmean to 20 cmH₂O. The patient was weaned to CPAP/ASB-mode on a Servo I ventilator (Fa. Maquet).

Conclusion: After 5 days of HFOV, the gas exchange of the patient was significantly improved. In patients with "recruitable lung", higher airway pressures reduce alveolar stress and strain and may even reduce right ventricular afterload. In this case, HFOV has been shown to be both

safe and effective in improving the refractory hypoxemia associated with ARDS. Although a general benefit of HFOV could not be proven in clinical studies, it can be used before establishing ECMO. Monitoring of lung recruitment and right ventricular function is required to insure that this mode of ventilation is achieving appropriate physiological goals in the individual patient.

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Rez de Jardin poster area

INCIDENTAL CHEST X-RAY FINDING IN AN ADULT: A MORGAGNI HERNIA

Abdo Sattout (1), Thomas Tong (1), John Hollingsworth (1)

1. Department of Emergency Medicine, Aintree University Hospital, Liverpool, United Kingdom

Corresponding author: abdo.sattout@aintree.nhs.uk

Keywords: Diaphragmatic Hernia, Morgagni Hernia, Chest X-ray (CXR)

Introduction

In the Emergency Department (ED), radiological imaging plays a pivotal part in investigative procedures. A chest X-ray (CXR) generally guides the ED physician in diagnosing common respiratory and cardiac conditions. However, incidental and unusual findings on a CXR can only broaden the differential diagnosis and dictate further imaging.

Case

A 76 year-old female attended our ED one week after a possible accidental ingestion of a small chip of glass. The patient was suspecting this might have got to the cereal box from a broken glass.

Apart from suffering from hypertension, the patient was totally asymptomatic. Observations were stable except for elevated blood pressure (BP 174/109). To exclude presence of the foreign body (FB), a CXR was performed revealing a possible mass in the right lower chest. An urgent computed tomography (CT) scan of her chest was organised only to confirm a herniation of the liver into the right lower chest with compression of the right atrium, features which appeared long standing and in-keeping with a Morgagni hernia.

Being asymptomatic, the patient was referred back to her general practitioner (GP) to have an appropriate surgical follow up organised.

Discussion

Morgagni hernia is a rare congenital diaphragmatic defect of the sternocostal triangle which lies between the fibrous nonmuscular area of the xiphisternum and costal margins. Described in 1769 by the Italian anatomist Giovanni Morgagni, it represents 3% of all diaphragmatic hernias with 90% occurring on the right side. Prevalence is more in females (62%) with an average age of presentation of 53 years.

The content of Morgagni hernia can include any non-retroperitoneal organ such as omentum (31%), colon with

omentum (29%), stomach (15%), small bowel (11%) or liver (4%).

Although several predisposing factors are implicated in the formation of Morgagni hernia, all share the commonality of raised intra-abdominal pressure such as pregnancy, trauma, obesity or chronic constipation. A number of reported cases showed an association with some genetic disorders like Down's syndrome, Prader-Willi syndrome, Turner syndrome or tetralogy of Fallot.

Around 30% of the patients are asymptomatic at time of presentation and diagnosis is made incidentally whilst investigations are undertaken for another concurrent condition. Commonly reported symptoms include chest pain, dyspnoea, persistent cough, intestinal obstruction or gastro-oesophageal reflux.

The majority of cases are diagnosed by a CXR (93%) with a characteristic "sign of the cane" occasionally seen on the lateral view. A CT scan (47%) remains essential in defining the extent and contents of the hernia. Other investigative methods would involve upper gastrointestinal (GI) study (23%) or endoscopy (8%), and magnetic resonance imaging (MRI) (5%).

The definitive management, for both symptomatic and asymptomatic patients, is elective surgical repair either by laparoscopic approach or thoracotomy. Emergency intervention is only reserved for cases with evidence of organ strangulation.

Conclusion

Morgagni hernia is a rare condition. As shown in our case, it can remain asymptomatic and present considerably late in life. The presence of similar unusual CXR findings should trigger an extensive differential diagnosis by the ED physician and urgent CT scan must follow up to confirm the condition.

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Rez de Jardin poster area

HEMOPTYSIS AND PAINFUL LEGS?

Rianne Hagens (1), Carolina Spruyt (1)

1. Emergency department, Albert Schweitzer ziekenhuis, Dordrecht, Netherlands

Corresponding author: riannehagens@gmail.com

Keywords: Hemoptoe, Paraplegia, Diffuse large B-cell Non Hodgkin Lymfoma

A 74-year old, previously healthy man came to the Emergency Department with pain, motor loss and decreased sensibility in his legs. It started a couple of weeks ago with a numbness of the lower legs, but the last days this ascended up to his abdomen. He had pain and less power in his legs and was not able to urinate. Defecation was normal and the patient sensed stool passing through. He was a little short of breath and last week he coughed up some blood once.

On physical examination reduced breath sounds were heard over the left hemithorax and the abdomen was painful with palpation. A urinary retention of 600cc was measured. There was a hyperesthesia from Th7 downwards, with no abdominal skin reflexes. The muscle strength in the legs was decreased: proximal MRC 4/3, distal MRC 4/4. The deep tendon reflexes at the legs were bilateral increased and two Babinski signs were seen.

The chest radiograph showed pleural effusion up to the left hilum and an opaque left lower lobe. The MRI of the spine showed a major tumor of the left hemithorax which seems to grow into the dorsal thorax, corpora Th6 and Th7 and into the epidural space with compression of the myelum. A CT-scan of the thorax and abdomen showed a tumor suspect for a lung tumor with direct growth into the spine corpora Th6 and Th7 and the dorsal ribs at the left. There were no signs for metastasis.

The patient was transported to a large neurosurgical centre where they conducted a laminectomy of Th6 and Th7 with posterior fixation of Th3-Th9. Pathology taught us it was a diffuse large B-cell Non-Hodgkin lymphoma. Further investigation showed no other affected lymph nodes. They decided to treat this patient with R-CEOP and abstain from radiotherapy because of his poor condition and the extent of the tumor. One month after presentation there had been no progression of muscle strength in his legs. He was discharged to a rehabilitation center.

Clinical bottom line:

- The incidence of central nervous system (CNS) involvement of Non-Hodgkin Lymphoma (NHL) depends on the type of NHL and is highest with aggressive lymphoma's; 2-10% of patients with diffuse large B-cell lymphoma's will experience direct CNS involvement during their course.
- Emergency surgical decompression can prevent further loss of motor function, but does not cure the disease. Radiotherapy and chemotherapy should be considered.

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THE MISSISSIPPI KATRINA EXPERIENCE- LEANING FORWARD IN DAILY OPERATIONS

Damon Darsey (1)

1. Emergency Medicine, University of Mississippi Medical Center, Jackson, United States

Corresponding author: ddarsey1@umc.edu

Keywords: Disaster Preparedness,, Medical Surge, Communications

August 29, 2005 Hurricane Katrina made landfall on the Mississippi Gulf Coast causing catastrophic damage to communities and medical infrastructure throughout the lower half of Mississippi. Substantial power outages, widespread communication failures and sustained medical surge of patients provided a unique challenge for the medical care delivery system in Mississippi for weeks following landfall. In the seven years since Katrina's landfall, many lessons have been learned in the medical planning, preparation and response to disasters that have affected Mississippi.

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HYPOKALEMIA INDUCED ABNORMAL MOVEMENT

Alireza Baratloo (1), Mohammadmahdi Frouzanfar (1), Behrooz Hashemi (1), Maryam Motamedi (1), Farhad Rahmati (1), Alaleh Rouhipour (2), Saeid Safari (1)

1. Emergency department, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of
2. Pediatric, Private, Karaj, Iran, Islamic Republic of

Corresponding author: alirezabaratloo@yahoo.com

Keywords: Hypokalemia, QT prolongation, seizure

The patient was a 55 years old woman who admitted in our emergency department due to first attack seizure that occurred 30 min before arrival which last for 3 minutes as generalized tonic clonic and followed with 20 minutes postictal period. She was alert and complained of chest discomfort and dyspnea at admission to ED.

She had a positive history of breast cancer that had a surgery 5 months ago with a course of chemotherapy for 2 months after. She also had history of hypertension and hypothyroidism.

Levothyroxine, levothyronine, lasix, hydrochlorothiazide, sertraline, clonazepam, buspirone, triamterene-H and dimenhydrinate were the drugs that she used irregularly.

At admission in emergency department she had auxiliary temperature 36/5oc, 14/min respiratory rates, 62/min pulse rates and 110/70mmHg blood pressure, O₂sat =96% in room air and Blood Sugar Glucometry=110mg/dl.

Tongue bite was seen in physical examination without any abnormal neurologic deficit.

In laboratory examination Na=129mg/dl, K=2.5 mg/dl, Ca=10 mg/dl, P=3.1 mg/dl and Mg=2.6 mg/dl were reported and also in ABG, PH=7.77, PCO₂=27 and HCO₃=39.7 were seen. In ECG she had obvious QT prolongation. Emergency computed tomography of the brain was normal.

In ED, she had a seizure again which accompanied with ventricular tachycardia (VT) in her monitoring that ceased with 100 joules synchronizes biphasic shock.

Infusion of 0.9% normal saline with the aim of correcting hyponatremia started and treatment with potassium replacement was began by the goal of reversing the intracellular shift of hydrogen ions to reduction of cellular acidosis and also enhancing HCO₃-excretion and a urine sample was sent for random urine chloride check which reported as 88mEq/l later. Then spironolactone administrated due to diagnosis of saline-resistant metabolic alkalosis to reducing mineralocorticoid activity.

She admitted in CCU for the rest of treatment and adjustment of her drugs doses.

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Rez de Jardin poster area

ALARM SIGNS OF HIV INFECTION

Alireza Baratloo (1), Mohammadmahdi Frouzanfar (1), Behrooz Hashemi (1), Maryam Motamedi (1), Farhad Rahmati (1), Alaleh Rouhipour (2), Saeid Safari (1)

1. Emergency department, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of
2. Pediatric, Private, Karaj, Iran, Islamic Republic of

Corresponding author: alirezabaratloo@yahoo.com

Keywords: HIV, Brain, Toxoplasmosis

The patient was a 47 years old man who was admitted in our emergency department with fever and confusion that progressing from 2 days before. His illness presentation was begun 20 days before with acute onset left side hemiplegia and right side ptosis that due to imaging findings consisted with brain mass, candidate for biopsy.

He had a positive history of treated lung tuberculosis 4 years ago and history of dysphagia 4 month before that esophageal endoscopic examination revealed diffuse mucosal candidiasis.

He was a heavy vehicle driver that leaved separated from his family in last 2 years. Also denied any intra venous drug abusing, he was an opium inhalation addict that quitted for 9 recent years and a 30 pack year smoker.

At admission in emergency department he had auxiliary temperature 39/5oc, 36/min respiratory rates, 114/min pulse rates and blood pressure 140/80mmHg. He had a tattoo on his left arm, diffuse ronchi in both lung sides, a midsize non reactive right pupil but normal size reactive left one. In laboratory examination he had lymphopenia with absolute lymphocyte count of 370.

Due to these findings and past histories, rapid HIV antibody test was requested and reported as positive. Then we performed MRI with intravenous contrast that showed ring enhancement lesion in right basal ganglia that suggested brain toxoplasmosis. So treatment with pyrimethamine, sulfadiazine, folic acid and dexametasone began and serologic test for toxoplasmosis requested which anti toxoplasmosis IgG reported positive.

Unfortunately, regardless of treatment the patient died due to multi organ failure after one week.

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A PAINFUL AND RAPIDLY GROWING LATERAL NECK SWELLING: A CASE OF INFECTED BRANCHIAL CYST

Rachel Taylor (1), Abdo Sattout (1), John Hollingsworth (1)

1. Department of Emergency Medicine, Aintree University Hospital, Liverpool, United Kingdom

Corresponding author: abdo.sattout@aintree.nhs.uk

Keywords: Branchial Cyst, Infection, Neck Swelling

Introduction

Patients with lateral neck swelling presenting to the Emergency Department (ED) can elicit a broad differential diagnosis and investigations can be extensive.

Case

A 42 year-old gentleman, normally fit and well, attended our ED with a 2-day history of a painful and progressively expanding left-sided neck swelling. He had visited his general practitioner (GP) a day earlier and was subsequently prescribed an oral antibiotic course for a suspected dental abscess. Although a follow up with the dentist was strongly recommended, the patient was unable to secure an emergency appointment.

Examination revealed an 8x10 cm tender, non-pulsatile swelling over the left lateral aspect of his neck from the upper one-third border of the sternocleidomastoid muscle anteriorly and extending to the angle of the mandible posteriorly. The overlying skin was intact and showed mild inflammation.

He was otherwise haemodynamically stable and afebrile. Intravenous (IV) antibiotics therapy was initiated and urgent investigative imaging organised. A magnetic resonance imaging (MRI) scan revealed an infected left branchial cyst with marked surrounding inflammatory changes and enhancing cellulitis, and involving the sternocleidomastoid muscle.

The patient was admitted under the care of the maxillo-facial surgical team and had the infected branchial cyst aspirated under ultrasound (USS) guidance. There was good response to treatment and he was later discharged with an out-patient follow up.

Discussion

Branchial cyst is one of the commonest cystic neck lesions. The majority of these cysts are derived from the second branchial remnants (95%) and are commonly found anterior to the sternocleidomastoid muscle.

Branchial cysts usually present in the third decade of life, with 60% occurrence in males and 60% on the left side. Most cysts present as asymptomatic permanent neck swelling and around 20% are intermittent. A rapidly expanding and painful cystic swelling is usually associated with an underlying infection.

Radiological imaging, computed tomography (CT) or MRI scans, helps in establishing the diagnosis and defining the anatomical extension of the cyst.

Although fine needle aspiration (FNA) can offer symptomatic relief, it has a poor sensitivity detecting malignant cytology.

The treatment of branchial cysts is a complete surgical excision. The presence of infection requires management with IV antibiotics and aspiration, whereas incision and drainage is reserved if such measures fail.

Conclusion

This case demonstrates how rapidly an infected branchial cyst can progress. Similar presentations should prompt the ED physician to the diagnosis and the appropriate management to be initiated.

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Rez de Jardin poster area

SUBARACHNOID HEMORRHAGE AND SUPERIOR MESENTERIC ARTERY ANEURYSM DUE TO INFECTIVE ENDOCARDITIS

Özge Can (1), Yusuf Ali Altunc? (1), Funda Karbek Akarca (1), Murat Ersel (1), Selahattin K?yan (1), Gizem Söyler (1)

1. Emergency department, University of Ege Faculty of Medicine, Izmir, Turkey

Corresponding author: draltunci@yahoo.com

Keywords: mycotic aneurysm, endocarditis, infection

Introduction

Infected endocarditis is a life-threatening disease which mostly seen at prosthetic valve, immunosuppressive or drug abuse patients. Its complications could help for diagnose. Our case is an infective endocarditis patient with mycotic aneurysm.

Case

A sixty years old male patient admitted to our department with syncope. He was a chronic kidney disease patient. He also had abdominal pain and fever by three days. Vital signs were BP: 115/72, pulse 113 beats per minute, body temperature 37, 8° C. His Glasgow coma scale was E5M6V4. Neurologic examination was normal. He had tenderness at abdomen. Abdomen CT reported as mycotic aneurysm at superior mesenteric artery. For mycotic aneurysm etiology echocardiography was performed and vegetations detected. We also performed cranial CT because of his deterioration at consciousness and subarachnoid hemorrhage seen.

Discussion

Mycotic aneurysm is a rare complication of infective endocarditis. It is important because of life threatening situation. Our case had both visceral and CNS involvement. Direct bacterial invasion, embolism, or by the accumulation of immune complexes in the vessel wall consists of an aneurysm. It is more difficult to diagnose if aneurysm was not ruptured. For aneurysms 10% of them could be seen at

superior mesenteric artery and 5% at CNS. It is very rare to see both of them in the same patient like ours.

Conclusion

Physicians should be kept in mind that the etiology could be infective endocarditis in mycotic aneurysms patients. Early diagnose could positively contribute to the mortality

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Rez de Jardin poster area

BULBUS OCULI INJURY DUE TO AIRBAG

Yusuf Ali Altunc? (1), Funda Karbek Akarca (1), Murat Ersel (1), Selahattin K?yan (1), Ercüment Umdü (1)

1. Emergency department, University of Ege Faculty of Medicine, Izmir, Turkey

Corresponding author: draltunci@yahoo.com

Keywords: airbag, bulbus oculi, car accident

Introduction:

Since the introduction of airbags in cars has saved many lives. Injuries due to airbag deployment usually seen in adults and rarely in children. The benefits of airbags are much more than their harms but it can cause serious eye injuries. We present the rare airbag deployment injury

Case

A young female patient admitted to our emergency department with orbital injury. It happened after airbag deployment in a low velocity non restraint car accident. There was no broken glass in the accident. Driver the patient's husband had no complaint.

In initial examination she has hemorrhage in left orbital. Left globe was completely deformed. She had blurred vision for her right eye without hyphema. Orbital CT reported as globe rupture.

Discussion:

Airbags can reduce mortality due to traffic accident up to 45% and prevent serious systemic injury but deployment of airbag can cause blunt eye injury like our case. However most of injuries due to airbag deployment are minor there are some globe rupture cases in the literature. Rupture occurs due to compression of the globe equator.

Physical examination is very important at the accidents with airbag deployment because it can cause alkaline burns although without blunt trauma. Mortal pediatric cases have been reported but for adults airbag deployment can cause abrasion and contusion at face, neck and thorax.

Conclusion

Next to the life-saving impact of the airbag there might be a significant cause of morbidity.

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Rez de Jardin poster area

CRAZY PAVING

Yusuf Ali Altunc? (1), Funda Karbek Akarca (1), Selahattin K?yan (1), Murat Ersel (1), Özgür Bozkurt (1), Naim Ceylan (2)

1. Emergency department, University of Ege Faculty of Medicine, Izmir, Turkey

2. Radiology department, University of Ege Faculty of Medicine, Izmir, Turkey

Corresponding author: draltunci@yahoo.com

Keywords: Torax CT, Crazy paving, Lung

Introduction

"Crazy paving" can be seen at thorax CT. Appears within the interlobular septa thickening and intra lobular lines in the background of ground-glass opacity overlapping, irregularly shaped, and resembling an image of the curb.

Case

A seventy two years old patient with diabetes, hypertension, and ischemic heart disease and Parkinson disease admitted to our department due to confusing and deterioration. Her CT reported as "Crazy paving" appearance common parenchymal changes which is associated with interstitial fibrosis

Discussion

"Crazy paving" is not a specific finding for any disease. However usually seen at HRCT, it can be detected at MDCT. Images are mostly at perihilar regions and lower lobe zones.

Although initially this finding is mentioned with pulmonary alveolar proteinosis, different airway and interstitial lung diseases in the infectious or non-infectious cases may also occur.

Differential diagnose of "Crazy Paving" include for acute situations pulmonary edema, infections, (especially pneumocystis jiroveci), pulmonary hemorrhage, ARDS, radiation induced pneumonia, for chronic situations alveolar proteinosis, vasculitis, lipid pneumonia, sarcoidosis and tumors.

Conclusion

Find out the differential diagnoses of "crazy paving" can help emergency staff for reach the right diagnoses.

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Rez de Jardin poster area

SPONTANEOUS ADRENAL HEMATOMA

Özge Can (1), Yusuf Ali Altunc? (1), Funda Karbek Akarca (1), Selahattin K?yan (1), Murat Ersel (1)

1. Emergency department, University of Ege Faculty of Medicine, Izmir, Turkey

Corresponding author: draltunci@yahoo.com

Keywords: adrenal hematoma, spontan, ultrasound

Introduction

Spontaneous adrenal hematoma is mortal and difficult to diagnose. Our aim is to remind this pathology according to our patient.

Case

A twenty years old female patient admitted to our department with abdominal pain, nausea and vomiting. She was pale, sweaty. Vital signs BP: 100/60 mm Hg pulse: 122 beats/min temperature 36°C. She had tenderness at abdominal examination so we perform bed side ultrasound, free fluid at abdomen. After the patient's stabilization abdominal CT was performed. Retroperitoneal and adrenal hematomas were seen at images. Kidney was pushed to the pelvic region due to hematoma.

Discussion

Due to its retroperitoneal localization, spontaneous adrenal hematoma is hard to diagnose and mortal. Usually patients are old. Trauma, sepsis, hematologic disturbances, pregnancy and adrenal masses may be cause of the disease. Our case is different because of her young age and without additional pathology. Ultrasound can detect hematoma. CT and MRI can confirm the hematoma and help us for etiology.

Conclusion

A rare but life-threatening condition in which the adrenal hemorrhage should be considered in terms of detection of complications.

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Rez de Jardin poster area

ADENOSINE INDUCED BRONCHOSPASM

Funda Karbek Akarca, Sadiye Midik, Yusuf Ali Altunci, Selahattin Kiyani, Murat Ersel

Emergency Department, Ege University Medical School Hospital, Izmir, Turkey

Corresponding author: fkarbek2003@yahoo.com

Keywords: Adenosine, Bronchospasm, Emergency medicine

Introduction:

Adenosine is the first line treatment choice for supra ventricular tachycardia. Its rapid onset of efficiency and short half-life (<10 sec) time promote adenosine usage. It is known to induce bronchoconstriction in asthmatic patients. A case report suggested that it can make bronchospasm patient without lung disease in literature

Case :

A fifty six years old male patient admitted to our emergency department with palpitation. There was no known disease at his medical history. At initial BP was 110/80 and pulse was 180/min. Any pathological finding at physical examination. EKG was evaluated as narrow complex regular tachycardia and 6 mg Adenosine IV ordered. Rhythm returned to normal sinus but dyspnea developed after Adenosine injection. Bronchospasm detected at auscultation and bronchodilator therapy was performed. He discharged with recovery

Discussion:

First-line pharmacotherapy in the treatment of supraventricular tachycardia includes adenosine. Its effect start in 20-30 sec and ends in 60-90 sec. Adenosine side effects include sinus bradycardia, retrosternal pain, hypotension, dyspnea, cough, syncope, vertigo, nausea. These effects take short time and could be well tolerated by patients. Recruitment of specific therapies is rare.

Adenosine could induce bronchoconstriction in asthmatic patients. In the literature, bronchoconstriction development after adenosine in four asthmatic or COPD patients has been reported. It is not contraindicated but ER staff needs to be careful.

Only one case report suggested bronchoconstriction without any lung disease after adenosine administration like our patient. Our patient recovered after bronchodilator therapy but for the other case aminophylline was required.

Conclusion:

Shortness of breath, often encountered in adenosine therapy, but that is well tolerated. Keep in mind that bronchoconstriction could be developed in patients without lung disease.

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Rez de Jardin poster area

DIFFERENTIAL DIAGNOSE FOR POST PARTUM SEIZURE PATIENT

Ozge Can, Funda Karbek Akarca, Yusuf Ali Altunci, Murat Ersel, Selahattin Kiyani

Emergency Department, Ege University Medical School Hospital, Izmir, Turkey

Corresponding author: fkarbek2003@yahoo.com

Keywords: posterior reversible encephalopathy, cerebral venous thrombosis, post partum seizure

Introduction

Pregnancy and post partum periods can aggravate old neurological findings but new onset symptoms are rare. Early treatment is valuable for these. The most common symptom is headache; visual disturbances, seizure and coma can be accompanied. The most common cause is pre-eclampsia but posterior reversible encephalopathy (PRES), and cerebral venous thrombosis (CVT) should also be considered our aim is to investigate the correct diagnose for post partum seizure patient

Case

A twenty one years old female patient with seizure admitted to our emergency. Vital signs were BP 149/97, pulse 62/min, temperature 36.8 °C. She had caesarean section four day ago and she had no medical history for seizure and hypertension. She was confused with left lower extremity weakness. Because of seizures magnesium sulfate infusion and levatiracetam PO therapy ordered. No pathologic findings reported on non contrast cranial CT. For the differentiation of diagnose (PRES or SVT) MRI was

performed. MRI was reported as SVT so anticoagulant therapy started.

Discussion

Pregnancy and postpartum period can increase neurological symptoms but new onset findings are more valuable. It's hard to diagnose because of non specific symptoms and unclear physical examination findings. PRES and SVT are rare but treatable serious causes. Both of them are frequent in females and between 20-40 years. Headache, seizure, mental status changes, blurred vision can be seen. Our initial diagnose was PRES but MRI helped us for true diagnose

Conclusion

For the postpartum seizure patients admitted to the emergency department, clinical findings and symptoms are often non specific, but differential diagnoses must be considered by clinicians especially for PRES and SVT .

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Rez de Jardin poster area

SWELLING ON NECK AND BEDSIDE ULTRASOUND DIAGNOSIS

Funda K. Akarca , Ozgur Ozen, Ozge Can, Murat Ersel, Selahattin Kiyani

Emergency Department, Ege University Medical School Hospital, Izmir, Turkey

Corresponding author: fkarbek2003@yahoo.com

Keywords: Jugular vein thrombosis, Bedside Ultrasound, Emergency medicine

Introduction

Jugular vein thrombosis is an uncommon but has life treating complications. Its incidence in all deep venous thrombosis is 4-10%. We report a case with swelling on neck by two days

Case

A seventy years old female patient admitted to our emergency department with swelling on neck. Vital findings were stable. She has swelling without hyperemia. Upper limbs periphery pulses were palpable. On bedside ultrasound examination we detected thrombosis in internal jugular vein. We confirmed our diagnosis with neck computerized tomography. IV heparin and third generation cephalosporin started.

Discussion

Jugular vein thrombosis is rare and its clinical findings are often subtle. Divided into primary and secondary. Primary is idiopathic. Causes for secondary include central venous catheterization (72%), tumors and metastasis (22%), coagulopathy, trauma, infection (28%) and endocrine changes. It is common in women like our patient, the average age is 42. Clinical findings are pain, cervical edema, noticeable superficial varicose veins. We think that our patient's nodular thyroid gland or undiagnosed tumor could be responsible for etiology

Ultrasound is the first choice for diagnose because of easy applicability and lack of radiation. CT could detect vein expansion, radiocontrast filling defects. We diagnosed with ultrasound and corrected it with CT. jugular vein thrombosis is important because of its complications. Pulmonary emboli and post thrombotic syndrome are the most common ones.

Conclusion

Jugular vein thrombosis can cause life treating complications so early diagnose and treatment is important.

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Rez de Jardin poster area

A VERTEBRAL ARTERY DISSECTION WITH BASILAR ARTERY OCCLUSION IN A CHILD: A CASE REPORT

Katleen Devue, Annemie Van Ingelgem, Marc De Leeuw

Emergency departement, ASZ Aalst, Aalst, Belgium

Corresponding author: katleen.devue@gmail.com

Keywords: vertebral artery dissection, basilar artery occlusion, stroke

Vertebral artery dissection after minor trauma is rare in children. While acute basilar artery occlusion as a complication is even more infrequent, it is potentially fatal, which means that prompt diagnosis and treatment is imperative.

This paper presents the case-report of an 11-year-old boy brought to our emergency ward featuring sudden headache, dizziness, and sleepiness after a mild trauma. Clinical examination showed a mydriatic right pupil and mildly reduced sensibility of the right side of the body. CAT and angiography scan of the brain revealed an acute dissection with thrombosis of the left vertebral artery and thrombosis of the basilar artery. The patient was treated with acute systemic thrombolysis, without any clinical improvement, followed by intra-arterial thrombolysis, which resulted in an initial improvement, but no full recanalization. Unfortunately, the end result was similar to the situation prior to thrombolysis, with clinical examination showing a left hemiplegia, bilateral clonus, hyperreflexia, and sedative consciousness. MRI indicated persistent thrombosis of the arteria basilaris with edema and ischemia of the right brain node. Heparinization for 72 hours, followed by a two-week LMWH treatment and subsequent oral warfarin therapy, resulted in a lasting improvement of the symptoms.

The lack of standard guidelines for children regarding treatment of vertebral artery dissection and basilar artery occlusion means that initial and follow-up management both require a multidisciplinary approach to coordinate emergency, critical care, interventional radiology, and child neurology services.

Po-152*Rez de Jardin poster area***PULMONARY EMBOLUS WITH SYMPTOMATIC BRADYCARDIA; A CASE REPORT**

Taylan Kilic (1), Ozlem Yigit (1), Murat Yildiz (1)

1. Emergency Medicine, Akdeniz University Faculty of Medicine, ANTALYA, Turkey

Corresponding author: taylankilic@akdeniz.edu.tr**Keywords:** Pulmonary embolus, syncope, bradycardia

Introduction: Pulmonary embolus (PE) can present with a wide variety of clinical scenarios, and there is no objective symptomatology to suspect the PE. That's why sometimes it is hard to diagnose the disease. Although sinus tachycardia is often, symptomatic bradycardia rarely can be seen with the PE.

Case: An 80 years old female, obese patient was taken to our emergency department with syncope. She had hypertension, hyperlipidemia, alzheimer and depression diseases. She was taking irbesartan+hydrochlorothiazide, metoprolol, citalopram, memantin and ketiapin for her diseases. She woke up at 06:00 am for toilet and after urination she had syncope. When taken to the stretcher, the patient was pale, sweating, tachypneic and bradycardic. Her vital signs were as follows: blood pressure 90/60 mmHg, pulse rate 42 bpm, respiratory rate 24 bpm and 85% of peripheral arterial O2 saturation. She had denied any back and chest pain or dyspnea. She was thought to have vasovagal syncope and bradycardia for vagal reaction. But when she woke up for chest x-ray, she fainted again with a pulse rate of 38 bpm (figure1). Atropine 1 mg IV was given and her pulse rate was increased at 114 bpm. Bedside echocardiography (ECHO) showed right ventricular dilatation, and lower extremity doppler ultrasound showed acute deep vein thrombosis. Furthermore, perfusion scintigraphy was performed and multiple segmentary perfusion defects compatible with PE were seen. As she was hypotensive, thrombolytic therapy was administered for massive PE, and the patient was hospitalized to ICU. The patient was discharged from hospital with 96% of peripheral oxygen saturation under room air and with normal right ventricular size at ECHO after 1 week hospitalization.

Discussion: PE is a common cardiopulmonary illness in the USA with an incidence that exceeds 1 per 1000 and a mortality rate 15 % in the first 3 months after diagnosis (1). Because of the dual supply of lungs, PE is a challenging disease to diagnose. It is also affected by the size, site and neurohumoral effects of embolus as well as age and cardiopulmonary reserve of the patient. (2). Therefore it can present with a wide variety of clinical scenarios. The classical scenario including pleuretic type chest pain (47 %), dyspnea (79 %), tachypnea (57 %) and tachycardia (26 %) is rarely seen. Sometimes the patient's only complaint can be mild dyspnea, fainting, syncope, hemoptysis, mild pleuretic type chest pain, unexplained tachycardia or hypoxia. Tachycardia is one of the most expected clinical symptoms

and is believed to be due to obstruction of cardiopulmonary circulation, hypoxia or sympathetic overactivity. In contrast bradycardia is rarely seen and mentioned in only some case reports. Morpurgo and Zonzin have mentioned an article about syncope due to PE and they thought it has 3 mechanisms; hemodynamic, metabolic and reflex mediated. First of all, hemodynamic disorder due to acute right ventricular failure causing a reduced cerebral perfusion is sometimes secondary to tachy- or bradyarrhythmias, but is more often themselves responsible for cardiac arrhythmias. Secondly, the metabolic mechanisms such as hypocapnia caused by hyperventilation and hypoxemia due to several factors are underestimated causes of syncope due to PE. Finally and interestingly, a vasovagal mechanism presenting with bradyarrhythmias can cause syncope. Severe bradycardia, high degree atrioventricular blocks and junctional escape rhythms have been reported in some PE cases with syncope (3). In our case, syncope, hypotension and unexplained hypoxia were the clues for PE. Then vasovagal reaction made the patient bradycardic and atropine a vagolytic agent eliminated the bradycardic response.

Conclusion: Although atypical presentations make PE diagnosis more difficult, early diagnosis and treatment especially for massive PE are important for a good survival. That's why atypical or rarely seen symptoms like syncope, unexplained hypoxia or bradyarrhythmias should be kept in mind as a manifestation of PE.

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Po-153*Rez de Jardin poster area***SUBCUTANEOUS EMPHYSEMA AFTER INSERTION OF A CHEST TUBE**

Marije Sterckx (1)

1. Emergency department, Canisius-Wilhelmina Hospital, Nijmegen, Netherlands

Corresponding author: marijesterckx@hotmail.com**Keywords:** subcutaneous emphysema, chest tube, pneumothorax**Introduction**

Insertion of a chest tube is a common treatment for a pneumothorax. One of the complications of insertion is subcutaneous emphysema at the tube site. I present a case of a 53-year-old man who developed massive subcutaneous emphysema after insertion of a chest tube.

Case report

A 53-year-old man presents to the emergency department with shortness of breath after he fell on a cupboard. His

medical history reports a spontaneous pneumothorax in 1998 and COPD Gold I.

On physical examination vital signs are blood pressure 135/76 mm Hg, heart rate 85/min, saturation 75% without oxygen. Saturation increases with oxygen >90%. Diminished breath sounds are heard over the right side of the chest.

The chest X-ray shows a right sided pneumothorax (figure 1). A chest tube is inserted. During this procedure dyspnea worsens, both heart rate and respiratory rate increase and patient becomes hypertensive. Saturation drops to 80%.

A second chest X-ray shows massive subcutaneous emphysema (figure 2). Manipulation of the chest tube shows little improvement of vital signs, so a second chest tube is inserted just below the first chest tube. The tip of the second chest tube is directed more cranial.

During this procedure vital signs remain inadequate and subcutaneous emphysema is extended to neck and face. Only after removing the first chest tube, vital signs return back to normal and the lung unfolds properly.

Discussion

Subcutaneous emphysema is usually found as a consequence of chest trauma and in patients with a history of emphysema and bullous disease. It can also be caused by iatrogenic procedures such as surgery and insertion of chest tubes.

A retrospective study from 2001 found that subcutaneous emphysema was associated with cases of traumatic pneumothorax and inadequate placement of the tube. This could mean either failure to advance the drain into the pneumothorax or misdirection of the drain. Poor anchorage could also cause side-port migration with a direct portal for air as a result.

Conclusion

In our patient, the main problem was probably side-port migration after anchorage of the first chest tube, since the second chest tube only improved vital signs and unfolding of the lung after removing the first chest tube.

So in every patient in need of a chest tube, insertion and anchorage requires special attention in order to prevent complications like subcutaneous emphysema. But the most important lesson is: if a chest tube doesn't improve your signs, remove it.

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AMANITA PANTHERINA TOXICITY.

Shakib Ziyada (1), Raffaele Schirripa (1), Valentina Valeriano (1), Alessandra Revello (1), Federica Paglia (1), Fabiana Di Girolamo (1), Paolo Daniele (1), Francesco Rocco Pugliese (1)

1. Emergency department, Hospital Sandro Pertini, Roma, Italy

Corresponding author: shakibz@hotmail.it

Keywords: toxicology, ethnomycology, Mushroom Exposures

Introduction

Hallucinogenic fungi have been used in divinatory or religious contexts for at least 3000 years. Today the consumption of hallucinogenic mushrooms continues to be popular in some settings. Motives for their use to enhance routine experiences, emotions, or social interactions, to disconnect from reality, to induce visions, as a psychotherapeutic tool or for mystical or spiritual reasons. There are 2 groups of mushrooms with significant psychoactive effects:

1. Mushrooms containing ibotenic acid, muscimol and muscazone (isoxazoles) (Figure 1) and panther amanita (Figure 2)

2. Mushrooms containing psilocybin.

The ingestion of this mushroom group produce ethanol-like intoxication. Symptoms typically occur within 90 minutes from the ingestion.

Case

Report
A 28 years old Albanian man was admitted to our emergency department with the ambulance crew due to confusion, irritability, hallucinations, euphoria. His clinical presentation was like an alcohol intoxication. On admission, he had lacerated scalp wound in the occipital region after head trauma. The biochemical parameters, the blood alcohol concentration and hematologic examination were within normal physiological limits. A Brain CT scan was negative to injury. His girlfriend arrived at emergency room after 30 minutes of his arrival telling us, clinical symptoms began about two hours after his ingestion of mushrooms. She brought with her part of mushrooms he eaten, collected by himself. They were like mushrooms in Figure 2 and with the help of the mycologist the diagnosis was confirmed: Amanita Pantherina Toxicity.

Discussion

The pantherina contains ibotenic acid, muscimol, and muscazone. They are present in various concentrations, depending on environmental conditions, the maturity of the fungus and the season of the year. Ibotenic acid and muscimol are relatively stable: Toxic activity has been maintained in dried plants for as long as 7 years, some data of the literature would seem that 100 grams of dried mushrooms contain 180 mg of a mixture of (ibotenic acid, muscimol and muscazone), of which only 25 mg are constituted by ibotenic acid. Ibotenic acid resembles glutamic acid and is an agonist at central glutamic acid receptors; its decarboxylated derivative, muscimol, is an agonist at gamma-aminobutyric acid (GABA) receptors. The central effects of these hallucinogenic mushrooms are thought to be attributable to these actions. Both ibotenic acid and muscimol can cross the blood-brain barrier. Symptoms of poisoning begin 30 minutes to 1 hour after ingestion and hallucinations may be accompanied by dysarthria, ataxia, muscle cramps and may persist for 8 hours. In emergency department benzodiazepines may be used for sedation and treatment the panic attacks, hallucinations, and seizures. Gastric lavage and activated charcoal if the patient presents within 1 hour of ingestion and IV fluids. With good supportive care, most patients recover within 6-8 hours and may be discharged from the ED at that time. Our patient was admitted for 12 hours of observation during which check-up examinations

were performed. He was discharged with no organ complications and the poisoning regressed.

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Rez de Jardin poster area

PERICARDIAL FAT NECROSIS: A RARE CAUSE OF CHEST PAIN

Maaïke Bink (1), Erick Oskam (2), Annemarie Van Der Velden (2)

1. Emergency Department, Albert Schweitzerziekenhuis, Dordrecht, Netherlands

2. Emergency Department, Albert Schweitzer ziekenhuis, Dordrecht, Netherlands

Corresponding author: m.h.c.b.bink@asz.nl

Keywords: Chest pain, Fat necrosis, Pericardial fat

A 28-year old man presented on the Emergency department with chest pain and dyspnoe. The pain had been existing for 2 days and was getting worse, despite taking aminocetophen. The pain was located on the left anterior lower chestwall and increased with deep inspiration. One month previously, the patient experienced mild chest pain, which passed without treatment. The patient's medical history was unremarkable.

On physical examination a pleural or pericardial friction rub was heard. All other findings were normal. The laboratory tests, including a d-dimer to rule out pulmonary embolism and the ECG were normal. The lateral chest radiograph (fig 1) showed a 6 cm diameter retrosternal ovoid mass with sharp edges.

The patient was treated with analgetics for his pleuritic chest pain and a chest CT was planned in the outpatient setting. The chest CT and complementary chest MRI (fig 2a) showed a high signal lesion adjacent to the pericardium in the left epipericardial fat confirming the diagnosis of pericardial fat necrosis.

Pericardial fat necrosis is an uncommon benign disorder of unknown cause. Patients who present with severe chest pain, typically pleuritic in character, often on the left side of the chest. Physical examination usually yields normal findings, but when examined soon after onset of the chest pain patients can be dyspneic with tachypnea, tachycardia and diaphoresis. In a review of 23 patients, 2 patients had a pericardial friction rub. The posterior-anterior chest radiograph usually shows a paracardiac area of increased opacity, occurring predominantly on the left side. The main features on CT imaging are an encapsulated fatty lesion with inflammatory changes such as dense strands and/or thickening of the adjacent pericardium. MRI can confirm the fatty contents by showing the hypointense strands and may help to differentiate pericardial fat necrosis from other fatty tumors in the anterior mediastinum. Because of its self-limiting nature, conservative treatment is indicated.

In our patients the symptoms resolved in a few weeks with the use of analgetics. A follow-up chest MRI (fig 2b) was made and showed a decrease of the lesion.

Clinical bottom line:

- Pericardial fat necrosis can be diagnosed by chest CT or chest MRI
 - Pericardial fat necrosis is a self-limiting disease and can be treated conservatively
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Fig 1: Lateral chest radiography showing an ovoid lesion retrosternally

Fig 2a: T2-weighted chest MRI showing a high signal lesion in the left cardiophrenic space

Fig 2b: T2-weighted chest MRI, taken six weeks later showing decrease of the lesion in the left cardiophrenic space

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ENTEROPATHY-ASSOCIATED T-CELL LYMPHOMA

Shakib Ziyada (1), Raffaele Schirripa (1), Moshe Mishaeli (2), Valentina Valeriano (1), Alessandra Revello (1), Ornella Abate (3), Barbara Corrias (1), Sabrina Leonetti Crescenzi (4), Francesco Rocco Pugliese (1)

1. Emergency department, Hospital Sandro Pertini, Roma, Italy
2. Internal medicine department, Meir Medical Center, Kfar Saba, Israel
3. Surgery Department, Hospital Sandro Pertini, Roma, Italy
4. Hematology day hospital, Hospital Sandro Pertini, Roma, Italy

Corresponding author: shakibz@hotmail.it

Keywords: Mature T-cell neoplasm, 2008 WHO classification, Gastrointestinal non-Hodgkin's lymphoma

Introduction

Primary Gastrointestinal lymphomas account for 4% to 12% of all non-Hodgkin's lymphoma and 1% to 4% of all gastrointestinal tumors. The rarity of primary GI NHL (0.8 to 1.2 cases per 100,000 persons per year). The majority arise in the stomach and are diffuse large cell lymphoma or MALT lymphoma of B-cell origin. Intestinal lymphomas are rare and a limited fraction of them show the T-cell phenotype with clinical manifestations similar to celiac disease (Table 1). This subtype of peripheral T-cell lymphoma is now one of the entities of primary gastrointestinal lymphoma and

classified as 'enteropathy-associated T-cell lymphoma' by the WHO Classification (Table 2).

Enteropathy-associated T-cell lymphoma does not always occur with 'enteropathy' and shows a variety of clinical courses. Several previous studies in western countries described relations between the features of a celiac disease unresponsive to gluten withdrawal from the gluten-free diet (GFD), chronic infiltration of T lymphocytes in the intestinal epithelium and clonal evolution of T-cell lymphoma. In this case we document the remarkable clinical course of a Filipino patient with enteropathy-associated T-cell lymphoma preceded by celiac disease-like intestinal presentations.

Case Report

A 37-year-old Filipino man was admitted to our department with a few months history of abdominal pain, diarrhea, and unexplained weight loss. On physical examination, he appeared weak with diffuse abdominal pain, temperature was 36.5°C, regular pulse with a rate 70 beats/min. Blood pressure was 120/70, respiratory rate was 16 breaths/min. and he had superficial skin lesions (Figure 1 and 2).

Laboratory investigations reveal hypoalbuminemia, anemia and increased (LDH). Gastroscopy with biopsies showed only chronic inflammation and congestion of the mucosa. Colonoscopy and ileoscopy showed marked erythema and erosion of mucosa, with high suspect of inflammatory bowel disease (IBD). The patient started treatment with Mesalamine (Asacol) and Methylprednidolone. Skin lesions biopsy was performed and total Body CT showed mesenteric, retroperitoneal lymphadenopathy.

A few days later the intestinal biopsy showed infiltration of T cells lymphoma. Immunohistochemical staining analysis reveal neoplastic cells positive for CD3. Both bone marrow biopsy and skin showed infiltrating T cells lymphoma (CD3 positive). Enteropathy-associated T-cell lymphoma was confirmed and he had undergone medical treatment with the CHOP chemotherapy regimen (cyclophosphamide, doxorubicin, vincristine, and prednisone).

Discussion

The WHO classification of 2008 has applied more stringent criteria to the diagnosis of enteropathy-associated T-cell lymphoma (EATL), with a concomitant change in terminology from enteropathy-type T-cell lymphoma. It is recognized that a variety of T-cell lymphomas can present with intestinal involvement, but not all are associated with celiac disease.

Patient with celiac disease who presents with recurrence of diarrhea, unexplained weight loss, abdominal pain, fever and night sweating should alert physicians to this complication. The length of presenting history varied widely, from 1 week to approximately 5 years. The most common presentation symptoms were abdominal pain (84%), weight loss (81%), diarrhea (39%) or vomiting (29%), small-bowel perforation (23%), small-bowel obstruction (19%) (Table 3).

The suspicion of EATL should lead to an extensive diagnostic workup in which magnetic resonance enteroclysis, positron emission tomography scan, and histologic identification of lesions represent the best

options.

Techniques of immunocytochemistry, together with gene rearrangement studies, now make the histologic diagnosis of enteropathy-associated intestinal T-cell lymphoma more straightforward.

Most cases are CD3+, CD7+, CD4-, and CD8-.

Our patient was negative for celiac disease, the diagnosis EATL was confirmed by ileoscopy with biopsy and CHOP chemotherapy was started

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ISCHEMIC STROKE WHICH CAUSES TO TORSADES DE POINTES

Tarık Ocak (1), Arif Duran (1), Ümit Yaşar Tekelioğlu (2), Alim Erdem (3), Emine Dağistanlı (4)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

2. Department of Anesthesiology and Reanimation, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

3. Department of Cardiology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

4. Department of Radiology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: torsades de pointes, cerebral stroke, brain ischemia

Thromboembolic cases, which are the result of cardiac arrhythmia, are one of the important causes of cerebral stroke. A 65-year-old male patient applied to Emergency Department with the complaints of fatigue, malaise and aphasia. His finger tip blood sugar was 95 mg/dL, tension arterial was 135/75 mmHg, pulse was 82/minutes, finger tip was SpO₂: %94, axillary fever was 36.70C. His electrocardiography (ECG) was at normal. Glasgow coma scale (GCS) was 11 (E3, M5, V3). While the monitored follow-up of the patient was going on, spontaneous torsades de pointes developed. Amiodarone 150 mg and magnesium sulfate 2 gr was administered intravenously. The patient did not respond to this treatment protocol and his general condition deteriorated rapidly. Cardioversion was applied with synchronized 150joule as there was no reply to the medical treatment, the tension arterial descended to 80/40mmHg and it was GCS:8 (E2, M4, V2). Second cardioversion was applied with 200 joule and regression to sinus rhythm was observed. Amiodarone infusion 900mg/24 hour was started as 60 mg/h (6 hours) and 30 mg/h (18 hours) to the patient who was evaluated by Cardiology Clinic. In his echocardiography that was scanned in urgent conditions, ejection fraction was 55%, but cardiac valve and wall motion disorder were not detected.

As a result, the follow-ups of the patients should be made with clinic and monitor in emergency observation unit at the stage of diagnosis, in case fatal ventricular arrhythmia such as torsades de pointes may develop in serious ischemic cerebral cases as is our case.

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IS ELECTROCARDIOGRAPHY SUFFICIENT FOR SUPRAVENTRICULAR TACHYCARDIA TREATMENT? CASE REPORT

Tarık Ocak (1), Arif Duran (1), Ümit Yaşar Tekelioğlu (2), Alim Erdem (3), Emine Dağistanlı (4)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
2. Department of Anesthesiology and Reanimation, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
3. Department of Cardiology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
4. Department of Radiology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: WPW Syndrome, Supraventricular Tachycardia, Diltiazem

In Wolff-Parkinson-White Syndrome (WPW), presence of accessory conduits causes various signs and clinical conditions in patients. Calcium channel blockers (diltiazem, verapamil) that are one of the most preferred medicines for rate control in patients with SVT may lead to fatal risks in individuals with WPW syndrome.

It has been determined by examination of a 58-year-old woman applying to our emergency service for palpitation that was lasting for approximately 40 minutes that she was treated for 2 years with an oral medicine containing Diltiazem HCl 120mg 2x1. Her electrocardiography (ECG) has been determined as QRS with narrow tachycardia. As the medicine used is Diltiazem HCl, the first intervention was an intravenous 0.25mg/kg dose. While the haemodynamic observations of the patients were normal, a 2nd dose of 0.35mg/kg after 15 minutes and a 3rd dose of Diltiazem HCl 0.35mg/kg after another 15 minutes was administered intravenously because the rate did not decrease in the monitored follow-up. After the third diltiazem dose, the cardiac rate became: 120/minute. Delta waves have been observed in the control ECG. The patient was transferred to the coronary intensive care of the cardiology clinic. During EPS, orthodromic tachycardia was induced again. An accessory pathway was found at right posterior localization based on intracardiac findings, and successful ablation was achieved in the same session.

As a result, as accessory pathway diseases, being wrongly considered and treated as non-complex SVT may lead to fatal arrhythmia by treatment, we tried to emphasize on the necessity to orientate the patients to the centers performing Electrophysiological studies.

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TWO CASES WITH LIGHTNING STRIKES AND LICHTENBERG FIGURES

Tarık Ocak (1), Arif Duran (1), Ümit Yaşar Tekelioğlu (2), Abdullah Demirhan (2), Mervan Bekdaş (3), Ayşe Çetin (1)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
2. Department of Anesthesiology and Reanimation, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
3. Department of Pediatrics, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Lightning strikes, Lichtenberg figures, Syncope

Lightning strikes (LS) may cause serious injury such as burns and cardiac rhythm disorders or death through the powerful electric current. Lichtenberg figures (LF), also known as the "picture of the lightning" are the important clues for lightning strikes.

A 16-year-old male patient brought to the emergency service, who was found unconscious under a tree. He told that they had escaped from the rain under the trees with a friend. Also he told that he had remembered nothing after the sound of the lightning. There was 15% 2nd degree burn on the back and the right ear of the patient. Also there was a 2cm. cut on the right ear of him. Significant LF on the back the patient extending over the right scapula was noticed. Creatine kinase (1408U/L) and creatine kinase-MB (49.8U/L) was recorded. Cranial computed tomography and electrocardiography was normal.

A 15-year-old female patient who was found unconscious. She did not know why she was brought to the hospital. On inspection there was first degree burn on the neck region as the shape of a metal necklace, and LF extending over the entire chest was noticed. Cardiac biomarkers were found to be high; troponin I level was 9.1ng/ml, creatine kinase level was 316U/L and creatine kinase-MB was 54.9U/L. Transthoracic echocardiography was normal including ventricular wall motions.

As a result, LS should be kept in mind in persons found lying unconscious in outdoors, especially during the rainy season. LF have pathognomonic importance in suspected cases of the LS.

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BITING OFF MORE THAN ONE CAN CHEW, OR CHEWING ONE'S OWN BITE, A SERIES OF UNUSUAL AIRWAY AND OESOPHAGEAL FOREIGN BODIES

Michael S Molloy (1,2,3), Conan Reilly (6), Noel Reilly (5), Zane Sherif (4), James R Rifino (2), Gregory R Ciottono (2)

1. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT), Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland

2. *Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA*
3. *Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland*
4. *Radiology Department, Gold Coast University Hospital, Southport, Australia*
5. *Emergency Department, Our Lady of Lourdes Hospital, Drogheda, Ireland*
6. *Beaumont Hospital, Dublin, Ireland*

Corresponding author: mickmolloy@mac.com

Keywords: Meat Bolus, Missing dentures, missing teeth, Management of airway obstruction

Series of cases presented with airway difficulties related to ingestion of food bolus or teeth

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Rez de Jardin poster area

NAILED IT

Michael S Molloy (1,2,3), Noel Reilly (5), Conan Reilly (6), Zane Sherif (4), James R Rifino (2), Gregory R Ciottone (2)

1. *Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT), Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland*
2. *Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA*
3. *Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland*
4. *Radiology Department, Gold Coast University Hospital, Southport, Australia*
5. *Emergency Department, Our Lady of Lourdes Hospital, Drogheda, Ireland*
6. *Beaumont Hospital, Dublin, Ireland*

Corresponding author: mickmolloy@mac.com

Keywords: Penetrating trauma management, Nail gun injury, occupational injury

We present two cases of nail gun injuries which presented to the emergency department of a dublin teaching hospital

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OCCULT AORTIC DISSECTION DISCOVERED WITH BEDSIDE ULTRASOUND IN A PATIENT WITH ACUTE PULMONARY EDEMA

Christine Butts (1), Casey Hastings (1)

1. *Emergency Medicine, LSU Interim Hospital, New Orleans, United States*

Corresponding author: Casey Luke@mac.com

Keywords: Aortic Dissection, Ultrasound, Asymptomatic

Aortic dissections are relatively uncommon, but potentially catastrophic illnesses that require early and accurate diagnosis and treatment. However, asymptomatic patients or patients presenting without classic signs and symptoms represent a formidable diagnostic challenge for the clinician.

A forty-one year old male presented to the ED with acute shortness of breath for the past 12 hours. He had no past medical history and denied any chest pain, back pain, drug use or recent trauma, surgery or immobilization. At triage he was found to be dyspneic and tachypneic with initial vital signs that were significant for a BP of 243/153 mmHg and heart rate of 113 bpm. On physical exam, he was found to have bilateral crackles and wheezes with right sided rales. The rest of the exam was unremarkable, including no abdominal pain or distention, no peripheral edema and no neurological deficits.

Initial management was directed at suspected cardiogenic pulmonary edema and he was started on a nitroglycerin drip and given IV furosemide. As part of his initial assessment, a bedside ultrasound was performed to evaluate his cardiac activity and IVC. During this exam, the abdominal aorta was also imaged, revealing both an anterior and posterior intimal flap at the level of the celiac artery. Initially laboratory findings included a BUN/Creatinine of 34/2.59 in this patient with no known kidney disease. At this point the patient was still hypertensive at 186/113 mmHg and tachycardic at 102 bpm, prompting the initiation of more aggressive blood pressure and heart rate control with an esmolol drip.

A formal ultrasound confirmed a descending abdominal aortic aneurysm and the patient was admitted to the ICU for medical management. On day three of admission, the patient underwent a CTA chest and abdomen which revealed a Type B dissection from the left subclavian artery to the bifurcation of the iliac arteries, with both the true and false lumens feeding the renal arteries bilaterally. The patient was medically managed during his 8 day hospital stay and at no point complained of chest, back or abdominal pain.

Aortic dissections occur when a tear in the intima allows blood to enter into the intima-media space of the aortic wall with further propagation of the dissection and the creation of a false lumen. Type A dissections involve the ascending aorta and are primarily managed surgically, whereas Type B dissections occur distal to the left subclavian and are primarily managed medically with aggressive control of blood pressure and heart rate. Classically, patients with aortic dissections present with severe, tearing chest pain radiating to the back. However, clinical presentations can vary widely and are influenced by the location of the dissection. Compared to type A, type B dissections are more likely to present with back or abdominal pain. Dissections that propagate into the carotids may present with new neurological findings and dissections that involve the renal arteries may lead to acute renal insufficiency. As in this case, a small percentage of patients (< 2%) may present with no pain complaints at all.

This case illustrates an atypical presentation of aortic dissection and the utility of bedside ultrasound in assisting in the initial evaluation of a patient presenting with non-specific complaints such as hypertension and dyspnea. This patient elucidates the importance of early identification of aortic dissection and initiating appropriate treatment, which in this case included more aggressive blood pressure control and heart rate control than the treatment of a hypertensive emergency alone. Although traditional imaging modalities in the diagnosis of aortic dissection, including CTA, TEE and MRI, are more specific and less operator dependent than ultrasound, they may not be immediately available or contraindicated (as in our patient with new renal insufficiency). Consequently, as this case illustrates, bedside ultrasound can be employed to visualize the abdominal aorta and portions of the thoracic aorta as part of the initial evaluation in the ED and guide appropriate treatment.

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DISSEMINATED INTRAVASCULAR COAGULATION AND MULTIORGAN FAILURE DUE TO SCORPION STING

N Rana Di?el (1), Ayça Akp?nar (1), Sevdiye Acele (2), Yüksel Gökel (3), Emre Karakoç (4), Zeynep Kekeç (1)

1. Department of Emergency Medicine, Cukurova University Faculty of Medicine, Adana, Turkey

2. Department of Emergency, Cukurova Dr. A?k?m Tüfekçi Government Hospital, Adana, Turkey

3. Department of Emergency Medicine, Çukurova University Faculty of Medicine, Adana, Turkey

4. Department of Internal Medicine, Intensive Care Unit, Çukurova University Faculty of Medicine, Adana, Turkey

Corresponding author: ranalpay@gmail.com

Keywords: Scorpion Sting, Multiorgan Failure, Disseminated Intravascular Coagulation

Introduction: Scorpions are the oldest creatures of earth. Scorpion toxins are proteins effecting ion channels in human beings, animals and insects. These toxins include neurotoxins, cardiotoxins, nephrotoxins, hemolytic toxins, phosphodiesterases, phospholipases, hyaluronidases, glycosaminoglycans, histamine-serotonine-tryptophan and cytokine releasers. Here we present a case who developed disseminated intravascular coagulation (DIC) and multiorgan failure (MOF) following scorpion sting and discharged healthy.

Case: A-34-year old woman was referred to our emergency department (ED) with diagnoses of acalculous cholecystitis and acute renal failure. She was known to be healthy till being stung from a finger by a scorpion 24 hours earlier. After the sting, she had received one vial of antiserum and was observed in a government hospital ED for 10 hours. It was reported that she had no findings pointing autonomic storm but severe pain and involuntary muscle contractions.

She had visited the same emergency room second time on the same day and had received symptomatic medication including NSAIDs and hydration. She had normal vitals, physical examinations and blood tests in both emergency visits. The next day she had diarrhea and abdominal pain on which she was diagnosed acute renal failure and acalculous cholecystitis. Arrival to our unit, she was conscious with GCS:15, and vitals were as follows: Blood pressure: 100/60 mmHg; Pulse rate: 116/minute; Respiration rate:18/minute; body temperature:36 oC. She had palor, tachycardia with an apical 2/6 systolic murmur and abdominal tenderness with positive Murphy sign and defense in epigastrium. Urinary output was 100 cc/4 hours. This 70 kilos weighting lady with remarkable leukocytosis, thrombocytopenia, elevated INR, hepatic enzymes, blood urea and creatinin, was diagnosed as DIC and MOF and hospitalized in critical care unit of ED. IV hydration was initiated with supportive care. Acute pancreatitis was added to clinical presentation on the 4th day of hospitalization. She was discharged without any complications on the 13th day. In the control blood tests she had elevated amylase levels with no symptoms.

Conclusion: Scorpions in Turkey usually cause mild complaints; pain and paresthesia. Autonomic storm, pulmonary edema and cardiogenic shock are poor prognostic. To our knowledge, this is the first reported case of MOF due to scorpion sting without accompanying cardiogenic shock, pulmonary edema or neurologic involvement.

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A RARE CASE OF ABDOMINAL PAIN – RUPTURED SPLENIC ARTERY ANEURYSM

Carmen Bartha (1), Alina Petrica (1), Doina Poenaru (2), Katalin Fabian (2), Patrick Palosi (2)

1. Emergency department, Emergency County Hospital, Timisoara, Romania

2. Emergency department, Emergency county hospital, Timisoara, Romania

Corresponding author: alina.petrica@urgentatm.ro

Keywords: abdominal pain, splenic artery aneurysm, ruptured aneurysm

Introduction

Abdominal pain is a common symptom associated with benign transient disorders or serious diseases requiring urgent intervention. Diagnosing the cause of abdominal pain can be difficult, because many diseases can cause this symptom. If we talk about abdominal pain in a patient with shock, we can narrow the list of diagnostic possibilities. Aneurysms are among these possibilities. Splenic artery aneurysms (SAAs) are the third most common abdominal aneurysm preceded only by aortic and iliac artery aneurysms. Despite this fact, SAAs are relatively rare and remain an insidious entity.

Case report

A 75 year old female with history of essential hypertension and atrial fibrillation, presented to our emergency department with abdominal pain with sudden onset a few hours ago.

On examination the abdomen was tender in the epigastrium with rebound tenderness. No pulsatile mass was palpable.

Laboratory tests showed a hemoglobin of 8 g/dl, a raised creatinine of 1,7 mg/dl and INR of 2,12(the patient was on anticoagulant medication).

Ultrasound revealed an aspect of aneurysm that we first thought to be an aortic aneurysm, with free fluid around the aneurysm.

Computerized tomography showed the presence of a splenic artery aneurysm measuring 4 cm in diameter, ruptured in the retroperitoneal space.

Conclusions

SAA is a rare clinical condition which is usually asymptomatic but is increasingly being diagnosed due to the availability of advanced imaging techniques. Early diagnosis and prompt definitive treatment is necessary in its management.

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A CARDIAL ANGIOSARCOMA PRESENTING AS A GASTROINTESTINAL INFECTION WITH SHOCK

Prem Sukul (1), Richard den Exter (1), Johan vd Klooster (2)

1. ED, SFG, Rotterdam, Netherlands
2. ICU/ED, SFG, Rotterdam, Netherlands

Corresponding author: sha82nl@hotmail.com

Keywords: cardial sarcoma, atrial sarcoma, tamponade

A cardial angiosarcoma presenting as a gastrointestinal infection with shock

Mr. Drs. S.P. (Prem) Sukul1, EP senior resident, Mr. Drs. Richard A. den Exter1, junior resident
Mr. Dr. Leon C. Verhoog4, pathologist, Mr. Drs. Johan M. van der Klooster1,2,3, internist-intensivist
Dpt. of emergency medicine1, internal medicine2, intensive care medicine3 and Pathan4, Sint Franciscus Gasthuis, Kleiweg 500, 3045 PM Rotterdam.

Introduction: Primary cardiac tumors are rare and are known for their vast array of clinical presentations, which makes the diagnosis difficult. We present a patient whose initial presentation seemed like an enteritis with septic shock who died within hours. At autopsy, a cardiac sarcoma was responsible for the symptoms and cause of death.

Case: A 46 year old male was transferred to the hospital because of nausea, vomiting and diarrhea. He complained of weakness but did not have chestpain. The symptoms occurred after eating one day old meat. Medical history included only non-insulin dependent diabetes mellitus. On

physical examination the patient appeared fatigued with a respiration rate of 30/min, a blood pressure of 122/60 mmHg, a heart rate of 130 bpm and an oxygen saturation of 100% while breathing ambient air. Cardiac and pulmonary examination revealed no abnormalities. The abdomen was soft and nontender. Laboratory findings revealed a lactate acidosis (lactate 18.8 mmol/L), leukocytosis and thrombocytopenia. ALAT (4185 U/L), ASAT (3100 U/L) and LDH (10050 U/L) were elevated and PT-INR (3.2) was prolonged. Creatinine levels were elevated (186mmol/L). An electrocardiogram revealed a sinustachycardia without other abnormalities. The chest X-ray showed a cardiomegaly. The working diagnosis was an enteritis with septic shock complicated by renal failure, shockliver and lactate acidosis. The patient was admitted to the ICU and treated with IV fluids, cefuroxim, ciprofloxacin and hemofiltration. Despite treatment, the patient developed hemodynamic instability. Therefore, a computed tomography of the thorax and abdomen was made revealing pericardial effusion. At the radiology department, a cardiac arrest occurred. Although a pericardiocentesis was performed and CPR was continued for one hour, the patient died. Autopsy revealed an angiosarcoma of 7cm with infiltration into the pericardial sack as cause of death (Figure 1 and 2). Feces- and bloodcultures did not culture any microorganisms.

Conclusion: Angiosarcoma mostly develop in the right atrium and are fast growing tumors infiltrating through all layers of the heart. The clinical presentation mainly depends on size and location. In our patient, a progressive obstruction of the right atrium with tamponade led to an obstructive shock. The symptoms of enteritis most likely occurred because of backward failure. In our case an early cardiac ultrasound may have changed the prognosis, although the chance of survival was small, because of the large tumor size and infiltration of the pericardium. In conclusion, primary cardiac tumors can have an atypical presentation and should be considered in the hemodynamic unstable patient.

Fig 1: CT scan of the thorax showing pericardial effusion

Fig 2: autopsy of the heart with tumor in the right atrium (1).

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SUCCESS FULL OUTCOME FOR DELAYED SEVERE HEPATOCELLULAR DAMAGE WITH

RHABDOMYOLYSIS IN EXERTIONAL HEAT STROKE MANAGED ON INITIAL PRESENTATION WITH BODY COOLING AND FLUIDS.

Darryl Desouza (1), Richard Drew (1)

1. Emergency department, St Michael's Hospital, St Vincent's Health Care Group., Dublin, Ireland

Corresponding author: ddesouza@eircom.net

Keywords: Mild to moderate hepatic injury is a common feature of exertional heat stroke. Some patients however experience fatal extensive hepatocellular damage, Exertional heat stroke occurs when the core body temperature rises against a failing thermoregulatory system during strenuous physical activity, Rhabdomyolysis with raised creatinine phosphokinase levels >1000 IU/l and increased liver enzymes > twice normal are both predictors of multiorgan dysfunction and therefore a subsequent poorer prognosis in heat stroke

Raised creatinine kinase (CK) levels more than 1000 IU/l and increased liver enzymes greater than twice normal level are predictors of poor prognosis in heat stroke [1] Instant recognition of exertional heat stroke cases is paramount to survival [2]

A 41-year old man was admitted to the Emergency Department (ED) within 5 minutes of collapse. This occurred at 9-kilometres (km) while competing in a marathon. A previous episode of collapse at 12-km in 2009 was noted. He underwent cardiac investigations at that time, including CT coronary angiogram, echocardiogram, exercise stress test, and was discharged when all investigations ruled out any cardiac cause for his collapse.

On his present admission vital signs were: blood pressure 145/59 mmHg; heart rate 133/minute; respiratory rate 42/minute. Tympanic temperature reading was 38.5°C. Physical examination showed a lethargic patient with no focal neurological deficit; Glasgow Coma Scale (GCS) 13 of 15. A preliminary diagnosis of heat stroke following heavy exercise was made. Body cooling was immediately initiated with rapidly rotating ice water-soaked towels to the head, trunk, and extremities with ice water packs to the neck, axillae and groin. This was augmented with 2 litres 0.45% saline infusion.

Serum glucose was 9.8mmol/l, lactic acid 6.8 mmol/L and serum creatinine 154 µmol/L. Urine toxicology screening was negative. Blood count, liver function tests, serum urea, electrolytes, troponins, blood pH, and a 12-lead electrocardiogram were normal. The cooling therapy was discontinued after 1 ½ hours once tympanic temperature decreased to 36.5°C as vital signs and mental status returned to normal. After a further 4 hours observation patient was discharged with follow up.

He however, re-attended three days later with fatigue and vomiting. Vital signs, GCS and tympanic temperature were normal. Physical examination showed scleral icterus with no signs of hepatic encephalopathy. Acute massive elevations of liver transaminases were seen Total bilirubin 115 µmol/L (normal < 17 µmol/L), gamma- glutamyl transpeptidase 139 IU/L (normal < 37), lactate dehydrogenase 2945 IU/L (normal < 500 IU/L), international normalised ratio (INR) 1.69 and platelet count

115 x10⁹/L (normal range 150 – 400). Other basic laboratory tests were within normal range.

Screening tests for paracetamol, alcohol, viral hepatitis A, B, C, ebstein-barr virus, cytomegalovirus, HIV and leptospira were negative. The liver auto-antibody titers along with immunoglobulins IgG, IgM, IgA and Wilson's disease serum markers were within normal range. A 24 hour holter ECG showed sinus rhythm throughout, with heart rate varying between 33 to 129. This further excluded a cardiac cause for collapse. A mild degree of DIC was indicated by a reduction in platelet count and rise in INR, though this could be the result of hepatocellular damage. Liver ultrasound with duplex study showed a normal liver with no large vessel thrombosis.

CK value of 11982 IU/L (normal < 174) measured on day 5 after collapse also confirmed rhabdomyolysis. Renal function remained normal; likely due to timely fluid therapy, by preserving intravascular volume. Our patient made full clinical recovery and was discharged on day 12 following admission. By 3 weeks CK levels decreased to 167 IU/L and by 4 weeks liver function tests were normal on follow up.

Discussion

Initial liver blood tests can be normal (as in our patient), usually peaking on third day after exposure to the heat insult [3]. Giercksky et al described a case of a 31 year old male who developed heat stroke after running 5 Km at 21°C in Norway, and who subsequently developed severe liver failure [4]. A more recent publication described two cases of acute hepatic failure both of which were caused by heat stroke [5].

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BEING AN AUTHENTIC PHYSICIAN

Dane Michael Chapman (1)

1. Emergency Medicine, Children's Hospital, University of Missouri-Columbia, Columbia, Missouri, United States

Corresponding author: chapmandan@health.missouri.edu

Keywords: Empathy, Burnout, Job Satisfaction

Of all physician specialists, emergency physicians are among the most likely to experience burnout—emotional

exhaustion, increased cynicism, lack of empathy, and feelings of self-doubt and lack of fulfillment. Through years of front-line emergency medicine we are wounded warriors who have forgotten who we are. In our struggle to forget self in service, we are often less healthy than the patients we serve. We are not at one with ourselves—we are neither genuine, nor authentic physicians.

Objectives: To introduce a method for overcoming burnout by becoming authentic physicians including: understanding how we got where we are, lifestyle factors that promote healing, tips to empower us as physicians to heal ourselves and then our patients in our current health care environment, and work-related stress so that it can be controlled.

Methods: Multiple prototypic cases are presented to define positive and negative factors that help mold the authentic physician.

Results: Some positive and negative factors to be discussed include: Motives for going into medicine, loss of empathy, patients being seen as problems on a list, and physicians being the technicians who must solve patient problems under constant threat of litigation. The United States health care system is broken leaving emergency and other front-line physicians exposed, often understaffed and overworked. There are few true healers. Physicians are sick themselves leaving them with increasingly less energy to heal others. Patients and doctors are pit against one another. Physicians collude with patients instead of insisting that patients change their lifestyles for optimal health—since they themselves have not set the example by taking charge of their own health. Lifestyle changes are ignored or put off by both physicians and patients. Victimization and blame results as physicians feel victimized by each new patient entering the emergency department and “systems problems”. Patients feel victimized by their diseases, the medical system, and their physicians. This is lose-lose. This is no way to run any business. This is no way to provide charitable service. This is no way to be “at one” with ourselves or with our patients. Change is needed. Emphasis has been upon signs and symptoms of pathophysiology and disease—so much so that we have lost focus upon the whole person. Instead of healing, we treat signs and symptoms. Increasingly, wise physicians and patients are rejecting “modern western medicine” for integrated holistic medicine in an effort to heal themselves. The greatest healing results from obtaining harmony and balance of mind, body and spirit by modifying lifestyle factors: Sleep, Exercise, Food, Elimination of Toxins (alcohol, tobacco, drugs) and Control of Stress. Work-related stress has led to epidemic physician burnout. It is time to reverse the burnout cycle by taking control of our lives and our health, by becoming authentic physicians. Ultimately, for us to find joy in our role as emergency physicians, we must keep doing the things we like to do, that excite us, that inspire us—yes, all those joys we gave up during medical school and residency. We must find our balance and our niche in medicine and empower our patients by our examples. When we have hope, we can give our patients a genuine reason to hope. We must always leave our patients with hope. Only then can we become an inspiration to others because we are authentically happy

and cheerful and have the energy to lift those that are down.

Conclusion: Our system of medicine is broken in the United States. We as emergency physicians have been wounded. Taking control of our lives by obtaining harmony and balance in mind, body, and spirit will allow us to become authentic physicians—full of life, encouragement and hope.

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Rez de Jardin poster area

A DIFFERENT CAUSE FOR CONJUNCTIVAL HEMORRHAGE MIMICKING BASIS CRANII FRACTURE; EXCESSIVE VOMITTING

Muhammed Melik Candar (1), Hayati Kadnis (1)

1. Emergency Medicine Department, Duzce University Faculty of Medicine, duzce, Turkey

Corresponding author: melikcandar@gmail.com

Keywords: Conjunctival Hemorrhage, raccoon eyes, basis cranii fractures

Basis cranii fractures are commonly seen complications of head traumas. Beside many diagnostic signs, Diagnosis is simple if the physician observes raccoon eyes on the patients face. However, sometimes it may be a sign of a different medical condition.

The Case:

A 77 year old lady admitted to our emergency clinic with bilateral conjunctival puffiness in her eyes. They were red in colour. Both eyelids were swollen and seemed ecchymotic. In her medical history, there were no clues for trauma of any kind. There was just a gastroenteritis history for two days. She had nausea and she told that she vomited a lot. her vital signs were measured normal. There were no abnormalities in her biochemical markers and there were no bleeding disorders. Except her eyes, there were no external lesion on her body. there were no rhinorrhea or otorrhea observed. Systemic physical examination was also normal. With signs of raccoon eyes, the patient was evaluated for a basis cranii fracture. Computed brain tomography was performed but there were no fractures in base or another part of skull. She was consulted to neurosurgeon. Neurosurgery department did not find any neurosurgical disorder in this patient. The typical eyes were consulted to ophthalmology department. The patient was evaluated and recorded no injuries in eyes. But there were just swollen conjunctivae. Symptomatic treatment was given and the patient was discharged. But what is the cause?

Conclusion:

Raccoon eyes are the most common signs of basis cranii fractures. But rarely, like our case, excessive vomiting may cause this physical finding, too. Human venous circulatory system works correct in a regular balance. In the basis of this balance, pressure is the critical physical element. Some rare conditions like excessive vomiting increases intrathoracic pressure and venous blood return from

peripheral parts of the body gets slower and even stops. By this way, the blood starts to get out of vessels and accumulate into subcutaneous soft tissues. vessels of face are so brittle and tiny. This causes subconjunctival bleeding and the patient may get raccoon eyes without ant trauma. An emergency physician should evaluate the patient in so many views at one sight. This multidisciplinary approach will help us find correct diagnosis quicker with less consumption of time and money.

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Rez de Jardin poster area

BILATERAL PNEUMOTHORAX, PNEUMOMEDIASTINUM AND MASSIVE SUBCUTANEOUSEMPHYSEMA DUE TO TRAUMA OF RIBS.

Roberta Marino (1), Germana Musso (2), Roberta Petrino (1), Elizabeth Salvador (1)

1. Emergency department, S. Andrea Hospital, Vercelli, Italy
2. Radiology Department, S. Andrea Hospital, Vercelli, Italy

Corresponding author: ropetrino@gmail.com

Keywords: rib fractures, pneumomediastinum, subcutaneous emphysema

Simultaneous bilateral pneumothorax and pneumomediastinum are complications rarely observed synchronously during a trauma of ribs. It is a clinical condition that must be rapidly diagnosed and treated because can causes serious respiratory distress. Although bilateral spontaneous pneumothorax has already been reported in the literature, its concurrence with subcutaneous emphysema and pneumomediastinum is extremely rare except for iatrogenic conditions. We report the case of a 48-year-old psychiatric patient who presented to the emergency room with massive subcutaneous emphysema, after a recent and downplayed rib trauma. The patient presented no shortness of breath, normal vital signs, and an evident subcutaneous emphysema extended to face, neck abdomen and scrotum. A CT scan showed the presence of multiple rib fractures, bilateral pneumothorax, more extended on the right, pneumomediastinum, subcutaneous emphysema. A thoracic drainage was inserted and the patient was admitted in the ICU.

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THE HEADACHE AFTER SPINAL ANESTHESIA IS NOT ALWAYS INNOCENT!

Handan Ciftci, Figen Coşkun

Emergency department, Ankara research and training hospital, Ankara, Turkey

Corresponding author: drhandanc@hotmail.com

Keywords: headache, spinal anesthesia, Subdural hemorrhage

Handan Ciftci1, Yavuz Katirci1, F. Alper Ayyıldız1, Yasemin Yılmaz1, Dilber U. Kocasaban1, Sevilay Vural2, Figen Coşkun1

1: Ankara Research and Education Hospital, Department of Emergency Medicine

2: Bartın Government Hospital, Emergency Service

The most common complication of spinal anaesthesia is headache. Post-dural puncture headache is classically postural and responds within 48h to increased fluid intake and bed rest. Prolonged headache maybe caused by subdural haematoma or intracerebral hemorrhage. We report a case of cranial subdural haematoma in a young patient who underwent spinal anaesthesia for pleonidal sinus surgery.

Twenty-six year old male patient presented to emergency department with headache starting 4 days that worsening by time. There was nothing notable in his past medical history at start. On his physical examination, blood pressure was 130/80 and fever was 37 °C. He was conscious, oriented and cooperative; GCS was 15 with a normal neurological examination. There was no sign of neck stiffness. The pupils were isochoric and the other system examinations were normal. After the medical story was deeped, it was learned that he had been operated under spinal anesthesia for pleonidal sinus diagnosis. He had been discharged from the hospital the next day because no complication was noted. When his headache started in post-op day 2, he has been told that headache after spinal anesthesia is possible and recommended to take analgesics with abundant hydration. His headache didn't respond to those recommendations even worsened, so he applied to emergency department again. His laboratory tests (CBC, bleeding profile) was normal. Intravenous 25 mg dexametopfen and 500 cc saline IV were given. However he stated no reduction of pain severity so a cranial CT was planned. Subdural hemorrhage was observed at the level of right cerebral hemisphere with a maximum thickness of 4 mm, the tentorium cerebelli was seen relatively hyperdense and found suspicious for subarachnoid hemorrhage. The patient was consulted to neurosurgery department and hospitalized. The patient was treated conservatively with analgesics and intravenous fluid support. He was discharged one week later with a normal physical examination and a normal CT.

Severe and/or prolonged headache after spinal anaesthesia should be regarded as a warning sign of an intracranial haemorrhage. All Emergency physicians should be always awake for misdiagnosis.

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Rez de Jardin poster area

A RARE COMPLICATION OF CROHN'S DISEASE; ENTEROVESICAL FISTULAE

Dilber Ucoz Kocasaban, Handan Ciftci, Figen Coşkun

Emergency department, ankara research and training hospital, ankara, Turkey

Corresponding author: drhandanc@hotmail.com

Keywords: crohn's disease, enterovesical fistulae, fistulectomy

A rare complication of Crohn's Disease; Enterovesical fistulae

Dilber Ucoz Kocasaban¹, Nurhayat Baskaya¹, Handan Ciftci¹, Ayla Mollaoglu¹, Sevilyay Vural², Figen Coskun¹

1: Ankara Research and Education Hospital, Department of Emergency Medicine

2: Bartın Government Hospital, Emergency Service

Fifty three year-old female patient admitted to emergency department with abdominal pain and urine retention. She didn't have any feature but had intermittent dysuria along the last year. No pathology was detected except suprapubic tenderness during the physical examination of the patient who had stable vitals and good general condition. Urine analysis, complete blood count and biochemical tests were ordered. A foley bladder catheter was inserted because of glob vesical view during bedside ultrasonography. No urine output was detected so catheter irrigation was performed. After the irrigation, very viscous brownish material was seen. Contrast-enhanced abdominal computed tomography was requested in consideration of this material may be stool. Peripheral hyperdense soft tissue density with a 2.5 cm diameter (fekaloid?) and air density were observed as well as multiple stones in the gallbladder. In addition, the continuity of bladder lumen along the superior adjacent left side was noted with the sigmoid colon and the findings were in favor of enterovesical fistula. The patient was hospitalized after general surgery consultation. The patient was operated, colostomy was performed after fistulectomy. The biopsy taken from the colon diagnosed as Crohn's disease.

Enterovesical fistulae is a rare diagnosis in emergency departments. This fistulae can form between any segment of bowel and the bladder or ureter. They are most commonly associated with colonic diverticula (50-70%), malignancy, Crohn's disease, radiotherapy and trauma, Enterovesical fistulae should be considered in the differential diagnosis in the presence of recurrent urinary tract infections, faecaluria, pneumaturia and haematuria.

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Rez de Jardin poster area

GOUT ATTACK ASSOCIATED WITH THE USE OF LONG-TERM LOW-DOSE SALICYLATE IN THE EMERGENCY DEPARTMENT

Yusuf Emrah Eyi (1), Ali Osman Yildirim (2)

1. Dept. of Emergency Medicine, Hakkari Military Hospital, Hakkari, Turkey

2. Dept. of Emergency Medicine, GATA Haydarpaşa Training Hospital, İstanbul, Turkey

Corresponding author: draliosmanyildirim@gmail.com

Keywords: Gout Attack, Salicylate, Emergency Department

Introduce

Gout is a metabolic disorder characterized by hyperuricemia which is increased levels of uric acid in serum associated with purine metabolism, accumulation of sodium urate monohydrate crystals in the tissues, and renal involvement. The first episode of gout is typically seen between 4 and 6 decades .

Case:

Eighty-eight-year-old male patient was admitted to emergency department with complaints of severe pain in the left great toe. Medical history of the patient with pain began sitting at home, learned that there is no history of exposure to trauma and cold. We learned that a stent was placed due to aortic aneurysm about 4 years ago and 100 mg/day dose of salicylate and 50mg/day metoprolol had been giving for prophylaxis. Additionally, when gout was diagnosed ten years ago, patient did not take any medication for the treatment of gout but he had a history of drug use for Parkinsonism.

Physical examination of the patient with stable vital signs; there was hyperemia, warmth and edema, and painful with motion in the left first metatarsophalangeal joint of patient.

Examinations of other system were normal. At admission, laboratory tests were showed in table.

It was suspected an attack of gout according to complaints and findings of physical examination.

We concluded that cause of gout attack was low-dose salicylate therapy for a long time. Because, there were no other factors such as alcohol consumption, a change on diet, trauma, exposure to cold, and using a diuretic caused an attack of gout.

Hydration of the patient was done in the emergency department. Klapidogrel (75 mg / day) was given to patient after termination of salicylate therapy. Non-steroidal anti-inflammatory drug did not admit to therapy of patient; because, there were findings of renal failure. However, corticosteroids (60 mg, 4 times a day) treatment was planned and then patient was discharged.

Discussion:

Gout attacks, as a result of the collapse of urate crystals within joints or around, begins in the form of recurrent episodes of acute arthritis (8). The most of attacks, usually in a single joint, tend to be at night and often wakes up the patient from sleep. Factors which take in etiology can often provoke an episode of gout. Trauma, prolonged starvation, rich protein diet, alcohol use, surgery, infection, and drugs are factors predisposing to gout attacks. Diagnosis of gout is made by physical examination and the presence of the height level blood uric acid in test (3, 8).

Due to no possibility of other causes except use of salicylate and being of physical findings with high level uric acid in favor of gout attack, in our case, we concluded that gout attack is the result

of using low-dose salicylate therapy for a long time. Colchicine is the first drug in the treatment of an acute attack. It can be help to diagnosis additionally to treatment. Ürikosüric and allopurinol do not use in the treatment of attack. Indomethacin has no effect such as Ürikosüric. But, it can be used to treat gout attack due to the effect of a strong anti-inflammatory. Naproxen sodium is another option that can be used in the treatment of the attack. Not only high doses of indomethacin but also naproxen is sufficient to treatment with 2-day application (7). In our case, colchicines were not used because of renal failure. Therefore, corticosteroid was appropriate in treatment. Salicylates inhibit tubular secretion of uric acid and can cause uric acid retention. Salicylates raise the frequency of attacks due to increased uric acid and worsening of symptoms. Use of low dose salicylates for a long time may cause an attack depending on chronic elevated uric acid levels (7). As a result, medical history of patients with gout attacks should be evaluated carefully when they applied to emergency room. Drugs including salicylates may cause gout attack should be questioned. Taking into account with renal function, treatment of patients should be planned and patients should be informed against factors which provoke gout attacks.

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Rez de Jardin poster area

ALBUTEROL-INDUCED VENTRICULAR TACHYCARDIA

Yusuf Emrah Eyi (1), Ali Osman Yildirim (2)

1. Dept. of Emergency Medicine, Hakkari Military Hospital, Hakkari, Turkey

2. Dept. of Emergency Medicine, GATA Haydarpasa Training Hospital, Istanbul, Turkey

Corresponding author: draliosmanyildirim@gmail.com

Keywords: VENTRICULAR TACHYCARDIA, ALBUTEROL, arrhythmia

INTRODUCTION

Ventricular tachycardia is a serious life-threatening tachycardia. As triggering factors of intraoperative hypoxia, hypotension, include excess fluid load, electrolyte imbalance (K⁺, Mg⁺), myocardial ischemia, injection of adrenaline. Also known to Increased or irregular heart rate due to albuterol.

CASE

67-year-old male patient was brought to the emergency room in case of dyspnea. the story had chronic obstructive pulmonary disease and chronic renal failure. electrocardiogram was normal. SaO₂: 88%, and K⁺ was found 6.mEq/l. Following the inhaled albuterol for dyspnea patients developed ventricular tachycardia.(FIGURE 1) After 2 minutes, without the need to apply the patient returned to the Sinus rhythm.

CONCLUSION

ventricular tachycardia is a life-threatening rhythm disorder.. Commonly used drugs such as albuterol should be used carefully in emergency departments. albuterol, if you have hyperkalaemic, can cause ventricular tachycardia. hypoxia in our case is likely to be triggered ventricular tachycardia.this reason, emergency services must be well known drug interactions.

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DROOPING EYELIDS SECONDARY TO ABOVE LEFT ARTERY ANEURYSM CHOROÏDAL

Iván Villar Mena, José Valero Roldan, Inmaculada López Leiva, Cristina Fernández-Fígares, Rafael Infantes Ramos

Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain.

Corresponding author: ivillarmena@hotmail.com

Keywords: Ptosis, Aneurysm, Choroidal artery

Clinical Case:

A 37 years old man with no personal physicians.No known allergies, lives with his partner. No children. No known toxic habits and associated risk factors.

The patient complained of headache, neck and left hemicranial irradiated left ear 10 days of evolution would not budge with painkillers after being seen in the emergency with a diagnosis of atraumatic Cervicalgia.

Now go to the ER again for fall left eyelid present for four days and blurred vision companion. On examination shows complete left ptosis with mydriatic pupil unresponsive with preserved abduction and paralysis of the medial rectus eye muscles, upper and lower, with the rest of the examination without alterations.

Valuation is requested Ophthalmology and Neurology specialist.

Exploration: Eye Fund: Net edged taste and good color, no papilledema and normal-appearing macula. Rest exploration by ophthalmologist and neurologist unchanged.

Complementary tests:

Analytical unchanged.

Angio-CT scan: partially torn posterior communicating aneurysm and severe vasospasm.

NMR: saccular lesion compatible with 6-7 mm posterior communicating artery aneurysm left no signs of subarachnoid hemorrhage

Evolution: Following findings of additional tests and evaluation by neurology income plan is decided. Stay in monitoring neurological and after 4 days of admission will be program for aneurysm embolization arteriogram is performed successfully and without incident.

Treatment: Treatment was initiated with Nimodipine and neurological observation floor.

Rehabilitation ptosis recovery after being discharged after aneurysm embolization.

Clinical Trial: Left anterior choroidal artery with third nerve palsy.

CONCLUSIONS: Ptosis, also called blepharoptosis or ptosis of the eyelid, is a permanent decrease of the upper eyelid. It can be total or partial, according to whether it prevents or not vision and eyelid may represent damage (dystrophy of the levator muscle), damage to the third cranial nerve, mechanical causes (compression secondary to periorbital edema or hematoma, or trauma) or the action of drugs. You can also present clinically as a symptom in diabetes mellitus, myasthenia gravis, or Horner syndrome.

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Rez de Jardin poster area

BRUCELLOSIS IN URBAN AREAS, INFECTION BY INOCULATION WITH FERTILIZER

Iván Villar Mena, Cristina Fernández-Fígares, Rafael Infantes Ramos, Inmaculada López Leiva, José Valero Roldan

Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain.

Corresponding author: ivillarmena@hotmail.com

Keywords: Brucellosis, infection, zoonotic

Reasons for consulting: 74 year old female, referred box asthenia, fever in the evenings and general malaise artromialgias 3 weeks of evolution.

Clinical History:

- Patient with a history of type II diabetes mellitus treated with metformin and good metabolic control, recent femur fracture treated by osteosynthesis, mild-moderate depressive syndrome, refers to days of high trauma, fatigue, low grade fever in the evenings and malaise artromialgias general. It was initially associated with postoperative convalescence, as well as dysthymic baseline status, but after two weeks without improvement with analgesic treatment, go back to consultation persistence of such symptoms, interfering in daily activities. On examination, normal constants, normal lung sounds, normal abdomen, only discomfort at the surgical wound.

- The patient denied changes in eating habits (dairy, meat) Denies or insect bite wounds.

The patient lives in urban areas in a house with garden, handling manure.

- Initial Suspicion / diagnostic impression: Brucellosis

- Is requested full blood test. Count and normal biochemistry, ESR and CRP normal Brucella Coombs 1/1280 +, and rose bengal + 1/160. Negative blood cultures.

- Clinical judgment: Brucellosis.

- Attitude: start treatment with Doxycycline + streptomycin 600 mg/24 100mg/12h and compulsorily notifiable disease (CND) report is issued. After completing treatment, resolution of symptoms.

Conclusions

Brucellosis is a zoonotic disease of low prevalence in urban areas, where infection is usually associated with dairy intake, and symptoms in mild cases may go unnoticed.

It is important not to get carried away by what is the most frequent or most likely and patients with persistent nonspecific symptoms that do not improve with treatment prescribed, it is always necessary to investigate possible causes, history and additional tests expand to reach a diagnosis.

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WALLENBERG SYNDROME.

Iván Villar Mena, Rafael Infantes Ramos, Cristina Fernández-Fígares, Inmaculada López Leiva, José Valero Roldan

Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain.

Corresponding author: ivillarmena@hotmail.com

Keywords: Wallenberg syndrome, vertebral artery, lateral medullary

Reasons for consulting: Patient 40, goes to consultation referring rotatory vertigo, hyperesthesia and paresthesia right arm, sweating, limb loss, loss of smell and hearing in the right ear, cranial headache.

Clinical History:

- Patient with a history of type II diabetes mellitus treated with metformin and good metabolic control, recent femur fracture treated by osteosynthesis, mild-moderate depressive syndrome, refers to days of high trauma, fatigue, low grade fever in the evenings and malaise artromialgias general. It was initially associated with postoperative convalescence, as well as dysthymic baseline status, but after two weeks without improvement with analgesic treatment, go back to consultation persistence of such symptoms, interfering in daily activities. On examination, normal constants, normal lung sounds, normal abdomen, discomfort only surgical level

- Physical examination was normal and neurological findings in mild superficial numbness right arm, right hearing loss and limb loss

- Normal blood tests, including thyroid axis and no new control MRI findings. Eventually reaching the diagnosis of Wallenberg syndrome

- Clinical judgment: Wallenberg syndrome (left hemisensory loss and impulse control disorder predominantly food).

In this case the treatment is symptomatic and preventive.

Conclusions:

- The lateral medullary syndrome or Wallenberg syndrome is a set of symptoms caused by occlusion of the intracranial vertebral artery and less frequently in the posterior inferior cerebellar artery, causing a series of sympathetic and sensory disturbances (sudden dizziness, followed by nausea, vomiting, ipsilateral ataxia, muscular hypertonicity

and other cerebellar signs such as Horner syndrome, anhidrosis, sinking of the eyeball and / or mydriasis ...). In patients with a personal history of the case as reported, it is important to be alert and take into account all symptoms reported by patients in order to make a correct overview of prevention and patient status.

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Rez de Jardin poster area

ESOPHAGEAL RUPTURE AND SNACK FOOD CHIPS: A PRESENTATION OF TWO CASES FROM REDHILL, SURREY, ENGLAND.

Munazah Akhtar (1), Babak Daneshmand (1), Peter Martin (1)

1. Emergency Department, East Surrey Hospital, Redhill, Redhill, United Kingdom

Corresponding author: Peter.Martin@sash.nhs.uk

Keywords: Esophagus, Rupture, Food

Spontaneous rupture of the esophagus was first reported by the Dutch physician Herman Boerhaave of Leiden, who described the case of Baron Wassenaar, Grand Admiral of the Dutch Fleet.

In 1724, Baron Wassenaar induced vomiting after a heavy meal, but sustained a fatal presentation of the esophagus just above the diaphragm.

Esophageal rupture may also be caused by instrumentation, blunt or penetrating trauma to the chest and by direct piercing. Furthermore, underlying esophageal disease may predispose towards rupture.

Once gastric and oral secretions leak into the mediastinum or pleural cavity, an inflammatory and septic process begins. Patients may develop tachycardia, hypotension, respiratory distress or other signs of sepsis associated with mediastinitis. The triad of lower chest pain, vomiting and subcutaneous emphysema is often absent, leading to a diagnostic challenge for clinicians.

Practitioners must maintain a high index of suspicion for esophageal rupture in the emergent setting. The longer mediastinal contamination persists, the less likely the patient's chances for a good outcome.

We present the clinical course and management of two patients presenting to our Emergency Department within the last six months. It is noteworthy that both patients complained of chest pain and difficulty swallowing after eating snack food chips.

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Rez de Jardin poster area

TOTAL RECTAL PROLAPSE REDUCTED VIA KETAMINE

Sm Yasar (1), Aa Aydin (1), I Arziman (1), S Ardic (1), M Kaya (1), C Aydin (2), M Durusu (1)

1. EMERGENCY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey
2. INTERNAL MEDICINE DEPARTMENT, NUMUNE EDUCATION AND RESEARCH HOSPITAL, ANKARA, Turkey

Corresponding author: ibrahimarz@hotmail.com

Keywords: rectal prolapse, ketamine, reduction

INTRODUCTION:

Rectal prolapse is the circumferential protrusion of part or all layers of the rectum through the anal canal. It is rare in ED and if we delay the reduction of the complete prolapse, the prolapsed segment can develop ischemia, gangrene, superficial ulcerations and strangulation. In this case report, we wanted to share a total rectal prolapsed patient who was successfully reduced.

CASE REPORT

A 55 years old male patient admitted to our emergency department with a sensation of a rectal mass during defecation. His vital signs were normal. There was a history of fall down from 2-meter height due to anal sphincter weakness. He told that he had reduced a prolapse five times by himself. But the last time he failed to reduce it and admitted to emergency department with a severe pain. The physical examination revealed rectum was prolapsed 13 centimeters from dentate line, appeared as a red and ball-like mass. 100 mg ketamine was administered intravenously and the prolapse was reduced in the sedated patient. The sphincter tonus was decreased in the latter examination. Patient was taken by the surgical department for operation.

CONCLUSION
Rectal prolapse is an emergent situation and should be managed within a short time period otherwise it can be complicated with ischemia and strangulation. Rectal prolapsed can be reduced it successfully by using ketamine as anesthetic agent. Such complication should be suspected when the reduction fails.

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Rez de Jardin poster area

A FOREIGN BODY IN THE GASTROINTESTINAL TRACT: CASE REPORT

Sm Yasar (1), M Kaya (1), I Arziman (1), S Ardic (1), O Tezel (1), Aa Aydin (1), C Aydin (2), M Durusu (1)

1. EMERGENCY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey
2. INTERNAL MEDICINE DEPARTMENT, NUMUNE EDUCATION AND RESEARCH HOSPITAL, ANKARA, Turkey

Corresponding author: ibrahimarz@hotmail.com

Keywords: foreign body, gastrointestinal tract, complication

Introduction:

Most foreign bodies pass through the digestive tract without incident. In children and adults, once an object has

traversed the pylorus, it usually continues through the gastrointestinal (GI) tract and is passed without issue. If, however, the object has irregular or sharp edges or is particularly wide (>2.5 cm) or long (>6 cm), it may become lodged distal to the pylorus.

We wanted to share a patient who swallowed a piece of metal (7,3 cm x 1.1 cm) which is serrated on one side and foreign body came out of the gastrointestinal tract without complication and surgery.

Case Report:

A 23 year old male was admitted to the emergency department with abdominal pain presenting for two months which became stronger last three days. He claimed that he has swallowed the FB accidentally. He confessed that he did not go to the doctor because of he was afraid of surgery. In abdominal examination, there was minimal tenderness without rebound. In laboratory; white blood cell account was 13,9 x 10.e3 and the other results were normal. There was a FB on the right side of plain abdominal radiography. The FB was about 7,3 cm x 1.1 cm. He was hospitalized in general surgery clinic we observed that the foreign body moved away from the anus without any complication on the sixth day of hospitalization..

Conclusion:

Emergency physicians must be aware of insidious reasons of abdominal pain and always get a detailed history and make a detailed physical examination. Foreign bodies can pass through the digestive tract without incident. Surgery is not the only treatment for the foreign bodies in gastrointestinal tract. Close observation of the patient for the complications can rescue the patient from the surgery.

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CASE REPORT: SPONTANEOUS HEMOPNEUMOTHORAX IN A YOUNG BOY: AN ULTRASOUND DIAGNOSIS

Renzo Camajori Tedeschini (1), Germana Ruggiano (2)
1. Emergency Department, Ospedale S. Giovanni D. Dio ASL 10 Florence, Florence, Italy
2. Emergency Department, Ospedale S. Maria Annunziata ASL 10 Florence, Florence, Italy

Corresponding author: germana.ruggiano@asf.toscana.it

Keywords: spontaneous hemopneumothorax, ultrasound examination, eFAST

Hemopneumothorax is present in 12% of spontaneous pneumothorax. It is a life-threatening condition and prompt diagnosis is essential to right therapeutic approach.

A 16 years old boy was admitted to our Emergency Department for spontaneous chest pain lasting 3 days; pain was continuous and was exacerbated by deep breathing and cough, it was progressively worsening before hospital presentation. Vital signs were normal but he had sinus tachycardia (110 bpm). He had never had any health problem.

The physical examination found asymmetrical breath sounds with decreased left breath sounds; blood gas analysis was normal. A bed side ultrasound examination was performed (25' after hospital presentation) that showed severe echogenic pleural effusion and apical pneumothorax. The chest X Ray showed only mild pleural effusion and minimal apical pneumothorax. A contrast enhanced chest CT scan was then performed: it confirmed the diagnosis of hemopneumothorax with abundant hemothorax and active bleeding and small apical pneumothorax. A tube thoracostomy was then performed and 1200 ml of blood were drained. The patient always remained hemodynamically stable and after 24 hours a video assisted laparoscopic thoracotomy was performed with demonstration of active bleeding from an apical lacinial artery.

Bed side ultrasound examination is a simple, extremely useful tool in the emergency physicians' hands a sit extends clinical examination. In case of pleural effusion ultrasound examination is much more sensible than chest X Ray. Ultrasound examination is very useful in determining the amount of fluid and the type of pleural effusion. It can also guide bed side chest tube insertion.

We believe that ultrasound examination should be widely performed and become part of emergency physician clinical examination.

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COULD BE A PORTAL VEIN THROMBOSIS?A PARTICULAR CASE OF ABDOMINAL PAIN IN A YOUNG MAN

Stefano Sartini (1), Jacopo Frizzi (1), Stefano Gonnelli (2), Fulvio Bruni (1), Marcello Pastorelli (1)
1. Emergency Department, University Hospital of Siena, Siena, Italy
2. Internal Medicine Department, University Hospital of Siena, Siena, Italy

Corresponding author: stefano.sartini83@gmail.com

Keywords: portal vein thrombosis, abdominal pain, ultrasound

INTRODUCTION. The evaluation of abdominal pain is challenging for each emergency physician that has to deal with. Differently from chest pain that is widely studied and evaluated in a lot of manners (scores, pre-test probability etc.), abdominal pain remains a nebulous clinical presentation hard to manage, without standardized scientific evidences regarding the first approach. This clinical case represents for us not only a relative rare case of abdominal pain in a young man, but moreover the example of the difficulties in the whole management. The exclusion of the main cause of death is mandatory for emergency physicians, like aortic rupture, bowel ischemia, peritoneal infection etc. In many cases the patient's history is the main indicator to reach the diagnosis. CASE REPORT. A 27-year-old man was admitted to our Emergency Department (ED) complaining of abdominal pain since 2

days exacerbated in the night. Ten days prior, the patient underwent post-traumatic splenectomy due to a car accident with his motorbike. The post-operative period was unremarkable. At presentation he denied nausea, diarrhoea or fever. Vital signs were: VAS 7/10, blood pressure 160/80mmHg, heart rate 99 rhythmic heart rate, oxygen saturation 99% in air, temperature 36,9°. Physical examination revealed flat abdomen, xifo-umbilical scar due to prior splenectomy, no tenderness or muscle guarding, painful in hypocondrium and epigastric region, valid peristalsis. Blood gas analysis revealed moderate respiratory alkalosis with normal O₂ value. Electrocardiography was unremarkable. Laboratory blood test revealed neutrophil leucocytosis and piastrinosis (1326 mil/mm³), elevated reactive-C protein (6,35mg/dl) and D-dimer levels (2,65mg/l). Other laboratory tests were normal. ECOFAST, performed in the EM, didn't showed neither peritoneal liquid nor pericardial effusion. An abdomen ultrasound(US), showed left pleural effusion, complete thrombosis of the portal vein and its branches, mesenteric and splenic veins were patent, no further alterations about kidneys, liver, colecistis, pancreas, bladder and abdominal aorta (Fig 1). A CT-scan of the superior abdomen confirmed the US report. Then the patient was admitted to our Intensive Care Unit and anticoagulation therapy was started with continuous heparin e.v. infusion at standardized dosage (5000 IU in bolus then 100 IU/Kg/h). At the same time antibiotic therapy with piperacillina/tazobactam and paracetamol were administered (the antithrombin III factor, C and S coagulant protein were unremarkable).After 12h from the beginning of anticoagulant therapy, aPTT didn't achieved the therapeutic range of 2-3. The heparin infusion was substituted with fondaparinux 7,5 mg daily. After 96 h an abdomen US showed no thrombosis progression and partial patency of the portal vein. Warfarin administration was started with the achievement of INR therapeutic range of 2-3 in three days, then fondaparinux was stopped. The US control at seven days from the onset showed a complete regression of the portal vein thrombosis. After six month of oral anticoagulation therapy, other coagulation factors were evaluated (Antithrombin III factor, APCRn, homocisteina, antiphospholipid antibody) but no alteration were found. DISCUSSION.Portal Vein Thrombosis (PVT) is an uncommon disease with an incidence of 0,05-0,5% in general population (detected from autopsy findings). In some cluster of patients it occurs with more frequency: cirrhosis (0,6-35%), transplantation (liver, 2,1%-26%), hepatocellular carcinoma, abdominal masses, chronic pancreatitis, congenital anomaly of portal tract, coagulation disorders. Furthermore comorbidities include splenectomy in patients with myeloproliferative disorders, with an incidence of 6-8%, especially in the case of laparoscopic technique. The main complications of acute portal thrombosis are esophageal varices bleeding due to portal hypertension and bowel ischemia. The emergency treatments are respectively esophago-gastro-duodenal endoscopy to stop the bleeding and surgical intervention to prevent bowel necrosis and peritonitis. In this particular case-report it wasn't easy to think about PVT, the patient didn't presented any comorbidities for the common

diseases related to PVT other than post-traumatic splenectomy. Futhermore splenectomy performed with traditional open technique, without hypersplenism signs, results to be a rare case of PVT in patient with post-traumatic splenectomy.

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Rez de Jardin poster area

A FEARFUL LITHIUM INTOXICATION

Jacopo Frizzi (1), Veronica Bocchi (2), Stefano Sartini (1), Donati Valeria (1), Matteo Borselli (1), Daniele Romano (3), Stefano Gonnelli (2), Fulvio Bruni (1), Marcello Pastorelli (1)

1. Emergency Medicine Department, University Hospital of Siena, Siena, Italy

2. Internal Medicine Department, University Hospital of Siena, Siena, Italy

3. Unit NINT Neuroimaging and Neurointervention, Department of Neurological and sensorial sciences, University Hospital of Siena

Corresponding author: stefano.sartini83@gmail.com

Keywords: lithium intoxication, metabolic encephalopathy, extra-pontine myelinolysis

This case concerns a patient in whom a renal failure caused by hypernatremia leads to a fatal hyperosmolarity with high sodium values and extra pontine myelinolysis documented on brain MRI.

The patient, a 75 yo woman, was transferred on 30/12 in our Advanced Emergency Department, sent by a spoke center for lithium intoxication manifested acutely with diffuse weakness, slurred speech and drowsiness. Glasgow coma scale (GCS) 15/15, stable haemodynamics. Brain CT scan performed in acute, chest X-ray, abdomen X-ray and abdominal ultrasound were negative. EKG: normal. At Blood tests renal impairment, sodium (152 mEq/l), lithium (2.36 mmol/l). Arterial blood gas analysis (BGA) showed metabolic acidosis with increased anion gap and severe hyperosmolarity with sodium increased (mOsm 317.3 mmol/kg; Na⁺ 156 meq/l); so were administered hydration with hypotonic NaCl⁺ and 0.45% and glucose solution continuous infusion ev. On 31/12 deterioration in neurological status with GCS (11/15); BGA shows normalization of pH, osmolarity 320.8 mmol/kg and sodium of 157 mEq/l. Electroencephalogram (EEG) showed a pattern compatible with metabolic encephalopathy. The same evening the patient presented fever, so was performed chemical and physical examination of the urine that showed little concentrated urine (specific gravity of 1004) and the context of infection, therefore was initiated a broad spectrum antibiotic therapy. On 01/01 the patient had GCS 4/15, flaccidity in all four limbs with absence of reflexes, low blood pressure and oxygen desaturation. EGA showed initial sodium and osmolarity reduction and lactate increase. Repeated brain CT scan that showed no acute lesions. BGA repeated the same day showed progress in reducing osmolality and sodium levels further lactate increase. On 02/01 GCS 3/15, PA 70/30 mmHg, so was

started circulation supporting with norepinephrine. EGA showed moderate improvement in saturation serum sodium concentration 151 mEq/l, osmolarity 310 mmol / kg) and pH 7.43. Blood tests showed creatinine 3.3 mg/dl, urea 208 mg/dl, increase of inflammatory markers and progressive reduction of lithium. On 03/01 hemodynamic status was complicated by the onset of atrial fibrillation with high ventricular response. BGA showed sodium 148 meq/l and osmolarity 303.9 mmol/kg. Since the persistence of GCS 3/15 despite electrolyte and osmolarity improved, was decided to perform brain MRI that showed extra-pontine myelinolysis.

Patient died about four hours after the MRI execution.

In our case report the primum movens was likely an accidental overdose of lithium in coincidence of a diarrhoeic episode. Although is well known that lithium intoxication can cause renal diabetes insipidus (1,2,3,4,5), there isn't also known in the literature that this pathophysiological condition can precipitate a fatal disionia like the one we found ourselves faced in our patient.

This sequence of events caused a rapid increase of sodium levels and osmolarity in plasma(7,8). Extra-pontine myelinolysis was the explanation of the severely alteration of neurological status that perpetrated despite a progressive reduction of lithium, sodium and osmolarity plasmatic levels(9).

This clinical case should make us reflect on the potential dangers of Lithium, often given too easily by not expert physicians to elderly, poorly compliant, patient(10,11,12); it is also important to consider the importance of close monitoring of plasmatic lithium levels, and to pay attention to clinical signs such as a persistent polyuria because that could be an important early warning sign. It is therefore useful to reiterate that, if we will face again a case of lithium intoxication with altered neurological status despite improving of blood tests, we will have to consider this rare but possible complication; considering the foregoing, it is recommended, in similar cases a careful ion monitoring and a prudent normalizing therapy.

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Rez de Jardin poster area

DON'T FORGET HOT WATER: THE CASE OF A STINGRAY STING

Jérémy Alves Nunes (1), Véronique Gérard (1), Caroline Boulouffe (1)

1. emergency department, Hopital Mont godinne, Yvoir, Belgium

Corresponding author: jerean@gmail.com

Keywords: stingray sting, hot water, tropical

We describe the case of a 17 year old man who presented to the Emergency Service of Belgian Hospital for a stingray sting. The stingray sting occurred when his left hand was immersed in the aquarium's specimen (Potamotrygon motoro) he just bought in a Belgian pet shop. Few minutes

later, an intense pain and an erythema appeared closed to the wound. The pain became dreadful and the erythema spread to the entire left arm. No pain killer was taken.

When he presented to the Emergency Service, he complained about the pain which looked like a burn and the erythema. He showed no other complaints. No past history of allergy. We give a tradonal odis at the entry in the emergency department but there was no effect within 20 minutes.

Upon physical examination, blood pressure was 140/70 mm Hg, pulse 100 beats/min, respiratory rate 20 breaths/min, oxygen saturation 100% on room air and temperature 37°C. Examination of the left hand and left forearm showed a diffuse erythematous rash with a small stain and a sting on the palmar surface of the third phalanx of the fifth finger. The cardiopulmonary, abdominal and neurological examination was unremarkable.

An ultrasound of the finger was performed to ensure the absence of a residual foreign body (residual sting).

Facing this uncommon incident with a tropical animal, we contacted the Poison Control Center and we made a rapid internet literature review. As proposed, the left arm was immersed in hot water (30-37°C). Within 15 minutes, the pain decreased and after 30 minutes, it disappeared. Monitoring of 12h was achieved without any significant event. We started an antibiotic therapy with Amoxycilline and Clavulanic Acid.

With the emergence of these new types of tropical animals in Western countries, we could meet more frequently these kinds of incident. Hot water works by reducing pain because the toxin is heat-labile. So hot water deactivates the protein complex that consist the toxin.

With respect to this type of stingray, few cases are reported in the literature(1). In 2007, a study was conducted on 119 cases. In 88% of patients, only the immersion in hot water was a sufficient analgesic effect after thirty minutes. If an analgesic is associated, 100% of patients are relieved after 30minutes. An important aspect in the follow up is significant risk of wound's infection. So emergency physicians must ensure absence of residual sting (ultrasound) and an antibiotic (quinolone) must be started. The tetanus vaccination should also be checked.

References :

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PATIENT WITH ALTERED MENTAL STATUS OF MULTIPLE CAUSES

Ioan Cosmin Muntean, Maria-Alina Iliescu, Ramona Andris, Adriana Babeti

Emergency Department, Emergency County Hospital Timisoara, Timisoara, Romania

Corresponding author: ioancosminmuntean@yahoo.com

Keywords: Atrioventricular third degree block, Hypoglycemia, Hypoxia

Introduction

Altered mental status is a clinical status caused by processes that affect sensory functions, processes affecting consciousness or a combination of both. Altered mental status may have a lot of causes: causes that affect diffuse the brain and causes related primary to CNS disorders. Among the first category with high frequency, are: hypoglycemic encephalopathy, hypoxic encephalopathy and toxic encephalopathy.

Case report

Patient I.L. aged 70 years, male gender, in rural area (distance about 55 km from the hospital) have difficulty in breathing and reduced consciousness, which is why the family requested an ambulance. The patient was known with multiple diseases: type 2 diabetes, heart failure NYHA III, hypertension stage II and dilated cardiomyopathy secondary to ischemic heart disease and toxic, chronic ethanol liver disease. B2 crew found a patient with reduced conscious state and episodes of psychomotor agitation. First patient assessment: AV=70/min, BP=70/30 mmHg, FR=16/min, SO₂= 80%, GCS=9/15, glucose=26 mg/dl. After administration of O₂ and and hypertonic glucose the patient's mental status has improved, the patient was conscious, slightly drowsy. Because the patient remains hypotensive and has a low SO₂, the crew decided the hospital patient transport.

On arrival at E.D., the patient was conscious (GCS = 15/15) with episodes of drowsiness and confusion, AV=40/min, BP=80/50 mmHg, SO₂=80%, glucose=180 mg/dl, T=36°C. We continue patient monitoring, clinical and biological evaluation in resuscitation room. It performs EKG showing three degree atrioventricular block and QRS complex over 120 ms. Considering hypotension and clinical signs of congestive heart failure is administered atropine but unanswered. Because the patient is at risk of asystole continuing use of atropine and consider electrostimulation therapy. Since the patient does not recover full mental status, and for electrical require sedation and analgesia which would lead to worsening mental status and would have imposed airway prosthesis and associated patient had blood pressure values below 90 mmHg, it was consider alternative medication namely dopamine witch after administration produced increased ventricular rate, reducing the degree of block (2nd degree AV block type 1) and increased BP, which subsequently allowed the administration of diuretic. As a result, the electrostimulation was temporarily abandoned without losing sight of. Due to the increase in heart rate, O₂ and diuretic administration, patient's mental status was improved, and increased TA and SO₂. The patient became alert, oriented and cooperative. After correcting hypoglycemia, ventricular rate, and SO₂, the patient's mental status was significantly improved, without residual neurologic signs.

The patient was hospitalized in coronary intensive care unit, where was continued monitoring , where he presented another transient episode of third degree atrioventricular block. Continue patient assessment

(transthoracic echocardiography) in order permanent electrostimulation and resynchronization therapy.

Conclusion

In addressing the patient with altered mental status, evaluation and treatment overlap and are often performed simultaneously. As any critical patient, evaluation begins with airway, breathing and circulation. Immediate attention should be given reversible causes of mental status alteration such hypoglycemia. General examination and assessment of vital signs can detect other causes of altered mental status such as hypoxia - secondary to congestive heart failure and low cardiac output - second degree atrioventricular block and dilated cardiomyopathy with heart failure. This patient due to multiple pathology, presented several reasons - mentioned above - which led to altered mental status and required a comprehensive assessment in the emergency department and the severity imposed a rapid intervention by medical staff.

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Rez de Jardin poster area

FROM URINARY TRACT INFECTION TO PNEUMOPERITONEUM PNEUMOPERITONEUM IS A COMMON COMPLICATION OF PERFORATED PEPTIC ULCER. WE PRESENT A CASE OF UNEXPECTED PNEUMOPERITONEUM IN A PATIENT WITH SYMPTOMATOLOGY OF URINARY TRACT INFECTION.

José Andrés Sánchez Nicolás (1), Luis Alberto Guevara Molano (1), Paula Lázaro Aragüés (1), Marina Vidal Martínez (1), Josefa María Pérez Sánchez (1), Antonio Mellado Ferrandez (1)

1. Emergency Department, Hospital General Universitario Reina Sofía., Murcia, Spain

Corresponding author: lguevara57@yahoo.com

Keywords: Abdominal pain, Urinary tract infection, Pneumoperitoneum

Purpose of visit:

Abdominal pain

Personal History:

No known medicine allergies, no high blood pressure, no diabetes mellitus, no dyslipidemia, no known bronchial disorders or heart disease. She Was referred to Gastroenterology in 2005 to dismiss digestive pathology in relation to the atypical chest pain for myocardial ischemia. The patient refused the performance of abdominal ultrasound and gastroscopy

Toxic Habits: Not Related

Chronic Treatment: NSAID (non-steroidal anti-inflammatory drugs)

Current Illness:

44 Year old female came to the Emergency room at 04:00 suffering from a squeezing pain in the left hypochondriac and epigastric region of one month duration. She was

discharged at 08.00am and diagnosed with epigastric pains with urinary tract infection that was treated. 6 hours later she returned with intense squeezing pain in her epigastric radiating down towards the left hemithorax and neck accompanied by nausea, with alternating pain throughout the last month, that have just got worse within the past few hours. This refers to vomiting nutritional content twice this morning. Constipation progressing over three days. No fever, is not due to dietary transgression. Due to taking NSAID for two days one tablet every eight hours.

Physical Examination:

Initially the patient is:

Conscious and oriented. Eupneic. Blood Pressure 137/99, heart rate 100 bpm.

temperature 36.9 ° C, oxygen saturation 97%.

Thorax: Not tender to palpation

Cardiac auscultation: Rhythmic, no audible murmurs

Pulmonary auscultation: Breathing sounds, no other pathological sounds.

Abdomen: soft and depressible. Painful to deep palpation in the epigastrium and left hypochondriac region. Without irradiation, without signs of peritoneal irritation, no masses or organomegaly, Blumberg and Murphy negative. Renal fist percussion negative. Bowel sounds preserved.

Lower limbs: No edema or signs of deep vein thrombosis.

Pedis pulses present and symmetrical.

Neurological physical examination: No neurological deficit.

Second consultation:

Conscious and oriented. Eupneic. Blood pressure 129/98 mmHg, heart rate 125 bpm, temperature 36 ° C, oxygen saturation 97%.

Thorax: Tenderness in the middle of thorax.

Cardiac auscultation: Tachycardia without audible murmurs.

Pulmonary auscultation: Breathing sounds, no other pathological sounds.

Abdomen: soft and depressible. Painful to deep palpation in the epigastric and left hypochondriac region. Without irradiation, without signs of peritoneal irritation no masses or organomegaly, Blumberg and Murphy negative. Renal fist percussion negative. Bowel sounds preserved.

Lower limbs: No edema or signs of deep vein thrombosis.

Pedis pulses present and symmetrical.

Neurological physical examination: No neurological deficit.

Complementary Examinations:

* First consultation:

Electrocardiogram: sinus rhythm at 90 bpm, axis at 0 °. Narrow QRS, PR less than 0.20 msec. No abnormalities of ventricular repolarization.

Laboratory investigations:

biochemistry: Glucose 126 mg / dl, 25mg/dl Urea, Creatinine 0,8 mg / dl, Sodium 137 mmol / l, potassium 3.6 mmol / l, amylase 31 u / l, CPK 36, Troponin I 0,000.

Blood Count (CBC) Leukocyte 12000 UL, (80% neutrophils), Hemoglobin 15.6 g / dL, hematocrit 41.4%, MCV 87.3. Platelets 336000 UL.

The patient's urine was positive for urinary tract infection.

Thorax X-Ray: No cardiomegaly. No infiltrates or consolidations, unobstructed costophrenic angles.

Abdomen upright position: Psoas lines and sides maintained and absence of air in the left side of the abdomen, abundant faeces and colon gas and rectum ampulla. No signs of obstruction or fluid levels or dilated bowel loops.

* Second consultation:

Electrocardiogram: sinus tachycardia at 110 bpm, axis at 0 °. Narrow QRS, PR less than 0.20 msec. No abnormalities of ventricular repolarization.

Laboratory:

Biochemistry: Glucose 145 mg / dl, urea 36 mg / dl, creatinine 1 mg / dl, sodium 135 mmol / l, potassium 3.6 mmol / l, amylase 55 U / L, CK 86, Troponin I 0,000.

CBC. Leukocyte 17370 UL, (94.7% neutrophils), Hemoglobin 17 g / dL, hematocrit 44.7%, MCV 87.3. Platelets 372000 UL.

Thorax X-ray: No cardiomegaly. Image support bilateral pneumoperitoneum.

Urgent surgery consultation will be performed:

That values the patient and we will discuss the suspected diagnosis of perforated peptic ulcer which requires emergency surgery.

Clinical judgment:

- Acute abdomen.

- Pneumoperitoneum for perforated peptic ulcer, operated by emergency laparotomy.

Differential diagnosis:

1-)Perforations of the hollow viscera:

-perforated peptic ulcer.

-Intestinal ischemia-complicated.

-Intestinal obstruction complicated.

-Complication of inflammatory processes (appendicitis, diverticulitis, toxic megacolon, necrotizing enterocolitis etc.)

-Open or closed abdominal trauma.

-Perforation for foreign body ingestion.

2)Iatrogenic:

-Surgery.

-Endoscopic Processes.

-Peritoneal Dialysis.

-Installation percutaneous feeding tubes.

- Vigorous CPR.

-Positive pressure mechanical ventilation.

-Instrumental gynecological.

3)Pneumothorax / pneumomediastinum.

4)Pneumatosis intestinalis Cystoides.

5)Sexual Intercourse, vaginal insufflations.

6) Corticosteroids.

7)Changes that can mimic intraperitoneal air and lead to false pneumoperitoneum:

-Bowel loops interposed between liver and diaphragm.

-Atelectasis in the lung bases.

-Pneumothorax with x-ray in supine position.

Treatment and Progress:

Following assessment by surgeon on duty, the patient passes to the emergency beds for observations, where primperan, ranitidine, serotherapy, Perfalgan and orfidal was administrated with partial clinical improvement. After taking vital signs and decreasing blood pressure to 80/40 gelafundin and fluids therapy is administered. Due to no clinical improvement the surgeon on duty was notified and

decided to carry out an emergency laparotomy, where there was presence of purulent liquid in the abdominal cavity and an ulcer on the front of the pylorus of a 2cm diameter. They performed over sewing of the ulcer and abundant cleaning of the abdominal cavity. Three days after surgery, the patient showed signs of acute hemorrhage; they decided to perform an endoscopy, visualizing active bleeding from the ulcer. Following this they carried out a duodenotomy finding a bleeding artery vessel on the edge of the ulcer, they proceeded to hemostasis and pyloroplasty and admission to the Intensive Care Unit with satisfactory progress. Days later she started to tolerate an oral diet, being highly asymptomatic.

Conclusions:

-Facing the abdominal pain that was present on arrival to the Emergency Room, its important to carry out a through clinical history, physical examination and laboratory tests, and medical history of the patient.

-Anamnesis for taking gastroerosive drugs (NSAIDs) for any abdominal pain.

-All emergency doctors, facing abdominal pains in the epigastric of a squeezing characteristic radiating to the hemi thorax, shoulder and neck, dismiss heart pain vs gastric ulcer.

-Relevance of performing an x-ray of the thorax and abdomen upright position, to dismiss signs of excess air in the peritoneal cavity during abdominal pain.

-The presence of pneumoperitoneum, the behavior should cause reason to suspect perforation of a hollow organ, and therefore, perform an emergency laparotomy.

-In selected cases of pneumoperitoneum, where medical history, clinical history, physical examination and complementary tests are favorable, you can opt for non-surgery management with close monitoring of the patient and, before any deterioration, urgent laparotomy.

-Making the differential diagnosis of pneumoperitoneum consider false positives: bowel loops interposed between the liver and diaphragm, atelectasis in the lung bases and pneumothorax with the x-rays in the supine position.

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MANAGEMENT OF ACUTE ISCHEMIC STROKE IN EMERGENCY DEPARTMENT - THROMBOLYTIC THERAPY WITH ACTILYSE

Eva Fodor (1), Gabriela Holanyi (1), Adela Golea (1)

1. Emergency department, County Emergency Hospital Cluj, Cluj Napoca, Romania

Corresponding author: fodor.eva85@yahoo.com

Keywords: Acute Ischemic Stroke, Thrombolytic Therapy with Actilyse, Positive Outcome after Thrombolytic Therapy

STUDY DESIGN: This study is a case report.

OBJECTIVE: To report a case of acute ischemic stroke presenting with left hemiparesis and dysarthria, treated with thrombolytic therapy and having a favorable outcome.

SUMMARY OF BACKGROUND DATA: The prognosis of ischemic stroke depends on the patients' age, comorbidities, the extension of the lesions and complications after stroke. In old patients with multiple comorbidities, the outcome is mostly poor and the hemorrhagic transformation is frequent.

METHODS: A 56-year-old woman was transported by emergency medical team presenting with left hemiparesis and dysarthria, left deviation of the tongue, left facial hemiparesis, high blood pressure (210/100mmHg) with sudden onset, approximately 30 minutes before arrival to the ED. In terms of the patient's medical history, we mention insomnia and hyatal hernia. Based on the clinical and paraclinical examinations, the diagnosis of acut ischemic right lenticular stroke is formed. In collaboration with the neurology department, the thrombolytic therapy is initiated in the ED (2h from the onset of the symptomes), the patient being eligible for Actilyse treatment (5mg bolus i.v. and 45mg i.v./1h). During the next 12h, the patient remains in observation in the ED, being stable and without presenting any complications. Subsequently, she was transferred to the neurology ward.

CONCLUSION: When it comes to ischemic stroke, few cases are considered eligible for thrombolytic therapy, mostly due to the late arrival in the ED and the associated comorbidities. The particularity of the case is the positive outcome of the chosen therapy and the lack of its side effects.

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A CASE OF SYSTEMIC LUPUS ERYTHEMATOSUS

Lucio Brugioni (1), Cristina Gozzi (1), Maurizio Tognetti (1)

1. Emergency department, Azienda Ospedaliero Universitaria Policlinico di Modena, Modena, Italy

Corresponding author: brugioni.lucio@policlinico.mo.it

Keywords: serositis, systemic lupus erythematosus, abdominal pain

BK a 32 y.o. man, was admitted to our department because of abdominal pain and vomiting. Blood exams showed increasing of inflammation index. Abdominal US revealed free fluid. A total body TC showed axillary, inguinal and abdominal lynphadenitis, pleuric effusion, ascites and thick intestine. Patient presented alopecia and erythema of the face and the skin was biopsed. ANA test on blood resulted positive (1:1280). The hystological exam of the skin revealed the diagnosis of systemic lupus erythematosus. The patient was treated with high doses of corticosteroid; abdominal pain improved and pleuric effusion and ascites disappeared.

Some days after he referred important chest pain: troponin increased over 100 ng/ml (normal value until 0,1 ng/ml), ECG was modified and echocardiogramm showed pericardial effusion .

Cardiac RM revealed oedema of ventricular walls as in myocarditis. Patients were treated with cyclophosphamide with benefit: pericardial effusion and chest pain disappeared.

The patient was discharged after 1 month and he was entrusted to a rheumatologist.

Systemic lupus erythematosus is an autoimmune disease in which organs undergo damage by autoantibodies and immunocomplexes. 90% of people involved are women.

This disease most often harms the heart, joints, skin, blood vessels, liver, kidneys and nervous system. The course is unpredictable with periods of illness alternating with remissions.

Systemic lupus erythematosus is a classical item in differential diagnosis because symptoms vary widely and come unpredictably. Diagnosis can be very difficult.

As the American College of Rheumatology established, a person has SLE if any 4 out of 11 symptoms are present simultaneously or serially on two separate occasions: malar rash, discoid rash, serositis, oral ulcers, arthritis, photosensitivity, hematologic disorder, renal disorder, ANA test positive, immunologic disorder and neurologic disorder as seizures or psychosis.

Treatment can include corticosteroids and antimalarial drugs, intravenous immunoglobulins and cytotoxic drugs as cyclophosphamide.

Our case is exceptional because it is rare that a young man is affected. He presented 4 out of 11 symptoms: malar rash, serositis, hematologic disorder and ANA test positive.

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Rez de Jardin poster area

AN INTERESTING CASE OF PENETRATING CHEST TRAUMA.

Mohammad Ansari (1)

1. Emergency Medicine, George Eliot Hospital, Nuneaton, United Kingdom

Corresponding author: zransari@gmail.com

Keywords: Chest trauma, Penetrating, Glass

A 52-year-old lady weighing about 20 stones was brought to the Emergency Department by ambulance with the history that she fell through a glass door which broke. She complained of a glass piece sticking out above her right clavicle.

On clinical examination her pulse rate was 82 per minute with a blood pressure of 120/80 mmHg. She looked very well with no respiratory compromise. She was comfortably sitting in a chair. A 3 cm wide glass piece was noted in the right supraclavicular area which was firmly stuck to the skin. I decided not to remove it and instead requested a chest x-ray.

The chest x-ray to my horror showed a 10-inch long glass piece which had penetrated the chest piercing through the lung.

She was taken to theatre by the thoracic and vascular surgeons. On removal of the glass piece it was noticed that it had passed through the subclavian artery and the subclavian vein. Both of these required repair. She made a full recovery.

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Rez de Jardin poster area

MANAGEMENT OF ACUTE INFRARENAL AORTIC THROMBOSIS WITH FLACCID PARAPLEGIA IN ROMANIA: A CASE REPORT

Adela Golea (1), Eugenia Maria Muresan (1)

1. Emergency Department, County Emergency Hospital Cluj, Cluj-Napoca, Romania

Corresponding author: dr.eugenia.muresan@gmail.com

Keywords: acute infrarenal aortic thrombosis, flaccid paraplegia, abdominal angio-CT scan

STUDY DESIGN: This study is a case report.

OBJECTIVE: To report a case of a patient with aphasia, anisochoria, flaccid paraplegia (predominantly of the inferior right limb), hypoesthesia, diffuse abdominal pain and high blood pressure, who was diagnosed with acute infrarenal aortic thrombosis.

SUMMARY OF BACKGROUND DATA: There have been few reports in the literature regarding acute aortic thrombosis presenting with paraplegia. Acute aortic occlusion is a serious vascular surgical emergency with significant morbidity and mortality, even when recognized promptly and treated appropriately.

METHODS: A 82-year-old man was referred to our emergency department (ED) with aphasia, anisochoria, flaccid paraplegia (predominantly of the inferior right limb), hypoesthesia, diffuse abdominal pain and high blood pressure, with a sudden onset of less than 2h at the time of the arrival in the ED. The clinical examination raised the primary suspicion of ischemic stroke (and the suspicion of brain metastasis secondary to a possible gastric carcinoma), thus a contrast head CT was performed (at approximately 3h from the onset of the symptoms). As the patient's condition improved after symptomatic management and the CT scan ruled out both diagnostic suspicions, a surgical consult was performed and the patient was referred to the Neurology Clinic for further investigations. At 14h from the onset of the symptoms, the patient returned to the ED for inter-clinic examinations (cardiology and cardiovascular surgery consults), as the patient's condition got worse. The abdominal angio-CT scan indicated an acute infrarenal aortic thrombosis, yet the patient was not a viable candidate for a surgical treatment. As the patient's condition altered by the time of the final diagnosis and there were no beds available on an ICU ward, the patient remained in the ED for monitoring and palliative care for another 20h, when the patient died due to cardiac rhythm abnormalities.

CONCLUSION: Acute aortic occlusion is a catastrophic event and may present with paraplegia, because of acute spinal cord ischemia. The case is noteworthy due to the its clinical particularities (the abundance of neurological symptoms) and the rareness of the pathology.

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RARE CASE REPORT: SEVERE DCI-INCIDENT DURING A FLIGHT

C. Bachtis (1), V. Kekeris (2), Spiros Papanikolaou (3), D Pyrros (4), G. Sidiras (5), S Tsonas (6)

1. medical department, EKAB,, Athens,, Greece

2. Medical department, EKAB,, Athens, Greece

3. Medical department, EKAB, Athens,, Greece

4. Medical department, EKAB, Athens, Greece

5. Diving & Hyperbaric Medicine Unit,, Athens Naval Hospital, Athens, Greece

6. EMT department, Greece., EKAB, Athens, Greece

Corresponding author: papanikolaouspiros@yahoo.com

Keywords: Altitude decompression illness, scuba diving, aviation medicine

Purpose: The purpose of this study is to present a rare and interesting case of management of acute altitude decompression illness (DCI) occurred during a flight with an airliner.

Material and methods: We meticulously documented the case and all parameters related: Type of diving, time elapsed from last dive to flight, physiological data of the patient, habits and personal medical record, complete flight data, flight envelope of the aircraft, emerge and progress of the incident, management on flight, management after a deviated emergency landing in "El. Venizelos" Athens Intl. Airport (AIA) and definitive treatment in the decompression chamber in the Athens Naval Hospital.

Results: The incident regarding a 40 years old French SCUBA-diver, started immediately after take-off from Hurghada (HRG), Egypt for a flight to Marseille (MRS), France. The patient showed some mild non-specific symptoms during take-off (fatigue, mild discomfort). His condition gradually deteriorated to a severe medical emergency, after approximately one flight hour. Elementary first aid was given on board, consisting of rehydration attempts and oxygen administration. Immediately after landing, the patient was handed over to the EP/FltSgn of AIA and received an emergency treatment at the AIA Medical Station. Upon arrival the patient was found with a GCS 10, dyspnea, tachypnea, mild hypoxia, hypotension, tachycardia and dehydration. After initial stabilization consisting of aggressive rehydration, oxygen treatment and medication, the patient was transferred with a MICU to the Hyperbaric Treatment Unit at the Athens Naval Hospital. After a 7-day hyperbaric oxygen treatment (HOT) the patient was discharged from the hospital and was able to return home without any sustained health damage.

Conclusions: In a suspected DCI incident during a flight, immediately after emerge of even mild symptoms, the patient must receive specialized treatment as soon as possible to avoid any sustained health damage. Safety guidelines should always be followed, in order to prevent severe and permanent health damage

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SINUSITIS INDUCED SUBDURAL EMPYEMA: A CASE REPORT

Yasin Bozkurt (1), Gozde Simsek (1), Mesut Zorlu (1), Ozlem Guneyysel (1)

1. Emergency Medicine Clinic, Dr.Lutfi Kirdar Kartal Training and Research Hospital, Istanbul, Turkey

Corresponding author: gsimsek79@gmail.com

Keywords: subdural empyema, sinusitis, headache

Sinusitis Induced Subdural Empyema: A Case Report

Background: Subdural empyema is a purulence aggregation in the area between the outermost layers of the meninges, the dura and the arachnoid. It is commonly a complication of sinusitis and less frequently otitis media or neurosurgical procedures. Subdural or extradural empyema secondary to sinusitis, so called 'sinusitis-induced' empyema, occurs in older children, predominantly in adolescent and young men, and is responsible for 50% to 70% of all subdural empyemas. Although there are various improvements achieved in imaging and treating fields, the morbidity and mortality ratio of subdural empyema remains high

The clinical presentation of sinusitis induced empyema is less well recognized, and the diagnosis is often delayed. The onset may be variable and is often masked by prior antibiotic treatment. It is necessary to diagnose and treat intracranial infections promptly. We report a case of subdural empyema complicating sinusitis in an otherwise healthy young men.

Case Report: A previously healthy 16-year-old male presented to the emergency department with complaints of a frontally localized severe headache that began 1 weeks before admission and new-onset aphasia. The headache was persistent and temporarily disappeared after treatment with paracetamol. He received antibiotic (amoxicillin clavulanate) treatment for an upper respiratory tract infection 2 weeks before admission. He had a history of acute typical symptoms of sinusitis associated with upper respiratory tract infection, but any imaging for sinusitis was done.

On physical examination, the vital signs were as follows: temperature 37.2 °C, pulse 88 beats per minute, respiration 17 breaths per minute, and blood pressure 120/70 mm Hg. The pupils were equal and reactive. Nuchal rigidity and meningeal signs were absent. Physical examination of the heart and lungs revealed no abnormality. The abdominal examination was unremarkable.

The laboratory results were as follows: white blood cell 16700 per ml with %84 segmented neutrophils %10 lymphocytes, haemoglobin was 9.8 gr/dl and platelets 175000 per ml. Chemical parameters were normal ranges. Computed tomography (CT) demonstrated aeration loss in ethmoid sinus and a consolidated area in the left frontal sinus. Cranial MRI revealed frontal subdural empyema and a local edematous appearance in parenchyma (Fig.). Treatment with ceftriaxone (100 mg/kg per day) and metronidazole (30 mg/kg per day) was initiated. After consultation with neurosurgeon the patient was taken to the operating room for craniotomy and drainage of the empyema. The patient was discharged from the hospital 4 weeks after admission and was neurologically normal at discharge and no symptoms were identified upon follow-up at the outpatient clinic.

Discussion and Conclusion: Intracranial complications following sinusitis are unusual and rapidly fatal if not diagnosed and treated promptly such as subdural empyema. A high degree of suspicion is mandatory for emergency physicians especially in patients with history of sinusitis with severe progressive headache that is unresponsive to treatment. Early recognition and surgical and medical treatment are essential to reduce morbidity and mortality.

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SILENT KILLER: A CASE OF COLON CANCER

Paula Lázaro Aragüés (1), José Andrés Sánchez Nicolás (1), Luis Alberto Guevara Molano (1), Josefa María Pérez Sánchez (1), Marina Vidal Martínez (1), Antonio Mellado Ferrandez (1)

1. Emergency Department, Hospital General Universitario Reina Sofía., Murcia, Spain

Corresponding author: lguevara57@yahoo.com

Keywords: Bowel habit, Intestinal obstruction, Colon cancer

Purpose of visit:

Abdominal pain

Personal History:

No known medicine allergies, no high blood pressure, no diabetes mellitus, no dyslipidemia, Obstructive Sleep Apnea treated with Bypap.

Personal Surgery history: bilateral groin hernia, left arm.

Toxic Habits: Not Related

Chronic Treatment: Not Related

Current Illness:

57 Year old male came to the Emergency room suffering from a cramping abdominal pain of three days duration, with no nausea or vomiting associated. Three days without bowel movements or gas emission, previously normal bowel habit. No weight loss. No fever.

Physical Examination:

Conscious and oriented. Eupneic. Blood Pressure 132/75 mmHg, heart rate 70 bpm.

temperature 36.7° C, oxygen saturation 100%.

Thorax: Not tender to palpation

Cardiac auscultation: Rhythmic, no audible murmurs

Pulmonary auscultation: Breathing sounds, no other pathological sounds.

Abdomen: soft and depressible. Painful to deep palpation in the left iliac fossa. Without irradiation, without signs of peritoneal irritation, no masses or organomegaly, Blumberg and Murphy negative. Renal fist percussion negative. Bowel sounds decreased.

Rectal exam: Empty rectal ampulla without tumors or masses, fecal impaction or manes.

Lower limbs: No edema or signs of deep vein thrombosis.

Pedis pulses present and symmetrical.

Neurological physical examination: No neurological deficit.

Complementary Examinations:

Electrocardiogram: sinus rhythm at 66 bpm, axis at 15°. Narrow QRS, PR less than 0.16 msec. No abnormalities of ventricular repolarization.

Laboratory investigations:

biochemistry: Glucose 93 mg / dl, 36mg/dl Urea, Creatinine 0,8 mg / dl, Sodium 136 mmol / l, potassium 4.2 mmol / l, amylase 47 u / l.

Blood Count (CBC) Leukocyte 8890 UL, (67% neutrophils), Hemoglobin 10.4 g / dL, hematocrit 33.2 %, MCV 67.5. Platelets 307000 UL.

Thorax X-Ray: No cardiomegaly. No infiltrates or consolidations, unobstructed costophrenic angles.

Abdomen upright position: dilated bowel loops with fluids levels.

Tac abdomen: colon carcinoma 5 cm length, which produces total stenosis. Located in the splenic flexure. No liver metastases are detected. Some changes in mesenteric and latero aortic chains are detected. All less than 1 cm in diameter. Left adrenal nodule.

Clinical judgment:

- Stenotic colon cancer

Differential diagnosis:

-Hemorrhoids

-Paralytic ileus

-Obstruction and intestinal pseudostrucción

-Intestinal ischemia

-Benign tumors

-Nonspecific ulcers of the rectum and amoebiasis

-Irradiation and radiation proctitis

-Endometriosis

-Dissemination of other pelvic tumors

-Specific infections: syphilis, proctitis tuberculosis, sarcoidosis, actinomycosis and lymphogranuloma venereum.

-Chronic inflammatory processes: are example fistulas and abscesses, rectal diverticulitis, Crohn's disease, ulcerative colitis, sclerosing injections for the treatment of hemorrhoids, Systemic Lupus Erythematosus.

-Hirschprung's disease

Treatment and Progress:

Following assessment by surgeon on duty who decided to carry out an emergency laparotomy where there a small amount of free fluid cytology is taken, marked dilatation of the colon to splenic angle where objective tumor infiltrating stenotic. A small size biopsy

was taken from an hard consistency injury from the left lower segment of the liver.

Satisfactory and uneventful postoperative, was discharged five days after surgery.

-Peritoneal fluid cytology: morphological aspect: a number of polymorphonuclear leukocytes, lymphocytes, numerous macrophages, Detritus abundant.

Cell Type: several mesothelial cells, no atypia identified.

Summary diagnosis: negative for malignant cells, inflammation.

-Material biopsy: Macroscopic description: surgical specimen of 26 cm, tumor size: 6cm, with distance from the nearest surgical margin of 6 cm. Local extension of the tumor that occupies the total circumference of the bowel.

Microscopic description: moderately differentiated adenocarcinoma infiltrating the entire wall thickness, invading the adjacent bowel wall.

Conclusions:

-Facing the abdominal pain that was present on arrival to the Emergency Room, its important to carry out a through clinical history, physical examination and laboratory tests, and medical history of the patient.

-Relevance of performing an x-ray of abdomen upright position in adults with abdominal pain and almost normal physical examination.

-Supine and upright abdominal x-rays should be taken and are usually adecuated to diagnose obstruction; Thorax X-Ray also provides relevant information in the diagnosis.

-Suspect organic disease even though normal laboratory test.

-Suspect neoplastic etiology to abdominal pain in adults with changes in bowel habits.

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ABDOMINAL PAIN AND ST ELEVATION: A CASE OF TAKOTSUBO CARDIOMYOPATHY.

Ombretta Cutuli (1), Stella Ingrassia (1), Camilla Zawaideh (2), Alberto Valbusa (2), Paolo Moscatelli (1), Tommaso Barreca (1)

1. Emergency Department, IRCCS Azienda Ospedaliera Universitaria San Martino IST, Genova, Italy

2. Cardiology, IRCCS Azienda Ospedaliera Universitaria San Martino IST, Genova, Italy

Corresponding author: ombretta84@alice.it

Keywords: takotsubo cardiomyopathy, abdominal pain, emergency medicine decisions

A 59 year-old woman with history of hypertension and renal cancer surgically treated, presented to the emergency department with epigastric pain and vomit. She referred abdominal pain with uncontrollable vomit since five hours. She didn't report dyspnea, chest pain or palpitations. At the visit she seemed restless and diaphoretic, her pulse rate was 82 bpm, blood pressure 130/80, oxygen saturation 98%

and temperature 36°C. Her chest X-ray showed a big diaphragmatic herniation of the stomach; a nasogastric tube was positioned with drainage of 200 cc of gastric content, due to the uncontrollable vomit. She performed a 12 lead ECG that showed an ST elevation in D1-D2-D3- aVf and V4-V5-V6. Routine laboratory studies showed: mild leukocytosis, transaminase elevations (AST 101 U/L, ALT 82 U/L), ultra-sensitive Troponin I elevation (6.040 mcg/L). The patient was admitted to the cardiac intensive care unit (ICCU) and performed a Coronary Angiography that showed a characteristic pattern of apical ballooning at the left ventriculogram, in the absence of coronary atherosclerosis. Transthoracic echocardiography (TTE) showed apical ballooning on systole and confirmed hypokinesis of the left-ventricular mid-segments and apex with an estimated ejection fraction of 25%. During the following observation the patient complained about persistent abdominal pain and nausea: at the visit the abdomen was treatable but widely tender, peristalsis was present; the nasogastric tube drained more of 1000 cc of dark material that seemed fecaloid. Patient performed an urgent abdominal CT scan that showed herniation of fundus and body of the stomach between a posterior hole in the left hemidiaphragm. This defect did not need urgent surgical reparation. The patient continued observation in CICU and, before surgery, her TTE did not change; a pre-operative CT scan was performed and revealed an apical thrombus in the left ventricle that was confirmed by TTE. Ten days later she underwent successful repair of her defect. The TTE performed after surgery showed a normal left ventricle function but demonstrated increased size of the thrombus (1.47x 0.83 cm).

This is an unusual case of Takotsubo cardiomyopathy in which the cardiac syndrome is associated to a physical rather than a psychological stressful event. In the emergency setting it's important to define the treatment timing: in this case we decided to mitigate the abdominal symptoms before cath-lab; after that it was important to manage the surgical repair timing considering the cardiac instability and the necessity of anticoagulation.

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THE RARE REASON OF FEVER IN ADULTS; ROUND PNEUMONIA

Oguz Yardim, Emine Akinci, Tuba Safak, Yunsur Cevik
Keçiören training and research hospital, Emergency department, Ankara, Turkey

Corresponding author: emineakinci@yahoo.com

Keywords: fever, adults, round pneumonia

Introduction

Round pneumonia, also called spherical pneumonia, has been recognized since the 1970s as a clinical entity that usually occurs in children. Round pneumonia is most commonly caused by *S. pneumoniae* and may rarely be caused by other bacteria, while viral etiology such as

severe acute respiratory syndrome has also been seen in adults.

We report the case of an adult patient with round pneumonia who is successfully treated with antibiotic therapy.

Case report

A 29-year-old male consulted doctor because of fever and symptoms such as feeling cold, shivering, arthralgia, cough, sputum and constipation in last 4 days. The patient doesn't smoke or drink, has not an additional disease. Fever:39.1°C, blood pressure:123/73 mmHg, pO₂: 80 mmHg, Glasgow Coma Scale was:15, There were crackles on the right hemithorax. There was no abnormality noted in other systemic examination. At the bottom of the right thorax in chest x-ray of patient that there was a round lesion with increased consolidation well shaped (image 1). At the tomography images there was a smooth bourn lesion, assaying air bronchogram, compatible with pneumonia (image2). WBC was 6900/ml. Other laboratory parameters were in normal range. The patient considered as round pneumonia, than moxifloxacin 400mg/day over 7 days and ceftriaxone 1gr/day over 3 days added to medical therapy. In the control x-ray grapy on third day of treatment, it seen that the consolidated area is decreased (image 3). Finally claritromisine 1000mg/day over 15 days added to medical therapy. At the end of the treatment absolutely cure provided.

Discussion

Round pneumonia is a type of pneumonia and simulating pulmonary neoplasm or mass, but the outcome is usually good and no need for further evaluation.

Round pneumonia, a benign cause of coin lesions seen on chest radiography can often be difficult to distinguish from bronchogenic carcinoma. Although relatively uncommon in adults, this entity will probably be seen in most radiology practices and may lead to CT and biopsy.

Conclusion

Round pneumonia should be considered in differential diagnosis of fever even though it seems rarely in adults

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A RARE COMPLICATION OF BLUNT ABDOMINAL TRAUMA IN ADULT PATIENT

Gabriela Gagu (1), Ioana Nemes (2), Adela Golea (1)

1. Emergency Department, Cluj County Emergency Hospital, Cluj-Napoca, Romania

2. Emergency Department, Municipal Hospital Gheorgheni, Gheorgheni, Romania

Corresponding author: gabriela.gagu@yahoo.com

Keywords: Blunt abdominal trauma, Intraperitoneal bladder rupture, Retrograde CT cystogram

A RARE COMPLICATION OF BLUNT ABDOMINAL TRAUMA
IN ADULT PATIENT
GABRIELA GAGU, MD

County Emergency Hospital Cluj, Romania, Emergency Medicine Department

IOANA NEMES, MD

Municipal Hospital Gheorgheni, Romania, Emergency Medicine Department

ADELA GOLEA, MD, PhD

Lecturer of the University of Medicine and Pharmacy Cluj-Napoca

Head of Emergency Medicine Discipline

County Emergency Hospital Cluj, Romania, Emergency Medicine Department

STUDY DESIGN: This study is a case report.

OBJECTIVE: To report a case of a mild blunt abdominal trauma resulting with bladder rupture and extravasation of urine.

SUMMARY OF BACKGROUND DATA: Intraperitoneal bladder rupture occurs after direct blow to a distended urinary bladder (with increased intravesical pressure). Since urine continues to be drained into the abdomen, intraperitoneal ruptures may remain asymptomatic for many days, or present with nonspecific symptoms.

METHODS: A 45-year-old male addressing the emergency department of the Cluj-Napoca County Emergency Hospital for abdominal pain, oliguria and constipation. Detailed anamnesis revealed that four days prior to this examination the patient had suffered a blunt abdominal trauma/contusion while carrying a heavy object. The primary survey showed an alert, stable patient, an enlarged abdomen with a few old abrasions and minor ecchymosis on the lower abdomen and suprapubic region. During the secondary survey examination showed mild tenderness in the lower abdomen, decreased bowel sounds, the apparent integrity of the bony structures of the pelvis, no penile or scrotal hematoma, lack or blood at the urethral meatus and normal findings in the rectal examination. FAST examination revealed medium quantity of fluid in Morrison's pouch and the pouch of Douglas, with intact liver and spleen capsule, without liver or splenic hematoma, apparently intact urinary bladder. Hematologic values in this case were relatively benign, within range hematocrit, but chemical results showed electrolyte abnormalities with hyperkalemia, hyponatremia, uremia and high levels of creatinine, suggestive of severely decreased renal function. Next step in the management of this case was an abdominal and pelvic CT scan in order to have an accurate view and rule out abdominal organ injuries. The CT scan described a large amount of ascites fluid with liquid density, and two focal lesions in the liver of an uncertain etiology. The patient presented criteria for emergency hemodialysis, and later was admitted into a medical ward in order to determine the cause of the ascites and evacuate the fluid. Paracentesis was performed first day in admission, and the cytology and chemical examination of the fluid revealed increased levels of creatinine, three times above the serum level, thus considering the fluid to be urine. A retrograde CT cystogram was performed, which established the diagnosis of intraperitoneal bladder rupture.

CONCLUSION: 1. The case represented a challenge, first of all being a relatively minor trauma with mild symptoms. 2. Association of a rare and severe complication, not so

frequent with adult patients, bladder rupture with uroperitoneum could be a difficult stone for diagnosis in the emergency department. 3. Careful clinical assessment augmented with imaging (both ultrasound and CT scan) is necessary to establish a quick diagnosis and initiate treatment, in this particular case, surgical.

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THE HYPOPHOSPHORAEMIA: UNUSUAL CAUSE OF ACUTE RESPIRATORY DISTRESS SYNDROME (ABOUT A CASE)

Ibtissam Malajati, Hanane Ezzouine, Boubaker Charra, Abdelatif Benslama

Medical intensive care unit, ibn rochd hospital, casablanca, Morocco

Corresponding author: ibtissamalajati@hotmail.fr

Keywords: hypophosphoraemia, diabete, acute respiratory distress

The incidence of hypophosphoraemias is of the order of 0, 42 % in ICU patients. They can commit(hire) the prognosis for survival by shady cardiac, neurological and respiratory. We report the case about a diabetic woman, 31 years-old , admitted in intensive care unit for diabetic ketoacidosis, complicated with an acute respiratory distress syndrome and a tetraparesia in day 3 of the hospitalization; in spite of the glycemic balance. The unusual etiology was a deep hypophosphoraemia to 0,32 mmol / l, which was increased by the ground of the diabete, and the fast correction of the metabolic acidosis, a clinical symptomatology as result was represented by the respiratory distress syndrome and the neurological signs. The hypophosphoraemia constitutes a rare and unusual cause of acute respiratory distress syndrome, this is why we have to iclude phosphoremia in the standard biological check-up at every patient in intensive care unit as well as a preventive contribution of the phosphor to these patients at risk of depletion.

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NOT ALL ATRAUMATIC BACK PAIN IS SIMPLE LUMBAR PAIN

Nicoleta Cretu, Tomas Breslin, Adrian Moughty, John McInerney, Edward Brazil

Emergency Department, Mater Misericordiae University Hospital, Dublin, Ireland

Corresponding author: nicoletacretu14@yahoo.com

Keywords: back pain, neurological changes, plasmacytoma

Introduction

The lower back pain it is a frequent presentation in emergency department, indifferent the age of the patient. The following case describe the evolution of an apparent lower lumbar pain in a male patient of 44 years old.

Past medical history- not relevant, no trauma, non smoker, alcohol use occasionally.

No significant family medical history.

Emergency Medicine presentation

Male of 44 years old with history of lower back pain in the last 6 months, treated by the General Practitioner (GP)with Difene 75mg TDS and Tramadol 100mg TDS. The lower back pain is increasing in intensity 3 weeks prior emergency department presentation, moment in which the GP organized an MRI of lumbar spine which was reported as normal.

3 days prior emergency department presentation, the patient developped bilateral lower limb weakness associated with numbness and impossibility to walk.

At examination, the patient presented loss of power 2/5 on the left leg and 3/5 on the right leg, associated with numbness bilaterally, with impossibility to weightbear. The anal tonus was normal and he had hyperreflexia.

Imaging

x-ray of the lumbar spine was reported as normal, but on thoracic x-ray it was visible a burst pathological fracture of T10 vertebral body with 80% loss of vertebral body height anteriorly.

MRI of the entire spine showed 5.1 cm tumour centred on the T10 vertebral body with associated canal stenosis and spinal cord compression.

Treatment

The patient required admission on the Orthopaedic Team with secondary posterior stabilisation between T8/T9 and T12/L1.

The biopsy was reported as solitary bone plasmacytoma.

Conclusion

The causes of back pain in patients presented in emergency department are multiple: renal colic, lumbago, dyscopythia and it is our responsibility to make an accurate differential diagnosis, in order to discover a potential life treating pathology.

The particularity of this case it is the age of the patient, with no significant past medical history, no history of trauma and presentation as lower back pain associated with new neurological changes, while the lesion was situated at T10. The patient was treated as lower lumbar pain, despite the fact that the lesion was located at thoracic spine level.

Even the Back Pain guidelines are advising us to treat this pathology with analgesia and Physiotherapy initially, will be more helpful to organize at least a x-ray, if not a MRI of the spine in patients with back pain, even if they don't have risk factors , if the situation requires, for an early proper diagnosis.

In our case, if the patient would have an imaging of the thoracic spine earlier, he wouldn't develop neurological changes and the prognostic would be better.

As a lesson from this case, we must always think at a possible different location of a spinal lesion, even the patient is complaining only of a "classic" lower lumbar pain.

Dr. Tomas Breslin Consultant in Emergency Medicine
Mater Misericordiae University Hospital, Dublin, Ireland
Dr. Nicoleta Cretu, Registrar in Emergency Medicine

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BURN INJURY AND ORBITAL TRAUMA RELATED TO LIQUEFIED PETROLEUM GAS EXPLOSION: CASE REPORT

Sk Tuncer (1), U Kaldirim (1), Ak Yapici (2), M Toygar (3), I Arziman (1)

1. EMERGENCY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey
2. PLASTIC AND RECONSTRUCTIVE SURGERY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey
3. Department of Forensic Medicine, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey

Corresponding author: ibrahimarz@hotmail.com

Keywords: burn, LPG, orbital trauma

Objective

Liquefied petroleum gas (LPG), an odorless and colorless gas and when compressed then change from a gaseous state to a liquid, is a fuel that has been widely used for domestic, agricultural, and industrial purposes. It is a mixture of commercial butane and propane gases. In our country, it is widely used in home and workplace served in gas cylinders. Having low flash point, leakage of LPG may cause severe explosion and fire. We report on a LPG-associated burn injury to head and upper extremity and orbital trauma due to leakage of LPG led to immediate explosion.

Case Report

54 year old female was admitted to emergency department suffering from burn injury and maxillofacial trauma due to leakage of LPG led to immediate explosion of gas cylinder in her kitchen. Maxillofacial CT revealed intraorbital foreign body and fracture of supraorbital rim and left medial wall of orbita whom subjected to burn injury of head, neck and bilateral upper extremity. She was undergone left eye enucleation. Open reduction internal fixation and soft tissue reconstruction were performed. Afterwards hospitalizing in burn intensive care unit, dressing was applied to burn sites daily. After 3 hospital weeks her burn wounds were spontaneously epithelized and she was fully recovered. Temporary prosthetic eye was inserted and an appointment for follow-up was scheduled and then she was discharged.

Discussion

Explosion due to leakage of LPG may cause traumatic and burn injuries leading to death. LPG is heavier than air and thus will flow along floors and tend to settle in basements indoor area. Whenever a leakage of LPG is determined, preventive measures should be taken such as stopping gas flow by closing valve of tank or cylinder, avoiding from

actions suggestive of fire by spark ignition as switching on/off any electrical appliances, opening all doors and windows for ventilation. Cylinders always should be kept in upright position at ground level at a well-ventilated place, and should be not installed in the cabinet. Connecting rubber hose should be checked periodically and should be replaced with new one in case of wear and tear at least every two years.

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UNUSUAL IGNITION OF A BULLET CAUSING HAND INJURY: CASE REPORT

U Kaldirim (1), Sk Tuncer (1), I Arziman (1), Ak Yapici (2), M Toygar (3)

1. EMERGENCY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey
2. PLASTIC AND RECONSTRUCTIVE SURGERY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey
3. Department of Forensic Medicine, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey

Corresponding author: ibrahimarz@hotmail.com

Keywords: hand injury, gun cleaning, MG 3

Introduction

Gun-cleaning accidents occur rarely. Gun-cleaning mistakes can cause accidents and even fatalities. The most dangerous type of gun-cleaning mistake is forgetting to check that the gun is loaded. We report a case with wound of the hand caused by bullet ignition while the barrel was being cleaned with a cleaning rod.

Case report

A 35 year-old man was admitted to emergency department with a complaint of injury related to the third web space, third finger pulp and thenar region of right hand. On detailed questioning, he reported that he was cleaning a machine gun (type MG-3) after target practice in a shooting range. He didn't check visually and physically whether there were any bullets or not in the chamber. The remaining bullet in the chamber was ignited during the cleaning process when he pushed the rod through the barrel.

In the physical examination, all digits were well perfused. Neurological findings and motor functions of all digits were within normal range. There was no fracture on X-ray. All of the wounds were washed with antimicrobial solution. He was referred to the plastic surgeon. The defect of the third finger pulp was repaired with V-Y flap. Lacerations relevant to the third web space and hypothenar region were sutured and the defect of soft tissue of the thenar region was repaired with skin graft. Cast immobilization was applied and intravenous prophylactic antibiotic was administered postoperatively. All of the wounds were healed on postoperative 15th day and he proceeded to physiotherapy program after the sutures removed.

Discussion

The incidence of firearm related non-fatal and fatal accidents has increased worldwide. Human errors are

responsible for the vast majority of firearm accidents. Injuries of extremities take a large place among firearm related injuries. All firearms, undergoing mechanical abrasion by time must be maintained periodically. Gun-cleaning accidents occur rarely and are generally not relevant to technical defects. The first rule to clean a gun is to ensure that it is definitely unloaded. Firearm accidents could be reduced significantly if firearm holders such as members of the armed forces or hunters were better trained regarding gun-cleaning accidents.

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AN EXTRAORDINARY SYNCOPE STORY: CASE REPORT

O Tezel (1), U Akar (1), I Arziman (1), Hp Celikay (1), Sm Yasar (1)

1. EMERGENCY DEPARTMENT, GULHANE MILITARY MEDICAL ACADEMY, ANKARA, Turkey

Corresponding author: ibrahimarz@hotmail.com

Keywords: syncope, San Francisco Syncope Rule, sneezing

Syncope refers to get on the ground by the meaning. It is described that the lost of consciousness by any reason and turning back spontaneously in a certain time without any medical application. The unconsciousness is not classified in the title of syncope which is not suitable to this definition. Etiologically it is classified in the titles of cardiac, neurologic, orthostatic, vasovagal, psychiatric and medical. All these titles must be questioned for the immediate and appropriate evaluation of the people who are checked in emergency services with symptoms of syncope. That situation is caused to some practical approaches to born. The most known of these and the most used in clinical practice is the San Francisco Syncope Rule. In these criteria, congestive heart failure, lower hematocrit level, electrocardiography abnormalities, shortness of breath and lower systolic blood pressure is questioned and it is aimed to diagnose the most of syncope cases practically. In this case an extraordinary syncope story is reported which could not diagnosed by using the San Francisco Syncope Rule and caused by sneezing that is seen very often in daily life.

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A HYPEROSMOLAR HYPERGLYCEMIC STATE - WHAT CAN BE HIDDEN BEHIND

Katalin Fabian (1), Alina Petrica (2), Carmen Bartha (2), Doina Poenaru (1), Patrick Palosi (1)

1. Emergency department, Emergency county hospital, Timisoara, Romania

2. Emergency department, Emergency County Hospital, Timisoara, Romania

Corresponding author: alina.petrica@urgentatm.ro

Keywords: aortic thrombosis, hyperosmolar hyperglycemic state, splenic infarction

Introduction

Hyperosmolar hyperglycemic state (HHS) is a life-threatening emergency which needs immediate medical intervention. Although the precipitating causes are numerous, underlying infections are the most common. Other causes include certain medications, non-compliance, undiagnosed diabetes, substance abuse, and coexisting disease.

Case report

A 63-year-old woman in coma was brought by the ambulance to the emergency department of Emergency County Hospital from Timisoara.

Examination revealed a mildly dehydrated patient with GCS of 9. Her respiratory examination showed bilateral lung crepitations with inspiratory rhonchi and a prolonged expiratory phase. She was febrile (38.5°C) with blood pressure of 90/50 mm Hg, heart rate of 120 beats/min and oxygen saturation (SaO₂) of 96%.

On admission, all the laboratory tests were consistent with HHS. We noticed a hyperglycaemia of 717 mg/dl, high serum osmolarity (358 mOsm/kg), trace ketonuria with normal arterial blood gases (pH 7.40, bicarbonate 20), elevated creatinine 1,5 mg/dl and elevated leukocytes 28700/microl.

The treatment was initiated with vigorous intravenous rehydration, electrolyte replacement and administration of intravenous insulin. When the patient became conscious she complained of abdominal pain. The ultrasound was equivocal, so a computed tomography (CT) was performed. The CT revealed a 2 cm thrombus in the descendent thoracic aorta and a 6 cm thrombus in the abdominal aorta, under the level of renal arteries, with extension on the left iliac artery and inferior mesenteric artery. It also showed the presence of a splenic and left renal infarction.

The patient underwent surgical resection of the left kidney and spleen.

Conclusions

Aortic thrombosis is a rare, often fatal condition that most commonly involves the abdominal aorta. In a setting of diabetes mellitus, thrombosis of the aorta usually occurs as complication of accelerated atherosclerosis.

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Rez de Jardin poster area

INTOXICATION DUE TO PAPAVER RHOEAS (CORN POPPY): THREE CASE REPORTS

Yahya Kemal Gunaydin (1), Zerrin Defne Dundar (2), Ramazan Koylu (1), Nazire Belgin Akilli (1), Bora Cekmen (1), Basar Cander (2)

1. Emergency Department, Konya Training and Research Hospital, Konya, Turkey

2. Emergency Medicine Department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

Corresponding author: zerrindefnedundar@yahoo.com

Keywords: corn poppy, seizure, miosis

Introduction: Papaver rhoeas (corn poppy) is a naturally growing plant in crop fields and grasslands. The flower is large and showy, with four petals that are vivid red. It contains benzylisoquinoline group of alkaloids (rheoadine alkaloid). It does not cause addiction and is used for treatment of cough and sleep disturbances or eaten as food by people. Nausea, vomiting, confusion, seizure, miosis, rhythm disturbances and morphine-like intoxication symptoms can be seen due to corn poppy. Here, we want to present three case reports admitted to our emergency department with intoxication due to corn poppy.

Case 1: 35 years old female was admitted to emergency department with nausea, restlessness, and shortness of breath 3 hours after eating corn poppy. On her physical examination, she was conscious but she had miotic pupils. Her vital signs were within normal ranges and there was no pathological finding. Laboratory tests, electrocardiogram and brain computed tomography imaging were normal. In the follow-up period, she had a generalized tonic-clonic seizure lasted 3 minutes and she had admitted to the toxicology unit. She was discharged from the hospital on the third day of admission.

Case 2: 41 years old female was admitted to emergency department with contractions of her extremities and loss of consciousness 2 hours after eating corn poppy by emergency medical service. She was confused, her pupils were miotic, her arterial blood pressure was 90/60 mmHg, blood glucose level was 112 mg/dL, and oxygen saturation was 95% on her first physical examination. There was sinus tachycardia on her electrocardiogram. Arterial blood gas analysis was in compliance with lactic acidosis. Brain computed tomography imaging and other laboratory tests were normal. She was discharged from the hospital on the third day of admission.

Case 3: 38 years old female was admitted to emergency department with nausea and vomiting 2 hours after eating corn poppy. On physical examination, there was no pathological finding and her laboratory tests were normal. She was discharged from the hospital on the second day of admission.

Conclusion: Corn poppy can cause clinical manifestation like morphine intoxication or seizures. Intoxication due to Papaver rhoeas should be considered in patients admitted to emergency department with changes in consciousness or generalized neurological symptoms.

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UPPER GASTRO-INTESTINAL BLEEDING - AN ATYPICAL PRESENTATION FOR CARDIOGENIC SHOCK IN EMERGENCY DEPARTMENT.

Nicoleta Cretu, Tomas Breslin, Edward Brazil, John McInerney, Adrian Moughty

Emergency Department, Mater Misericordiae University Hospital, Dublin, Ireland

Corresponding author: nicoletacretu14@yahoo.com

Keywords: cardiogenic shock, intraaortic balloon pump, mitral valve dysfunction

Introduction

Cardiogenic shock is an emergency department presentation of left ventricular dysfunction, usually caused by myocardial infarction. However it does not always present in text-book fashion.

Emergency Department Presentation

56 year old female, with 24 hours history of abdominal pain and hematemesis.

Past medical history- Mitral Valve Replacement in the past, ICD in situ, confined to wheelchair due to traumatic brain injury.

Presenting complaints (collateral history from her son)- dyspnoea at rest for the last 6 weeks, with a 24 hour history of abdominal pain and haematemesis.

Vital signs

Patient obtunded, GCS=12/15, BP=84/56mmHg dropping to 56/34mmHg, SpO₂= 97% on O₂ 100%, HR= 76 beats/min, afebrile.

Examination

As the patient was hypotensive, we put her in Trendelenburg position, when she immediately became cyanotic (face and lips) suggestive of significant orthopnoea. We sat her back up and she continued to have hematemesis.

The physical examination revealed clear lungs, large hepatomegaly with right iliac tender to palpation, per rectal examination negative for melaena.

ECG showed Left Bundle Branch Block; x-ray of the chest revealed cardiomegaly.

Bedside echo showed hypokinetic left ventricle with EF<10%, with secondary enlargement of the right atrium and right ventricle. A diagnosis of mitral valve dysfunction with cardiomyopathy was made, Troponin I was normal.

Management

Cardiac monitor, BP, SpO₂, 2 large peripheral cannulas, arterial line, central line in the right jugular vein, nasogastric tube, urinary catheter.

Initial intravenous fluid resuscitation, followed by Dobutamine infusion.

Intraaortic balloon pump, patient now awaiting cardiac transplant

Conclusion

It is difficult to assess a patient who is too unwell to give an appropriate history. Sometimes the symptoms and the signs are "speaking" for the patient. In this case, central cyanosis exacerbated by lying flat pointed to left ventricular failure, with the haematemesis a red herring in this case. Cardiogenic shock remains a life threatening condition which if it is not recognised in a timely fashion, carries a significant mortality.

Dr. Nicoleta Cretu, Registrar in emergency Medicine
Dr. Tomas Breslin, Consultant in Emergency Medicine
Mater Misericordiae University Hospital, Dublin, Ireland

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Rez de Jardin poster area

CAN WE FORGET A TRAUMA CASE WITH CERVICAL SPINE INJURY WITH SECONDARY NEUROLOGICAL INJURY?

Nicoleta Cretu, Tomas Breslin, John McInerney, Edward Brazil, Adrian Moughty

Emergency Department, Mater Misericordiae University Hospital, Dublin, Ireland

Corresponding author: nicoletacretu14@yahoo.com

Keywords: cervical spine inju, trauma, neurological injury

Introduction

Caring for severely injured patients can be traumatic for staff involved. In this presentation , a 26 years old male accidentally fell from 3 stories onto his head, band was found collapsed on the bottom of the stairs by his brother. Emergency Department (ED) Presentation

He was brought by ambulance at 8 pm on spinal precautions, with a GCS of 13. The ambulance crew reported a possible fall from height with secondary spinal injury.

On examination, even the patient was confused, he was able to answer to a few questions: he had absentsensation below the shoulders and he wasn't able to move his extremities, and he couldn't recall the event...

Initially, the vital signs were normal: BP=105/85mmHg, HR=76beats/min, SpO2=98% with 100% O2.

While the patient was assessed, the BP dropped, requiring vasopressors.

On spinal examination, there were no external signs of trauma , and anal sphincter tone was absent.

As management, the patient received 2 large bore cannulas, arterial line, central line, ECG .

Imaging

X-ray of the chest was reported as normal.

CT of the brain, chest, abdomen and pelvis were reported as normal.

CT of the cervical spine reported fracture of C4, C5, C6.

MRI of the cervical spine reported burst fracture of C5 with posterior retropulsion with definite tears of the anterior longitudinal ligament, right C4 lamina fracture, extensive spinal cord oedema from C3 vertebral body to the inferior border of C6.

Discussion

All the investigations were performed in the first 3 hours after this patient's presentation, and he went for spinal decompression and fixation a few hours later. Unfortunately, there was no improvement in his neurological condition.

Conclusion

Despite the fact that the patient received appropriate investigations and treatment in an optimum time from the injury, he didn't recover from his the neurological deficit-tetraplegia.

The emotional implication for the medical staff for this patient was significant, even in the next days my colleagues giving phones to ICU asking about the quality of improvement of neurological deficit after the surgical intervention. Some of us went to spinal unit to speak with the patient and with the family.

It is difficult to quantify the emotional effect of such a tragic case on medical and nursing staff in Emergency Department, and the psychological toll it takes on carers. More focus needs to be placed on debriefing of medical staff after such incidents

Dr. Nicoleta Cretu, Registrar in emergency Medicine
Dr. Tomas Breslin, Consultant in Emergency Medicine
Mater Misericordiae University Hospital, Dublin, Ireland

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Rez de Jardin poster area

PERICARDITIS. CASE REPORT

Antonio Mellado Ferrandez (1), Paula Sanchez Moreno (1), Daniela Rosillo Castro (2), Juan José Perea Zafra (2), Luís Guevara Molano (1), Fernando Moreno Sanchez (1)

1. Emergency department, urgencias Santomera, Santomera. Murcia, Spain

2. Emergency department, Hospital Reina Sofia. Murcia, Spain

Corresponding author: antoniomellafer@hotmail.com

Keywords: pericarditis, clinical suspicion, electrocardiography

TITLE: Pericarditis outside the hospital. Case report

AUTHORS:

- 1.Mellado Ferrández, Antonio (Emergencies Service. Santomera. Murcia).
- 2.Sanchez Moreno, Paula (Emergencies Service of Santomera. Murcia).
- 3.Rosillo Castro, Daniela (Hospital Reina Sofia. Murcia).
- 4.Perea Zafra, Juan José (Hospital Reina Sofia. Murcia).
- 5.Guevara Molano, Luís (Hospital Reina Sofia. Murcia).
- 6.García Palacios, María (Hospital Reina Sofia. Murcia).

TOPIC: Poster presentation

Key words: pericarditis, clinical suspicion, electrocardiography

OBJECTIVES

From a case report, to review a condition that is often misdiagnosed as acute pericarditis is, using the tools provided outside the hospital environment: clinical suspicion and ECG.

METHODOLOGY

the updated literature review on Acute Pericarditis recent clinical guidelines, and requested and received access to complementary examinations the patient both in-hospital and during admission.

Clinical Case Summary

We report the case of a male patient aged 27 who came at dawn to the non-hospital emergency room with mild central chest pain throbbing for over an hour, unrelated to the effort. The patient was well and blamed the trouble to taking a drug prescribed for pharyngitis. Physical

examination showed no significant findings but when asked about factors which would have altered the pain he explained that it had worsened in supine position and improved in standing and sitting. The electrocardiogram showed ST segment elevation in various derivations, establishing clinical-electrocardiographic diagnosis of acute pericarditis. The patient was given treatment and moved to hospital where he was admitted and received definitive treatment until discharge.

Below is the case along with a review on the subject of Acute Pericarditis, focusing on its incidence, clinical features and treatment

CASE REPORT

27 year old male patient who presented to the Emergency Department at 17:00 referring outpatient dry cough sore throat and several days' duration, with spiking fevers up to 38.5 ° C. Tonsillar exudates were observed and diagnosed acute tonsillitis referring to home with Amoxicillin / 8 hours.

The patient returned at dawn referring chest discomfort for some 1 ½ hours and blaming the antibiotic. By delving into the history, he referred central chest throbbing pain and isolated episodes of crushing pain radiating to the left arm. The pain worsened in supine position and with deep inspiration and relieved by standing and sitting. Also recounted as family history, the death of his father at age 40, for a cardiac disease who failed to specify. The patient was obese and dealt chronic diseases, and declined toxic consumption.

Physical examination: Good overall condition, eupneic. O₂ Sat 99%, BP 135/85, 80 bpm, T ° 36.2 ° C, good hydration and color of skin and mucous membranes. AC: Rhythmic no murmurs or rubs, AP: breath sounds without adventitious sounds.

Electrocardiogram was performed which showed a sinus rhythm at 75 bpm, with 2 mm elevated ST segment forming a garland at II, III, aVF and V4-V5-V6.

With the clinical suspicion of pericarditis, 1g orally of acetylsalicylic acid was orally given to the patient, and we proceeded to transfer to hospital. During the transfer, the patient reported a new episode of central chest crushing pain radiating to the left arm. At that moment he was given 1 tablet of nitrate. He arrived at the hospital hemodynamically stable, eupneic without sweating and nausea or central chest crushing pain, but persisted pulsating worsening chest pain when in supine position.

He entered the emergency room with clinical suspicion of pericarditis starting intravenous infusion 900 mg Lysine acetylsalicylate.

Before the arrival of first analytical result, cardiac enzyme CPK and Troponin 398 9,722 and urinary toxicology (negative) was evaluated versus STEMI possibility of pericarditis, proceeding to oral administration of Clopidogrel and Fondaparinux i / v. No nitroglycerin was administered endovenously by the absence of oppressive pain and nausea and sweating. The patient remained in good general condition, eupneic and hemodynamically stable.

Interconsultation to intensivist was performed, ruling out AMI diagnosis Myopericarditis proposing and rejecting their service income before hemodynamic Stability aspects.

While in ER, were serialized analytical cardiac enzyme, reaching peak troponin and CPK 561 16.11, after falling 9.2 troponin value.

He joined the cardiology department where centrothoracic throbbing pain persisted, and had some fever spike isolated and weak cough with rusty sputum. Blood cultures were performed (negative) LUES serology, EBV, HIV, HCV, HBV, CMV (negative), Rx thorax (no infiltrate or other findings), RM cardio: area late gadolinium enhancement in lateral wall, basal half, subepicardial, which is consistent with myocarditis. Preserved ejection fraction.

During his stay at cardiology service, the patient was given oral ibuprofen with progressive decrease of the chest pain. Isolated peak fever presented with rusty sputum with normal chest radiograph, receiving levofloxacin. On discharge the patient was asymptomatic and was given ibuprofen every 8 hours for 2 weeks and antibiotic therapy with levofloxacin (until full eight days).

SUMMARY OF ACUTE PERICARDITIS

It is a clinical syndrome caused by inflammation of the pericardium, and is classically characterized by the triad of non-ischemic chest pain, pericardial rub and characteristic electrocardiographic changes.

- Chest pain usually has pleuritic pattern but sometimes simulate ischemic event, being usually retrosternal or left hemithorax and may radiate to neck or left shoulder. Usually increases in supine position with cough and improve when sit.

- Pericardial Rub: It is not always present (only 60-70%) even when it is, is a pathognomonic finding, corresponding to the rubbing of the inflamed pericardial membranes. Usually better listened at mesocardium and at lower left sternal border at the end of exhalation and with the patient leaning forward. Not correlate with the existence of a spill, and may appear or disappear during the onset of symptoms, or when changing positions

- Electrocardiogram: Alteration of PR in up to 80%. Only 50% will have the 4 stages in its evolution. There are cases with no electrocardiographic changes.

- * Stage 1; concave ST elevation higher and lower faces wreath previous PR with P wave polarity opposite to

- * Stage 2; days later, isoelectric ST, PR is diverted

- * Stage 3; widespread T-wave inversion

- * Stage 4; normalization of ECG. Occurs weeks or months later.

Other diagnostics:

- ◆ Echocardiography: pericardial effusion, signs of tamponade

- ◆ Rx thorax: from normal to cardiac silhouette "in canteen" (spill of more than 250 ml of pericardial fluid)

- ◆ Blood tests: elevated inflammatory markers (ESR, CRP, LDH, leukocytosis), cardiac enzyme (CK-MB, troponin1) levels up to 50% of cases. Mantoux, rheumatoid factor, ANA, viral studies.

- ◆ Pericardiumcentesis (if tamponade or large spill or optional small spill with uncertain diagnosis): etiopathogenic classification according histochemistry and PCR

- ◆ Chest CT with conclusive results

- ◆ NMR if not conclusive

Its cause is unknown but is suspected their association in 80% of patients with viral infections. It is frequently associated with cold symptoms in the previous weeks. Other possible causes are bacterial infection, vasculitis, tumors, myocardial infarction, pulmonary embolism and trauma

Its prevalence is not exactly known because often pericardial inflammation occurs without clinical symptoms, having pathological signs of pericarditis found in up to 1% of autopsies in the general population. In hospital emergency diagnosis constitutes up to 5% of non-ischemic chest pain who consult.

Forecast: idiopathic or viral pericarditis (80% of cases) is usually self-limiting and heals in 2-6 weeks. Tuberculous pericarditis associated 50% mortality. Other complications include chronic pericarditis, recurrent pericardial effusion, cardiac tamponade and constrictive pericarditis.

Treatment:

- ❖ Rest during the outbreak (while fever and pain)
- ❖ NSAIDs: are the mainstay of treatment. Associate gastric protection
 - Ibuprofen 300-800 / 8 hours
 - AAS 500-1000 / 6 hours until symptoms disappear, then lower doses
 - Paracetamol 2-4g/día
- ❖ Colchicine alone or associated with NSAIDs. Useful when not controlled with NSAIDs, and relapse prevention.
- ❖ Corticosteroids: use controversial. Book for immune pericarditis, connective tissue disease or poorly controlled with other drugs.

Indications for hospitalization:

High fever, suspected cardiac tamponade, severe pericardial effusion, myocardial involvement, immunocompromised, traumatic pericarditis anticoagulant therapy.

CONCLUSION

The acute pericarditis syndrome is an often underdiagnosed entity for its clinical variability and often undertake little patient involvement although its subsequent complications, morbidity and mortality are not negligible. Outside the hospital, diagnostic exclusively depends on the medical knowledge of the pathology and clinical features and presentation of pericarditis with the knowledge of ECG abnormalities that can lead, not having in this medium other diagnostic techniques support.

In this particular case, was fundamental, to insist into the history of the presentation of pain. This was the key to indicate an ECG that confirmed the clinical suspicion, as the presence of recent infection and fever history did.

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Rez de Jardin poster area

SPONTANEOUS INTESTINAL OBSTRUCTION IN A PATIENT WITH ABDOMINAL PAIN WITHOUT PREVIOUS SURGERY.

Antonio Mellado Ferrandez (1), Luis Guevara Molano (2), Paula Sanchez Moreno (3), Juan José Perea Zafra

(2), María García Palacios (2), Fernando Moreno Sanchez (1)

1. Emergency department, urgencias Santomera, Santomera. Murcia, Spain

2. Emergency department, Hospital Reina Sofia. Murcia, Spain

3. Emergency department, Urgencias Santomera, Santomera. Murcia, Spain

Corresponding author: antoniomellafer@hotmail.com

Keywords: intestinal obstruction, abdominal pain, pathology evolution

TITLE: Spontaneous intestinal obstruction in a patient with abdominal pain without previous surgery.

Authors:

Antonio Mellado Fernández (Servicio de Urgencias. Santomera. Murcia)

Luis Guevara Molano (Hospital Reina Sofía. Murcia)

Paula Sanchez Moreno (Servicio de Urgencias. Santomera. Murcia)

Juan José Perea Zafra (Servicio de Urgencias. Santomera. Murcia)

TOPIC: Poster presentation

Keywords: spontaneous bowel obstruction , abdominal pain, disease progression

We report the case of a 45 year old male, who consulted in the emergency department of the hospital "Reina Sofia" of Murcia by sudden onset of abdominal pain and cramping for the past 10 hours had been continuous thereafter. He complained of loss of appetite and little bilious vomiting episode that did not ease the pain. No changes in bowel habits.

On examination, BP 155/62, T. 37°C, O2 sat 96%, with good hydration and skin and mucosal perfusion. Normal cardiac and pulmonary auscultation. Abdomen soft and palpable, tender to palpation in the right flank. No palpable masses or organomegaly. Auscultation with present and diminished bowel sounds. Negative bilateral renal fist percussion. DRE empty rectal vault without masses.

Investigations:

ECG: sinus rhythm at 90 bpm.

CBC: 16670 leukocytes (neutrophils 90%), hematocrit 50.6. Normal clotting. Blood gas pH 7.24, HCO 25.7. Urine: protein 25, 150 ketones, erythrocytes 25.

Radiology image Rx abdomen with fluid levels in the colon, normal chest Rx.

Eco abdominal: liver, biliary tract, spleen and kidneys normal. cholelithiasis without inflammatory changes, distended loops of small bowel with normal wall width, small amount of free fluid between them.

We proceeded to emergency admission while awaiting evaluation by surgeon. At the time of consultation by the surgeons, the pain had not improved so they lodged a petition for abdominal CT.

CT abdomen: Dilated jejunum and ileum handle to right with caliber change them at that level, no signs of intestinal distress at the time, or pneumoperitoneum, supports intestinal obstruction can not determine the cause.

The hours of the completion of the abdominal scan, the patient remained in good general health and good vital signs, but abdominal pain persisted without radiographic

improvement. It was then decided to do an urgent laparotomy with diagnosis of intestinal obstruction.

Surgery showed distension of the entire small intestine up to 30 cm of the ileum where flange was found committing a segment of the terminal ileum with signs of distress, which recovered after intestinal delivery. An iatrogenic jejunum perforation was done to empty the intestinal contents, and was sutured after cooling the edges.

Postoperatively was gradually resolved initial bloating and image of dilated bowel loops.

Review of Intestinal Obstruction

CONCEPT

Intestinal occlusion is the inability of the intestine to allow, with their movements, the regular passage of food and intestinal contents caudally, resulting in local and general changes. Simple obstruction can manifest, which is exclusively traffic disturbed intestinal obstruction or strangulation, which, besides being disturbed intestinal transit is compromised blood circulation in the affected bowel segment.

CAUSES.

Mechanical Causes: Normal bowel movements are hindered

- Adhesions or scar tissue that forms after surgery (the most frequent cause of mechanical causes)
- Foreign bodies
- Gallstones (rare)
- Hernias
- Fecal impaction
- Intussusception (introducing a segment of the intestine into another)
- Tumors
- Volvulus

Paralytic ileus: No structural damage but the bowel does not work properly

- Bacteria or viruses that cause intestinal infections (gastroenteritis)
- Chemical alterations, electrolyte, or mineral such as decreased K levels
- Complications of abdominal surgery
- Decreased blood supply to the intestines (mesenteric ischemia)
- Intra-abdominal infections such as appendicitis
- Kidney disease or pulmonary
- Use of certain medications, especially narcotics

SYMPTOMS

Abdominal swelling

Fullness of intestinal gases

Severe abdominal pain. Initially it may be colic to be continued subsequently Halitosis. In distal obstructions may have fecal breath odor.

Constipation and absence of defecation

Diarrhea (for anti-mechanical obstruction increased motility)

Absence of intestinal gas evacuation

Vomiting. More later as more distal the obstruction is. They can become fecaloid.

DISCUSIÓN

Intestinal obstruction, usually presents with nonspecific symptoms. In early stages it is easy to confuse it with banal diseases such as gastroenteritis. The key to determining a

hospital setting without diagnostic tests, in addition to physical examination and history taking, may be the patient's progress.

It would be desirable in the extra-hospitalary ambient to instruct the patient on steps to take and where to go if abdominal pain worsens or if there is no clinical improvement after a while with the prescribed treatment. Abdominal pain that initially may be non specific may eventually reveal his true nature, suggesting a more specific diagnosis and indicating the diagnostic tests to confirm or clinical suspicion

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Rez de Jardin poster area

RARE COMPLICATION OF EXTERNAL VENTRICULAR DRAINAGE : INTRA-VENTRICULAR DRAIN SECTION

Hanane Ezzouine (1), Boubaker Charra (2), Nadia Harbouze (3)

1. *anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-Morocco, casablanca, Morocco*
2. *anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-morocco, casablanca, Morocco*
3. *Anesthesiology and intensive care, university teaching hospital Ibn Rushd-Casablanca-Morocco, casablanca, Morocco*

Corresponding author: ezzouinehanane@yahoo.fr

Keywords: external ventricular drainage, intra-ventricular drain section, INCIDENCES AND ACCIDENTS

The external ventricular shunt is a simple treatment technique

hydrocephalus. Known complications of this technique are essentially

infection, bleeding, dysfunction by malposition of the drain or

overdrainage. We report the case of a 19-year-old patient treated for tuberculous meningitis complicated with acute hydrocephalus treated by

external ventricular derivation whose accidental fall shows intraventricular section

the drain branch.

A 19 year old patient with no medical history was admitted to intensive care for disorders of consciousness

complicating febrile illness lasting for one month

. Clinical examination revealed a patient obnubilé Glasgow focalisation, without signs of hemodynamic condition was stable, he was normally breathing and saturation

arterial oxygen was 100% air libre. Moreover, he has fever at 39 ° C and the remainder of the examination was normal.

Laboratory tests found hyponatremia 128 mEq / l without other disorders

hydroelectrolytic or rénale. Le the function remains the assessment found a

leukocytosis 13600/mm³.

Lumbar puncture found a clear cerebrospinal fluid. At cellulorrachie,

30 elements, 90% lymphocytes with protéinorrachie 4.08 g / l,

glycorrhachie to 0.2 g / l and a Glycorrhachie / glucose ratio of 0.2.

The bacteriological evaluation (blood, cyto-bacteriological study of urine) was negative.

The chest radiograph and CT scan were without abnormalities.

The therapeutic management was the antituberculous treatment, corticosteroids and progressive correction of hyponatremia.

The evolution was marked by neurological worsening the 6th day of treatment

. Computed tomography found acute hydrocephalus. treatment was a

external ventricular derivation whose implementation took place without incident. the

brain CT scan control found a drain in place without complications

significant immediate.

The 7th day of the external ventricular derivation, evolution was marked by the

accidental removal of the drain. Cerebral CT scan (Figure 1) found the

Persistence of the distal tip of the drain junction in intraventricular.

The external ventricular lead is an invasive technique with risk despite

all precautions and compliance with aseptic technique and safety. complications

reported are mainly ventriculitis, hematoma or

malpositionnement .The peculiarity of our case is the section of drain with the persistence of the distal tip

intraventricular. risk is exceptional and requires vigilance during accidental removal or not these drains.

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Rez de Jardin poster area

POST-OPERATIVE SEPSIS: A CASE OF TAKOTSUBO CARDIOMYOPATHY WITHOUT A "BROKEN HEART"

Davut Savaser (1), Lisa Lowe (2), David Beffa (2), Mary Beth Johnson (2)

1. Emergency Department, UC San Diego Health System, San Diego, United States

2. Emergency Medicine, UC San Diego Health System, San Diego, United States

Corresponding author: davutsavaser@gmail.com

Keywords: Takotsubo Cardiomyopathy, Broken Heart Syndrome, Sepsis

Introduction: Takotsubo cardiomyopathy, also known as apical ballooning cardiomyopathy or broken heart syndrome, is a type of non-ischemic cardiomyopathy which results in the sudden and temporary weakening of the myocardium. Takotsubo has been described as being caused by emotional stress, the loss of a loved one, a break-up, or persistent anxiety.

Case Description: A 61 year old male presented to the emergency department with epigastric abdominal pain as well as shortness of breath. The patient was post-operative day number 9 from a right-sided hemi-colectomy with ileo-colonic anastomosis for an unresectable sessile polyp. Physical exam revealed an afebrile patient, tachycardic to 129 bpm, hypotensive to 80/40 mmHg and tachypneic to 30 breaths per minute with an oxygen saturation of 95% on room air. He exhibited diffuse abdominal tenderness on exam with rebound and guarding elicited as well as a tachycardic, regular rhythm with normal heart sounds and no murmurs. The incision site on his abdomen was clean, dry and intact. An EKG performed revealed ST elevation in leads I, II, aVL, as well as the precordial leads of V2-V6. Bedside ultrasound of the heart was performed and revealed a wall motion abnormality in the form of apical ballooning. Cardiology was consulted regarding a suspected ST elevation myocardial infarction, however, General Surgery was also consulted given the abdominal pain and suspected intra-abdominal surgical pathology. The patient was started on intravenous antibiotics, fluids and pressor therapy for suspected intra-abdominal infection and taken to the cardiac catheterization lab for a suspected concomitant ST-elevation myocardial infarction. Catheterization revealed no evidence of coronary artery disease, yet the patient was diagnosed with Takotsubo cardiomyopathy (stress-induced cardiomyopathy). The patient was subsequently taken to the operating room for which he had a lysis of adhesions (LOA) performed and washout of multiple intra-abdominal abscesses from an anastomotic leak of his prior colectomy. Patient improved after surgery, intravenous antibiotics and weaning of pressor therapy for his hypotension and was subsequently discharged, in improved health, 9 days from his initial presentation.

Discussion: This case illustrates the critical nature of sepsis and that Takotsubo cardiomyopathy may not necessarily present in the typical fashion of emotional distress from losing a loved one, a break-up, or anxiety. Here, it was related to the disease of sepsis as the stressor for the patient. It was an atypical presentation of a rare disease. Also, the cardiac ultrasound finding of ballooning of the apex of the heart is a common finding in Takotsubo cardiomyopathy.

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Rez de Jardin poster area

PATIENT WITH LESIONS IN ORAL CAVITY OF 60 DAYS OF EVOLUTION.

Sara Visiedo Sánchez (1), Ana Isabel Condon Abanto (1), Teresa Escolar Martinez Berganza (1), Zulema Garcia Anadon (1), Jose Manuel Abascal Roda (1), María De La Peña Lopez Galindo (1), Miguel Rivas Jimenez (1)

1. Emergency department, HCU Lozano Blesa, Zaragoza, Spain

Corresponding author: saravisiedo@hotmail.com

Keywords: Infectious disease, Oral Cavity, Leishmania

Case description: 58-year-old male, born in Bulgaria (5 years living in Spain).

Do not travel to their country or to any other site. No drug allergies. Former smoker.

Medical history: Dyslipidemia, COPD, pulmonary TB (2004), aortic and mitral insufficiency, arterial thromboembolism IBD with embolectomy (2009). He went to his general practitioner by some painful lesions in the oral cavity; starting treatment with different types of antifungal agents (Nystatin and ketoconazole). After 15 days of treatment without evidence of improvement, the patient goes to the emergency department where it was decided to income in the service of infectious diseases.

Exploration and complementary tests: patient oriented and conscious. Cardiopulmonary auscultation: without alterations. Abdomen: anodyne. BSII: without edema and signs of DVT deep. Oral cavity: ulcer of several centimeters in hard palate and uvula front. Intense pain to the touch. Tongue with whitish plaques.

Complementary tests: pathology of the lesion: oral mucosal Leishmaniasis.

Analytics: AST:43, ALT:65, GGT:109, VSG:32. Chest x-ray: COPD, aortic calcification. Cellular immunity: 1018 CD4/mm³, beta-2-macroglobulin.HIV: negative. Serology Leishmania: Positive (Ig-G antileishmania: 2.03). PCR positive for Leishmania

Clinical judgment: Leishmaniasis in oral cavity.

Differential diagnosis: Paracoccidiomycosis, histoplasmosis, sarcoidosis, syphilis, basal cell carcinoma, lymphoma, lymphocytes T/NK, lethal midline granuloma.

Final comment: the patient during your income (45 days) required treatment with analgesia pump and absolute diet during the first ten days, due to the intense pain of the injury. Leishmaniasis affecting mucous membranes is a very atypical presentation entity, and which usually manifests after evidence of skin lesions; that our patient did not show.

Po-211

Hall Accueil Expo poster area

EVALUATION OF A COMPREHENSIVE SYSTEM FOR RECOGNISING AND RESPONDING TO CLINICAL DETERIORATION IN EMERGENCY DEPARTMENT PATIENTS

Julie Considine (1), Judy Currey (2), Jen Rawet (2)

1. Faculty of Health, Deakin University, Burwood, Victoria, Austria
2. Faculty of Health, Deakin University, Burwood, Victoria, Australia

Corresponding author: julie.considine@deakin.edu.au

Keywords: patient safety, clinical decision making, decision support tools

Introduction: Track and trigger systems are based on the well documented relationship between physiological abnormalities and serious adverse events. The aim of track

and trigger systems is decision support to enable the early identification of clinical deterioration. Track and trigger systems rely on who factors: i) measurement of vital signs (tracking) and ii) predetermined calling or response criteria (trigger) that requests assistance from personnel skilled in the management of the deteriorating patient. Although track and trigger systems are widely used in Australia, most of the published research to date is in the in-patient hospital context. There is little known about the use of track and trigger systems in Emergency Departments.

Aim: to evaluate a comprehensive system for recognising and responding to clinical deterioration in emergency department (ED) patients. The major outcome was reported clinical instability defined as documented evidence in the ED nursing notes of clinical instability and subsequent report to a medical officer.

Methods: a repeated time series design was used. The intervention (a system for recognising and responding to clinical deterioration) evolved over time:

- 2009: no formal system

- 2010: single trigger ED Clinical Instability Criteria and escalation of care protocol implemented

- 2011: color coded nursing observation charts matching single trigger criteria and designed using human factors implemented

The study was conducted at a metropolitan emergency department in Melbourne, Victoria. Study participants were adults with complaints of shortness of breath, chest pain and abdominal pain. A total of 50 patients per year (2009-2012) per diagnostic group were randomly selected from ED attendance records (n=600). Data were collected by retrospective medical record audit.

Results: There were 318 episodes of documented clinical instability in 81 patients. The prevalence of instability for each year was not significantly different: 14.7%, 14.6%, 22.1% and 10.7% (p = 0.203). The proportion of reported instability increased over the four years (14.7%, 27.9%, 43.9%, 40%) but was not statistically significant (p = 0.295). Tachypnoea and tachycardia were the most common abnormalities. Of 110 episodes of tachypnoea in 35 patients, 27.3% were reported. The proportion of reported tachypnoeic episodes increased over time (11.1%, 18.2%, 27.6%, 68.7%). Of the 92 episodes of tachycardia in 28 patients, 27.1% were reported. Again the proportion of reported tachycardic episodes increased over time (17.4%, 28.1%, 31.6%, 33.3%).

Conclusions: A comprehensive system for recognition and response to deteriorating ED patients has increased reporting of clinical instability. While clinically significant, larger studies are required to demonstrate statistical significance.

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DESCRIPTIVE ANALYSIS OF EMERGENCY DEPARTMENT OXYGEN USE

Mari Botti (1), Shane Thomas (2)

1. Faculty of Health, Deakin University, Burwood, Victoria, Australia

2. Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Victoria, Australia

Corresponding author: julie.considine@deakin.edu.au

Keywords: oxygen, clinical decision making, evidence-based practice

Introduction: Oxygen is the most commonly administered therapeutic substance in hospitals and is commonly used in emergency care. Oxygen deficiency has been linked to preventable deaths, avoidable cardiac arrests, failed resuscitation and unplanned intensive care unit admission. However there is an emerging body of knowledge that indiscriminant oxygen use in non-hypoxic patients may cause harm, particularly in patients with stroke, acute coronary syndrome and chronic obstructive pulmonary disease.

Aim: The aim of this study was to evaluate the use of supplemental oxygen in three Emergency Departments (EDs) in Victoria, Australia.

Methods: A prospective exploratory design was used. The study sites were a major tertiary referral centre, an urban district hospital and a major regional hospital. All patients attending the study sites during the data collection periods and who could give informed consent were eligible for inclusion. Study data were collected between September 2008 and June 2009.

Results: A total of 346 patients were recruited and the prevalence of oxygen use was 48.3% with no between site differences in oxygen use. Emergency nurses made the majority of decisions to administer or not administer oxygen (45.7%), followed by paramedics (24.3%) and medical staff (3.5%). The most common reasons for oxygen use were shortness of breath (40.1%), chest pain (34.7%) and hypoxaemia (29.9%). Simple face masks were used in 79.0% of cases followed by nasal cannulae (19.2%). Patients who received supplemental oxygen were older (Mdn age 64 vs 51 years, $p < 0.001$), more likely to have ambulance transport to ED (62.3% vs 31.3%, $p < 0.001$), were more likely to be triaged to ATS 2 (43.7% vs 13.7%, $p < 0.001$), less likely to be triaged to ATS 4 (6.0 vs 30.2%, $p < 0.001$) and higher frequency of hospital admission (64.7% vs 35.7%, $p < 0.001$). Patients who received oxygen also had higher incidence of abnormal respiratory rates (22.1% vs 5.0, $p < 0.001$), increased work of breathing (10.2 vs 0, $p < 0.001$), mild hypoxaemia (13.8% vs 6.1%, $p = 0.020$), severe hypoxaemia (7.2% vs 0, $p < 0.001$), heart rate abnormalities (31.3% vs 14.5%) and abnormal GCS (5.4% vs 0.5%, $p = 0.019$).

Conclusions: Almost half the patients in this study had oxygen and oxygen administration was associated with specific clinical and demographic characteristics, many of which were commensurate with high levels of clinical urgency. Patients who received oxygen were more likely to have physiological abnormalities however the influence of specific physiological parameters on oxygen decision making warrants further investigation.

Funding / Acknowledgments: This study was funded by a Deakin University Central Research Grant

Reference: Considine, J., Botti, M. & Thomas, S. (2012) Descriptive analysis of oxygen use in Australian emergency

departments. *European Journal of Emergency Medicine*, 19(1), 48-52.

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CREATION OF AN SCALE TO ASSESS SEVERITY TO ACUTE DECOMPENSATED HEART FAILURE IN EMERGENCY DEPARTMENT.

Susana Garcia-gutierrez (1), Esther Pulido (2), Gallardo Maria Soledad (2), Anette Unzurrunzaga (1), Ricardo Palenzuela (3), Antonio Escobar (4), Mikel Sanchez (2), Jose Maria Quintana (5)

1. Research Unit, Hospital Galdakao-Usansolo, Usansolo, Spain
2. Emergency Department, Hospital Galdakao-Usansolo, Usansolo, Spain
3. Emergency Department, Hospital Donostia, Donostia, Spain
4. Reserach Unit, Hospital Basurto, Bilbao, Spain
5. Reserach Unit, Hospital Galdakao-Usansolo, Usansolo, Spain

Corresponding author: susana.garciagutierrez@osakidetza.net

Keywords: acute decompensated heart failure, risk assessment, decision making

Background: Scales to assess severity in acute decompensated heart failure were created in hospitalized patients or in stable ones or based on large databases and result difficult to use in acute setting.

Objective: To create a scale to assess severity in acute decompensated heart failure.

Design: Prospective cohort study. Patients attending emergency departments of three emergency departments in Basque Country with acute decompensated of heart failure were included (de novo and chronic decompensated heart failure). Clinical variables at arrival to ED were collected as well as information about admission in the case of hospitalized patients and at seven days after discharge from ED in the discharged home patients from ED. Sociodemographical variables, clinical signs and symptoms, gasometrical and laboratory parameters, basal echocardiographic parameters as well as basal and due to decompensation treatments and the response to them were collected. Main outcome was mortality during seven days after index episode. Statistical analysis: We performed logistic regression model being dependent variable mortality after seven days after index episode and independent variables those clinical, gasometrical and laboratory parameters at the arrival to ED. C statistic was calculated to assess the predictive ability of the models was performed and the Hosmer-Lemeshow (HL) to evaluate the calibration of the models. All analyzes were conducted in SAS v9.2 for Windows.

Results: We recruited 878 patients for the study, the 51,47 % of them were females, and mean age was 79,54(9,51 years). The 80,25% presented hypertension, 5147 dyslipemia and 25% of them were ex-smokers. The 53% of them presented basal functional situation II/IV measured by NYHA scale and more than 90% presented level III-IV/IV

at the arrival to ED. 4% of them died during admission or at seven days after their visit to ED. Creatinine, systolic blood pressure and hemodynamic instability were related to mortality. AUC for this model reached 0,78 with good calibration. (Hosmer-Lemeshow>0,05).

Conclusions: We have identified several easily collected variables which could predict fatal evolution of ADHF. External validation of the scale is needed.

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MANAGING CLINICAL QUESTIONS BY EMERGENCY DOCTORS: METHODS AND APPLICATIONS

Hamed-basir Ghafouri (1), Farhad Shokrane (2), Ja'afar Zarezadeh (3)

1. Emergency Department, Sina, Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of
2. Research Deputy, Kerman University of Medical Sciences, Kerman, Iran, Islamic Republic of
3. Emergency Department, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of

Corresponding author: farhadshokrane@gmail.com

Keywords: Clinical Question, Management, Emergency Doctors

Background: clinical questions (CQs) are personal knowledge units of emergency physicians for educational, research and practical efforts while they face many questions because of encounter to various medical conditions during their career.

Objectives: We report the CQs applications and management methods used by emergency physicians.

Methods: We designed a qualitative study to gather information through in-depth, semi-structured interviews with open-ended questions among faculty members of emergency departments at the University. We analyzed content of interviews to find methods which have been utilized by doctors to manage CQs as well as applied and applicable aspects of CQs.

Results: Physicians encounter less than 1 to 6 challenging CQs (2±1.5) per clinical shift (12 hours) most of them are about dose of drugs, prognosis, and diagnosis. Memorizing is the main recording method and electronic resources such as Google, UpToDate and PubMed are main answering sources. Physicians compare different resources in case of doubt in answers. Only a few physicians organize some of CQs based on the purpose of future applications. Also, they stated 18 clinical, educational and research applications for their CQs.

Conclusion: Management of CQs is less-known aspect of personal information management among physicians whereas CQs form their expertise during time. CQs could be applied in practical and scientific ways which need considering management steps during clinical practice. Since characteristics of emergency medicine are different from other medical specialties, knowledge management could be the matter of physicians during their clinical life.

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EVALUATION OF THE PERTINENCE OF PNEUMOCOCCUS AND LEGIONELLA URINE-SOLUBLE ANTIGENS IN EMERGENCY DEPARTMENTS IN LIGHT OF THE EXPERT RECOMMENDATIONS.

Hugues Lefort (1), Priscille Lopez (2), Daniel Jost (1), Amandine Cauet (3), Christophe Delbart (4), Michel Pavic (5), Jean-michel Tourtier (1), Laurent Domanski (1)

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France
2. Military medical center of Mourmelon Maily, Medical center of Châlons-en-Champagne EVDG, Châlons-en-Champagne, France
3. Department of Anesthesia and Intensive Care, Val-de-Grâce Hospital, Paris, France
4. Military medical center of Mourmelon Maily, Medical center of Mourmelon-Mally, Paris, France
5. Department of Anesthesia and Intensive Care, Desgenettes Hospital, Lyon, France

Corresponding author: hlefort@gmail.com

Keywords: urine-soluble antigens, emergency department, recommendations

Introduction: The 2006 recommendations of the Société de Pathologie Infectieuse de Langue Française relating to testing for urine-soluble antigens (USA), Pneumococcus (P.USA) and Legionella (L.USA) antigens. In an emergency admission department (EAD), testing for USA is indicated in the event of community-acquired acute pneumonia (CAP) necessitating hospitalization in intensive care. In addition, L.USA testing is indicated in the event of a presentation suggesting Legionella-induced CAP requiring hospitalization, in an epidemic context, or in the event of failure of antibiotic therapy for more than 48 hours. The aim of this study was to evaluate whether EAD prescription of USA testing was compliant with the recommendations.

Materials and methods: Retrospective, observational study of practice including patients having undergone EAD testing for USA. The data collected were age, gender, patient history, antibiotic intake in the weeks preceding admission, physical examination findings, laboratory test results, imaging results and immediate outcome for the patient. The primary assessment criterion was USA assay in compliance with the recommendations. The secondary assessment criterion was EAD diagnosis of CAP.

Results: Over a period of 6 months, 131 patients out of 8400 were included. The mean age was 66.1 years (range: 18-97). Men accounted for 60.3% (79). No seriousness criterion was identified in 56 (42.7%) of patients discharged to return home and 18 (13.7%) patients hospitalized for a reason other than CAP following EAD assessment. Relative to the current recommendations, USA were determined erroneously for 74 (56.5%) patients (6 P.USA). Hospitalization in a medicine department occurred for 50 (38.2%) patients (5 P.USA and 2 L.USA) and 7 were admitted to intensive care (2 P.USA). Twenty-two patients hospitalized presented with failure of antibiotic therapy for more than 48 h. The 2 L.USA patients resided in an institution outside of an epidemic context: 1 patient presented with a picture of CAP compatible with Legionella infection; the other patient was finally considered a false positive.

Discussion: Testing for Pneumococcus or Legionella USA in EAD is to be implemented in strict compliance with the recommendations. This was not the case in the study for more than 1 patient out of 2. L.USA assay enables rapid case reporting. Training in the rational use of USA determination pursuant to the expert recommendations is needs to be intensified.

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HEAT STROKE MANAGEMENT

Jalal Ashkar (1), P. Pechansky (2), M. Medvedovsky (2)

1. Emergency Department, Hillel Yaffe M.C, HADERA, Israel
2. The Emergency Department, Hillel Yaffe Medical Center, Hadera, Israel

Corresponding author: ashkar@hy.health.gov.il

Keywords: 100, 100, 100

During the entire year in Israel, and especially in the summer months, heat stroke, triggered by high temperatures and humidity, is a danger. The danger is even greater during heat waves and when humidity is above 70%. Those at greatest risk are the elderly, the very young and patients taking psychiatric and anti-epileptic medications. In addition, soldiers and athletes who participate in rigorous outdoor activity are also at risk for exertion heat stroke.

The Emergency Department of Hillel Yaffe Medical Center has created a protocol to guide the management of this condition, according to the Ministry of Health Directive, dated July 15, 2008 and according to practical guidelines from the IDF's Institute for Military Physiology.

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A MULTICENTER PROSPECTIVE COHORT STUDY ON VOLUME MANAGEMENT AFTER SUBARACHNOID HEMORRHAGE

Eiji Isotani (1), Yoshiki Obata (2), Kikuo Ohno (2)

1. Emergency department, Tokyo Womens' Medical University Medical Center East, Tokyo, Japan
2. Neurosurgery department, Tokyo Medical and Dental University, Tokyo, Japan

Corresponding author: isotaner@dnh.twmu.ac.jp

Keywords: subarachnoid hemorrhage, volume management, PiCCO

Introduction: Volume management is crucial in intensive care, however, in some patients it is very hard to achieve optimal water balance. Subarachnoid hemorrhage (SAH) patient is a representative example. Cardiopulmonary complications are common after SAH: neurogenic pulmonary edema, cardiac failure, and so on. Triple H therapy is a standard management after SAH, but it also has adverse effects; pulmonary edema, increased intracranial pressure, hyponatremia, sepsis and so on. We have just finished the multicenter controlled trial about cardiopulmonary function after SAH. We describe herein a trial of minimally invasive PiCCO Plus monitoring of cardiopulmonary function to reexamine the effect of triple H therapy after SAH.

Material & Methods: This multicenter controlled trial analyzed the cardiopulmonary functions of 204 patients after SAH by PiCCO Plus monitoring over a period of two weeks.

Results: Output, contractility and afterload were essentially normal after SAH. However, slightly elevated intrathoracic blood volume led to fluid redistribution that caused hydrostatic fluid retention in the lung tissues. Triple H therapy had no additional cardiopulmonary features except for the elevated plasma BNP levels. Persistent catecholamine release and altered sensitivity of blood vessels to catecholamines caused the blood volume redistribution and hydrostatic pulmonary edema. Cardiac preload due to catecholamine release led to brain natriuretic polypeptide (BNP) release, resulting in natriuresis. This appeared to be the underlying mechanism of cerebral salt wasting syndrome.

Conclusions: We found that hydrostatic pulmonary fluid retention occurred after SAH. Triple H therapy gave no additional benefits on the systemic circulation after SAH.

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PROFILE OF THE PATIENTS AT PALLIATIVE CARE IN A EMERGENCY DEPARTMENT.

Ana Paula Boaventura (1), Francislene Frank dos Santos (2), Cleuza

Aparecida Vedovato (1), Erika Christiane Marocco Duran (1)

1. Faculty of Nursing, University of Campinas - UNICAMP, Campinas, Brazil
2. Emergency Department, State Hospital Sumaré, Sumaré, Brazil

Corresponding author: anaboa@fcm.unicamp.br

Keywords: palliative care, emergency, nursing

There are in emergency department patients with pathologies of the highest incidence in the population and they clinical or surgical emergencies involving the cardiovascular and cerebrovascular diseases and malignancies that today the country is the third largest cause of death exceeded only by diseases of the circulatory system and the external causes and violence. Patients with oncological diseases often receive palliative care that are direct and indirect care to ensure the prevention and intervention of patient suffering, including support to the family / caregiver. Are provided by interdisciplinary teams of health during hospitalization or at home. Emergency units being welcoming these patients are assisted at home when there is worsening of clinical symptoms. Thus, palliative care require intervention at the level of symptom control, to reduce suffering, requiring specific training of health professionals in this area, for these patients in specializes care units and emergency. **OBJECTIVES** Analyze the profile of cancer patients under palliative care are seen at the Emergency Department (ED) of the State Hospital Sumaré (HES) – Brazil. **METHODS** This is a quantitative, retrospective exploratory study. We used the medical records of cancer patients in the emergency department in the second half of the year 2012. The research project was approved by the Ethics in Research. **Results:** We analyzed 19 medical records with an average of 3 patients seen per month, 42%(08) were female and 58%(11) male. Age 37-89 years, mean 65 years. All patients had a cancer diagnosis and were in palliative care, 16% (03) patients underwent some type of surgical oncology, 74% (14) had some of comorbidity. The waiting time to be served was on average 12 minutes. Of these 68%(13) were referred to another service, and 32%(6) by spontaneous demand. The average stay was 09 days in emergency department (ED) per patient, with a minimum 01 day and maximum 32 days of hospitalization. Only 10%(02) were transferred to the Medical Clinic for palliative care, the remaining 90%(17) remained in ED. Among the procedures performed and prescriptions include: enteral nutrition, nasogastric catheter open, intubation with mechanical ventilation, tracheostomy, endoscopy, indwelling catheter, paracentesis and blood transfusion. With regard to the access roads, 21%(04) of the patients remained with subcutaneous catheter, 37%(07) central venous catheter and 42% (08) peripheral venous access. With respect to prescribed medications: 95%(18) patients had prescribed analgesia (dipyron or tramadol), 79%(15) antiemetics (metoclopramide or ondansetron), 53%(10) with prophylaxis (pulmonary embolism) prescribed (enoxaparin or aspirin), 53%(10) gastric ulcer prophylaxis (ranitidine or omeprazole), 47% (09) with antibiotics, 37%(07) with opioids (morphine), 16%(03) with antipsychotics and prescribed antihistamines (chlorpromazine and

promethazine), 10%(02) with prescribed neuroleptics (haldol), 5%(01) with benzodiazepine and 26%(05) with sedation (midazolam + fentanyl) continuous infusion pump. With regard to the outcome of the patients, 95%(18) died and 5%(01) were discharged with palliative proposal at home. **CONCLUSION:** According to the results, we observed a prevalence of these patients in the unit, with a long length of stay. Only one patient received palliative proposal at home, a practice now widespread in many countries and we should encourage the possibility within the social environment of each family identified during the hospitalization period. When we analyze the assistance, shows a series of disagreements and lack of uniformity during treatment is the use of drugs or the decision to intubation featuring therapeutic investment. In this scenario we suggest a deeper discussion and interdisciplinary palliative care for cancer patients with the aim of formalizing a protocol, only contemplating the various knowledges in a emergency department.

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CRITICAL PATIENTS REFERRED TO EMERGENCY ROOM NECESSITATING ICU ADMISSION: SPECTRUM, APACHE II SCORES, LENGTH OF STAY AND OUTCOME

Shahram Keikha (1), Mohammad Davood Sharifi (1)
1. emergency medicin, mashhad univercity medicin, mashhad, Iran, Islamic Republic of

Corresponding author: shahram.keikha@gmail.com

Keywords: APACHE II scores, Critical Patients, ICU

INTRODUCTION: Objective: To evaluate the spectrum of primary diagnoses, APACHE II scores, Length of stay and outcomes of critical patients admitted to the emergency room who were candidates for ICU admission.

METHODS: A 6-month prospective study in an Emergency Room (ER), in a tertiary level teaching hospital. All critical patients who presented to our ER and during their six initial hours of arrival into ER necessitated ICU admission (according to their responsible physician's opinion) were included. Primary diagnosis, APACHE II score, Length of stay in ER and outcome of patients were evaluated according to a pre-defined multi-aspect questionnaire. Patients were followed until death or discharge from hospital.

RESULTS: Four hundred and thirty-two patients were enrolled, among them 57 patients were candidate for ICU admission; of whom 21 patients had trauma (group 1) and 36 patients had non-trauma medical causes (group 2). The most common primary diagnosis among group 1 was Trauma-related ICH (10 patients) and among group 2 were stroke-related

ICH and sepsis (each one 6 patients). Mean of Initial APACHE II score were more in group 1 than group 2 ($p < 0.001$). Range of LOS in ER before transportation to ICU was. Mean of LOS, was more prolonged in group 2 than group 1 ($p < 0.05$). In group 1, 12 patients had need for emergent operation during their first 24 hour of arrival into ER. Before transportation to ICU, 23 patients died in the ER, of whom 5 patients died during the first 24 hours. Also 21 patients died after transportation to ICU. In patients who were admitted earlier to the ICU, mortality in hospital was less than who had a longer LOS in ER ($p < 0.05$). Finally 10 patients were discharged from hospital.

CONCLUSION: According to this study, among critical patients in ER who necessitated ICU, the sooner the admission in ICU; will lead to better prognosis. A critical care setting accessible in the ER, will improve the prognosis of those patients who have a long LOS in ER before transportation to hospital ICU.

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APPLICATION OF THE WELLS AND GENEVA SCORES IN CLINICAL PRACTICE OF EMERGENCY: A RETROSPECTIVE STUDY

Patricia Giraldez Martinez (1), Maria Teresa Lopez Monteagudo (1), Jose Ramon Parada Castellano (1), Maria Del Pilar Pavon Prieto (1)

1. SERVICIO DE URGENCIAS, Hospital Montecelo. Complejo Hospitalario de Pontevedra, PONTEVEDRA, Spain

Corresponding author: terelopez78@gmail.com

Keywords: Pretest probability, D-dimer, Angio CT.

Pulmonary embolism (PE) is a relatively common cardiovascular emergency. Since CT angiography in routine clinical practice, the incidence has increased from 62.1 to 112.3 cases per 100,000 inhabitants (USA). However, the incidence is underestimated (many more cases in clinical autopsies). Early diagnosis is essential, since immediate treatment is highly effective, reducing the associated morbidity and mortality. The development of predictive score served as a clinical tool for the diagnosis of this disease management. We present a retrospective study of a year, of pulmonary embolism cases admitted from the emergency (September 2011 to October 2012). Variables analyzed included age, sex, weight, predisposing risk factors and Geneva and Wells score, D-dimer value, electrocardiographic abnormalities, changes in chest radiograph, date of CT angiography or V/Q centellogram, lower limb ultrasonography, CT severity, and initial suspicion in emergency, etc... Main objective of the study: to analyze the application of diagnostic algorithms and knowing the type of cases we serve in our hospital.

Results: 62 cases were finally obtained with definitive diagnosis of PE (AngioCT). The distribution according to sex was 35 women (54,7%) and 29 men (45,3%), with a mean weight of 79 kg. In case where the D-dimer was obtained the mean value was 8732 (30 patients). Also the mean age was 66 years old (ranging from 20 to 96 years) and the incidence of PE increasing from sixty years in both sexes. In the analysis of the cases, 47 of the 64 cases had previous attention during the month before the episode of pulmonary embolism. Based on the risk factors directly related to the occurrence of pulmonary embolism we found that: in 34.38% of patients there was a history of prolonged rest, 12.5% had suffered a previous deep vein thrombosis (DVT), and 7.81% had a history of one previous EP. In group of women, the use of oral contraceptives 14.28% (5/35 women). In the analysis of thrombophilia, were detected in 18 of the 22 patients studied, being the most frequently detected thrombophilia, the presence of lupus anticoagulant (9 cases). Considering cancer as a risk factor directly related to thromboembolic disease, cancer was present as an active diagnosis in 14.07% of patients, being 9.38% a diagnosis related to the current process of DVT / PET. In the analysis of other comorbidities present in cases, smoking was found to be the characteristic most commonly found in patients, appearing in 20% of cases. When applying predictive test probability for PE (Wells and Geneva score), we found that the vast majority of our cases were low-intermediate probability for pulmonary embolism. In the case of the Geneva score, could not be applied in ten of the cases for lack of arterial blood gases as parameter to calculate the score, with the consequent loss of sensitivity of this test. And if we consider that the D-dimer could only be determined in 30 patients by age and other restrictive criteria (chronic renal failure, active cancer, etc), there are a number of cases that are suspected appreciable only by the medical history and clinical experience. In review of alterations in the complementary tests, we have found: 1.- Minimal changes in ECG, the most frequent presence of right bundle branch block (11 patients). 2. - Nonspecific changes in the chest radiograph, being the most common radiological pattern, normal (55%), followed by the presence of a small pleural effusion (14%), and interstitial pattern (11%).

With all these data, we established the diagnosis of suspected pulmonary embolism in the emergency department in 43 cases (67.19%). Other alternative diagnoses were respiratory infection (12%), malignancy (6%), PE and cancer (3%), pulmonary tuberculosis (3%), etc ... In cases where there was no clinical suspicion in emergency, diagnostic delay did not exceed 7 days, with a median of 2 days after hospital admission. In 55% of diagnosed cases of PD was not massive (for angioCT findings). In 40 of the 64 patients underwent Doppler ultrasound as a complementary test, being pathological in 45%.

Conclusions: We obtained a similar rate to the series published in the literature. Despite the utility of the predictive score, a large number of our cases were low-intermediate probability, clinical suspicion being determined by the doctor / practitioner the mainstay for

the diagnosis of these cases. In most cases were not massive PE by AngioCT.

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SURVEY OF AWARENESS AND USE OF THE CCR AND NEXUS AT THE EMERGENCY DEPARTMENT LINKÖPING UNIVERSITY HOSPITAL, COUNTY COUNCIL OF ÖSTERGÖTLAND, SWEDEN.

Lee Ti Chong (1)

1. Emergency department, Linköping University Hospital, Linköping, Sweden

Corresponding author: leeti85@hotmail.com

Keywords: emergency care, guidelines, neck injury

Survey of Awareness and Use of the CCR and NEXUS at the Emergency Department Linköping University Hospital, County Council of Östergötland, Sweden.

Lee Ti Chong, MD, Emergency Department, Linköping University, County Council of Östergötland, Sweden.

Topic: Use of clinical guidelines

Keywords: Emergency Care, Guidelines, Neck injury

ABSTRACT

Background

To determine which patients with neck injury that need undergoing further radiological examination in the emergency department can be difficult. Although incidence of cervical fracture or/and spinal injury is low in alert and stable patients with intact neurological status, clinicians refer a majority of these patient for further c-spine radiology 'just in case'. This approach cannot be justified when there are clinical decision rules available to assists clinicians in its decision making. Unnecessary utilization of C-spine radiograph expose patients to unwanted radiation, add significantly to the health cost, increase patient time in the emergency room, and lead to prolonged unnecessary immobilization and create unnecessary extra work for the emergency departments staff. The Canadian Cervical spine Rule (CCR) and the National Emergency X-Radiography Utilization (NEXUS) Low-Risk Criteria are criteria designed to guide C-spine radiography in trauma patients. Both of these rules have been shown to decrease the use of radiography without adversely affecting patients' outcome.

Aim

The objective of this survey is to determine clinicians' awareness and use of CCR and NEXUS in patient with potential neck trauma at the Emergency Department of Linköping University Hospital, Sweden.

Method

A self-administered e-mail survey was sent to all clinicians potentially working and having care of patient with neck trauma at the Emergency Department of Linköping University Hospital. These includes all emergency physicians (n=39), orthopedicians (n=31), surgeons (n=34) and the interner (n=36). Twelve clinicians were not on duty during the study period.

Result

The response rate was 60% (77/128). The reported awareness of the CCR ranged from 96,5% (Emergency physicians) to 21,4% (Surgeons). The reported user of CCR ranged from 69% (Emergency physicians) to 14% (Surgeons). Eighty one percent of the clinicians were unaware of NEXUS.

Discussion

Although the reported awareness of CCR is highest among the emergency physicians, still only 69% of them reported using it. The reported awareness and use of CCR is surprisingly low among the surgeons who were the first line doctors taking care of trauma patients at the emergency department. Majority of the clinicians were unaware of NEXUS despite the fact that NEXUS was developed earlier than CCR. This study shows that there is a need for information and further education among clinicians and medical students, especially those who will be taking care of patients with neck injury. Awareness of these rules are however not enough without implementation and its continuous evaluation. The current situation will lead to many patients unnecessarily radiographed, as well as not efficiently used healthcare resources.

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APPROPRIATE USE OF IMAGING STUDIES IN PULMONARY EMBOLISM DIAGNOSIS

María Agud Fernández (1), Antonio Ruiz Ollero (2), Javier Gavilanes Plasencia (3), Patricia Eguren Escriña (1), Leonor Roa Santervás (1), Ana Iriarte García (1), Nuria Martín Cardenal (1), Eneko Zugazaga Baballo (1), María González de Gracia (1), María C

1. Emergency department, Hospital de Torrejón, Madrid, Spain

2. Radiology department, Hospital de Torrejón, Madrid, Spain

3. Otorhinolaryngology, Hospital de Torrejón, Madrid, Spain

Corresponding author: mariaagud@gmail.com

Keywords: imaging studies, computed tomography, pulmonary embolism

Lately, there is increasing discussion about rising exposure to radiation of our patients through imaging studies

The primary outcome of this study is to assess the adherence of the computed tomography (CT) tests request in patients with suspected pulmonary embolism to the radiological indications. The adherence to these indications was established by a radiologist evaluating clinical data and guidelines of appropriate use of imaging studies.

We conducted a transversal observational study. The primary outcome, the adherence to indications established by the radiologist, was prospectively collected. The remaining variables were gathered by retrospective review of medical records.

All CT scans performed on patients older than 14 years in the Emergency Service of the Hospital de Torrejón, from January to June 2012 were included.

We also wrote a brief medical history with data to provide sufficient information to the radiologist in order to decide if the test was indicated or not. We included patient's final diagnosis too.

We collected a sample of 106 patients, with an average age of 76 years. 56.6% of them women; 32.1% were on antiplatelet therapy and 15.1% were taking anticoagulants; 12.3% of patients had renal failure.

Regarding the determinants of clinical pretest probability of pulmonary embolism, only 5.7% of patients had symptoms of deep vein thrombosis (leg swelling, pain with palpation) and 13.2% had a history of thromboembolic disease. 35.8% of patients had tachycardia (> 100 beats/minute), 15.9% had undergone surgery, suffered trauma or required immobilization \geq 3 days in the previous 4 weeks, and 18.9% had a diagnosis of active malignancy. None of the patients reported hemoptysis. In the retrospective review of the medical record, in 62.3% of patients, it was considered that there was a more plausible alternative diagnosis.

72.6% of patients had dyspnea and hypoxemia was present in 60.4%, measured in arterial blood or pulse oximetry. Of patients with available blood gas, 32 (40.5%) had hypocapnia or alkalosis.

In up to 30 patients electrocardiogram was not described in the medical record. In 9 patients no chest radiograph was performed. In 102 patients (96%) the D-dimer was positive. In our sample, after CT performance, pulmonary embolism was diagnosed in only 25 patients (23.6%). Therefore "over-indication" percentage was 76.4%.

The radiologist, after reviewing all collected data, the brief medical history justifying the request and the chest radiograph, independently determined whether the test was indicated or not. He made this estimate blind to the final outcome of the scan. The radiologist considered that only in 58 patients (54.7%) was the performance of a CT indicated. Of these patients, 21 (36.2%) had no pulmonary embolism. Therefore, the radiologist "over-indication" was 63.8% (37 patients).

Among the 48 patients (45.3% of the sample) in whom the radiologist didn't estimate CT to be a suitable test, 44 (91.7%) had no pulmonary embolism. However, 4 patients really had it, so that 8.3% would have remained undiagnosed.

Multivariate analysis was performed and no significant correlation was found between variables that would favor or reduce the agreement between the radiologist and the emergency physician.

CONCLUSIONS

The results of this study show that a more strict evaluation of the clinical pretest probability is needed in the Emergency Department for the diagnosis of pulmonary embolism, in order to avoid scan "over-indication".

Decisions are still made taking more into account D-dimer positivity than other much more relevant clinical data. We have also learned that chest radiograph evaluation by a radiologist in many cases finds out an alternative diagnosis unnoticed to the Emergency Department.

"Over-indication" is high, both in the Emergency Department and in the Radiology Department, and yet 8.3% of patients would have remained undiagnosed. These data

show the enormous diagnostic challenge that pulmonary embolism still poses.

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CHEST RADIOGRAPHY IN EMERGENCY ROOM: DO WE TREAT MEN AND WOMEN SAME?

Marin Pavlov (1), Kristina ?gela (2), Vesna Degoricija (2)

1. Medical intensive care unit, Sestre milosrdnice University Hospital Centre, Zagreb, Croatia

2. School of medicine, University of Zagreb, Zagreb, Croatia

Corresponding author: marin.pavlov@gmail.com

Keywords: Chest radiography, Gender differences, Emergency department

Background: Chest radiography (CR) is the most prescribed radiologic test performed on patients (pts) treated within Emergency Department (ED). It is cheap, quickly obtainable and available. Data on gender differences related to prescribing CR in ED are sparse.

Aim: to investigate gender differences on prescribing CR, CR findings and predictors of pathologic CR findings in pts presented to ED.

Methods: the authors analysed electronic data on ED visits („all-comers“) of a single University Hospital Center for a period of 18 days (Decembre 20th 2012 to January 6th 2013), retrospectively. Data on medical history, chief complaint, main diagnosis, demographics and recommendations were collected.

Results: a total of 949 pts visited ED during named period, with slight female predominance (53.0%). Female pts were generally older (59.8 vs 59.5 years; not significant (ns)), spent less time in ED, were more often discharged (79.2% vs 72.1%, $p=0.011$), more often had history of hypertension (46.8% vs 45.0%), most common chief complaint was abdominal pain (20.1%) followed by chest pain (16.9%). Male pts had higher frequency of diabetes (14.3% vs 12.0%), chronic obstructive pulmonary disease (9.7% vs 6.8%) and coronary artery disease (CAD) (13.2% vs 7.0%) reported in medical history, most common chief complaint was chest pain (19.6%) followed by dyspnea (13.9%). CR was more often performed in male pts (41.0% vs. 38.6%), but the finding was more often normal in female (55.1% vs 50.8%). Both of these differences failed to reach statistical significance. Cardiomegaly, pleural effusion and pulmonary congestion were the most common radiologic findings in both genders. Female pts with chest pain as chief complaint more often underwent chest radiography when compared to male pts (57.6% vs 49.4%, ns). Statistical significance was reached in group of patients younger than 45 years, where pathologic finding was more often found in male pts ($p=0.026$). However, due to low number of pts, this finding should be interpreted with caution. On logistic regression, pathologic findings were predicted with dyspnea as the chief complaint ($p>0.00001$) and history of heart failure

($p > 0.0000001$), as expected. Elevated body temperature as chief complaint ($p = 0.015$) and history of CAD ($p = 0.015$) also predicted pathologic finding in female pts. The same was observed for chest pain as chief complaint ($p = 0.048$) in male pts, while predictors found in female pts did not reach statistical significance.

Conclusion: the authors failed to prove major significant gender difference in radiologic workup in emergency setting. Nevertheless, some trends were observed and although the total number of pts included in the study was substantial ($n = 949$), upon gender and radiology workup stratification the number of pts in subgroups remained relatively low. Of topic, the authors want to stress out the vast number of normal findings obtained in our study (53.1%). This urges for clear guidelines and recommendations for chest radiography in ED, since radiation exposure and costs are substantial, given the large number of examinations.

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VALIDATION OF MEDICAL IMAGINE PROCEDURES, LIKE ABDOMINAL ULTRASONOGRAPHY AND COMPUTED AXIAL TOMOGRAPHY SCAN FOR THE MODEL IN EMERGENCY DEPARTMENT, BASED ON CLASSIFICATION TREE, OF DIAGNOSIS RELATED GROUPS OF PATIENTS WITH RIGHT ILIAC FOSSA PAIN.

Mindaugas Gudelis (1), Daneil Lacasta Garcia (1), Javier Trujillano Cabelo (2)

1. Emergency department, Hospital Universitari Arnau de Vilanova, Lleida, Spain

2. Intensive Care department, Hospital Universitari Arnau de Vilanova, Lleida, Spain

Corresponding author: mgudelis@gmail.com

Keywords: right iliac fossa pain, diagnostic model in emergency department, medical imagine procedures in emergency department

Objective: Review the uses of medical imagine procedures as a Abdominal Ultrasonography and Computed Axial Tomography (CAT) scan applied for the different nodes of the model based on classification tree (CT) method of patients with right iliac fossa (RIF) pain.

Material and Method: The prospective observational study, which includes 252 patients, older than 14 years, with RIF pain. The signs, symptoms, laboratory values and pathology reports of each patient were collected and evaluated. The construction multinomial multivariable model was done based on CART methodology (Classification and Regression Trees, automatic selection of hierarchy of variables, cut-off points of continuous variables and cross-validation). The Abdominal Ultrasonography and CAT scan done in emergency department were analysed retrospectively of each node of the model. The in admission

to the surgical department and surgical decision-making were reviewed.

Results: Out of total 252 patients, 53% were males. The age ranged 33.3 ± 16 years. Final diagnosis we divided in 4 groups: 1-(AA) Acute appendicitis (36,9%), 2-(NsP) Non-specific RIF pain (45,2 %), 3-(IBD) Inflammatory bowel disease (6,0 %), 4 -(NID) other abdominal disease without inflammation (11,9%). The CT selects the variables of the count of white blood cells (WBC), C-reactive protein (CRP) concentration, Blumberg's sign, pain in RIF with cough, sex and duration of clinical symptoms determining 10 groups of patients (application of decision rules): 4 groups of probability of AA (72,7%-52,6%-94,1%-52,7%), 3 groups of NsP (86,4%-71,1%-87%), 1 group of NID (60%) and 1 without probability superior then 50%. Abdominal Ultrasonography were done in % of patients and CAT scanner in %: group 1 (60%;0%), 2 (36,4%;27,3%), 3 (40,9%;4,5%), 4 (2,2%;0%), 5 (36,8%;10,5%), 6 (17,4%;17,4%), 7 (15,7%;15,7%), 8 (48%;4%), 9 (23,1%;7,7%), 10 (54,5%;0%). 48% of patients were admitted in the hospital and 107 underwent the operation: group 1 (30%; 10%), 2 (81,8%;72,7%), 3 (20,5%;13,6%), 4 (0%;0%), 5 (57,9%;52,6%), 6 (13%;8,7%), 7 (100%;100%), 8 (88%;72%), 9 (15,4%;15,4%), 10 (100%;81,8%).

Conclusion: The methodology based on CT, allow us to identify the groups of the patients with different possibilities of diagnosis. The CT establish the groups with high probability of AA and NsP, which allow us to determinate with more the submission or not to the diagnostic proves like abdominal ultrasonography and CAT scan in the patients with right iliac fossa pain.

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PATIENTS POST GASTRIC BYPASS SURGERY PRESENTING IN THE EMERGENCY DEPARTMENT

Agnes Meersman, Greet Dieltiens, Kurt Anseeuw
Emergency department, Stuivenberg Hospital, Antwerp, Belgium

Corresponding author: alameersman@hotmail.com

Keywords: gastric bypass, emergency department, complication

Patients post gastric bypass surgery presenting in the emergency department .

ABSTRACT

BACKGROUND : The epidemic proportions of obesity in the Western society , together with the widespread recognition of morbidities associated with obesity has led to an explosive growth in bariatric surgery . This leads to an increasing number of post gastric bypass patients reporting to the emergency departments, not only with general complaints, but also complaints related to the gastric bypass surgery. The Stuivenberg Hospital in Antwerp has a longstanding experience in bariatric surgery. The Surgery department obtained the quality label of the International

Federation of Obesity Surgery. Annually 750 patients are undergoing bariatric surgery in this centre.

METHODS : A retrospective study of one year of post-gastric bypass surgery patients presenting at the emergency department of ZNA Stuivenberg was performed. We studied demographic data, chief complaints, diagnosis, referral patterns and length of stay (LOS) in the emergency department.

RESULTS : 159 patients were included, with a wide variety both in terms of clinical presentation as in terms of diagnostic signs. This group represents 0,5% of the total 32232 ED-visits during the year 2012. The male/female ratio was 20/80 (32/127). Only 23 (14,46%) patients arrived by the Emergency Medical Services, the remainder (136 – 85,54%) were self-referrals. 63 (39.62 %) patients were treated as inpatient, the remainder 96 (60,38%) as outpatient. The median LOS was 190 min (Q1 130; Q3 364). In-patients are significantly older than outpatients (Mean 41.08 years (CI: 38.19; 43,96) versus mean 37.22 years (CI:35.02; 39.43). In-patients also have a significantly longer LOS at the emergency department than outpatients (Mean 293.90 min (CI 243.95; 343.85) versus mean 191.07 min (CI: 167.54; 214,60).

DISCUSSION: Post gastric bypass surgery patients represent a small subgroup of ED-patients. Most of them are self-referrals and are treated in an outpatient setting. This population has a rather long LOS in the ED, due to the presentation with atypical –almost subtle – clinical and diagnostic signs and symptoms. 40% of this group is hospitalized, most often in observation for a potentially life-threatening complication of bariatric surgery and therefore in need of an urgent treatment.

CONCLUSION : The growing population of post-bariatric surgery patients at the emergency department and the atypical presentation of their symptoms, is a challenge for the emergency physician. It demands understanding of the most common bariatric surgery techniques and their specific complications. Moreover the most important message is to always consider the complications of bariatric surgery by any of these patients, however subtle their complaint may be.

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HEMODYNAMIC MONITORING ROLE OF CARDIAC AND SEPTIC PATIENTS IN NURSE PRACTICE

Ildiko Szabo (1), Adela Golea (1)

1. Emergency department, Emergency Clinical County Hospital, Cluj-Napoca, Romania

Corresponding author: ildy_szabo@yahoo.com

Keywords: hemodynamic monitoring, cardiac and septic patients, nurse practice

Introduction

Hemodynamic monitoring is an essential part in hemodynamic unstable patient care. Hemodynamic

variables often help physicians in differentiating the causes of instability and subsequent decide appropriate therapeutic interventions. With the rapid development of technology, and with improvement in understanding the pathophysiology of diseases, the usefulness of hemodynamic monitoring has changed significantly over time. One of the main reasons why it is used hemodynamic monitoring is to detect any change before it cause serious injury in the body, and also allow clinicians to monitor patient response to treatment.

Early recognition of changes and trends in the status of a hemodynamically unstable patient, help nurse in detecting parameters which are life threatening and allowing initiation of interventions to stabilize the patient. In this sense, an understanding of hemodynamics and hemodynamic monitoring it is very important in the nurse practice, for recognize all the changes in the critical patients' status.

Objectives

The study objectives are the hemodynamic monitoring role in identifying patients with life-threatening risk in clinical contexts of acute cardiac and septic pathology in emergency department.

Materials and methods

Patients in the study were selected from all the patients admitted to the Emergency Department of Cluj-Napoca, between 1 January to 30 April 2013, with cardiac/septic pathology and clinical criteria of hemodynamic instability. A group of 26 patients were included in the study, which were followed hemodynamic parameters at presentation and in dynamic in the first hour after admission. Data analysis was performed with R Commander.

Results

Partial results, of ongoing research showed in the group of 26 patients identified (14 with acute cardiac pathology, 12 with septic pathology) shock index values increased (above 0.9) at presentation in 50%, with highlighting the percentage increase in the first 20 minutes (53.84% at 5 minutes and 65.38% at 20 minutes). They identified 30.76% of patients as having oro-tracheal intubation indication. Invasive blood pressure monitoring was performed at 11.53%. Also, 42.3% needed vasopressors support for blood pressure maintaining and 26.92% had reduced urine output (less than 0.5 ml/kg/h).

Conclusions

1. Noninvasive hemodynamic monitoring in emergency nurse practice is essential to identify patients with vital risk nursing diagnosis.
2. Early recognition of changes in hemodynamic parameters of clinical deterioration allows early initiation of interventions to stabilize and prevent the complications.

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ANALYSIS OF FACTORS ASSOCIATED WITH A NEED FOR RED BLOOD CELL TRANSFUSIONS IN ED PATIENTS WITH GI BLEEDING.

David Salo (1), Fred Fiessler (1), Paul Szucs (1), Patrick Zimmerman (1)

1. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: ds1122@aol.com

Keywords: GI bleed, Transfusion, Analysis of factors

Introduction: Patients with or without anticoagulation therapy with GI bleeding have potential risk for morbidity and mortality. While FFP can be used to reverse warfarin in such patients we previously have shown that taking Clopidogrel Bisulfate (CB) or ASA may not require additional treatment other than with pRBC's. It is unknown if any initial ED vital signs or lab testing can predict patients (on or not on anticoagulation) who are more likely to require blood transfusions.

Objectives: To examine whether factors such as age, sex, any anticoagulation use, initial ED Ht Rt or SBP, platelet count, INR or PTT are predictors of blood transfusion requirement for patients with GI bleeds who present to the ED. **Methods:** Design: Retrospective, case-controlled study; IRB approved.

Setting: Community ED with ED Residency and 85,000 visits/year.

Participants: Admitted patients > 55 yrs presenting with GI bleed (ED ICD9 code) from 7/1/2006-6/30/2008. Protocol: ED records and hospital charts were reviewed. Patients were analyzed for need for pRBC transfusion while in the ED or after admission based on age, sex, any anticoagulation use, initial ED Ht Rt, initial ED SBP, INR, PTT, or platelet count. Data was extracted consecutively onto standardized forms. Main outcome measurements: Multivariate Analysis and Linear Regression was used to determine if age, sex, any coagulation treatment or combination (ASA, CB or warfarin), initial ED Ht Rt, initial ED SBP, platelet count, INR, or PTT were predictive of a need for transfusion. Data was analyzed using appropriate statistical tests ($p < 0.05$). **Results:** 1397 patients had GI bleeds. 598 were excluded by age, discharged or predefined exclusion criteria. Median age was 78 (IQR of 70-85), 334 (514.8%) were female. Of the 799, 609 (76%) were reviewed. 383 (63%) required blood transfusions. Multivariate analysis showed no significant difference with regards to blood transfusion requirement by age (mean difference 0.89; 95% CI -0.87 to 2.6; $p < 0.32$), platelet count (mean difference 0; 95% CI -15 to 16; $p < 0.95$), PTT (mean difference 0.2; 95% CI -1.0 to 1.5; $p < 0.72$), or gender ($p < 0.27$); however initial ED Ht Rt (mean difference -6.0; 95% CI -9.0 to -3.0; $p < 0.0001$), initial ED SBP (mean difference 15; 95% CI 10.0 to 19.0; $p < 0.0001$), any anti-coagulation use ($p < 0.0001$) and INR (mean difference -0.08; 95% CI -0.12 to -0.04; $p < 0.00010$) were associated with a blood transfusion requirement. On linear regression analysis only initial ED Ht Rt ($p < 0.0003$) and initial ED SBP ($p < 0.0001$) were associated with a need for transfusion. **Conclusion:** Our study suggests that while lab work is helpful in the evaluation of patients with GI bleeds, the initial vital signs are important predictors of need for those patients who will require transfusions. **Limitations:** Small sample size, retrospective study, difficult to factor co-

morbid conditions affecting bleeding and transfusion requirements.

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ABDOMINAL PAIN IN YOUNG FEMALES: A SINGLE CENTRE AUDIT AND REVIEW OF MANAGEMENT

Bethan George (1), Haiko Jahn (2), Ffion Davies (2)

1. General Medicine, Leicester Royal Infirmary, Leicester, United Kingdom

2. Emergency Department, Leicester Royal Infirmary, Leicester, United Kingdom

Corresponding author: bethangeorge@doctors.org.uk

Keywords: Abdominal pain, Management and investigation, Audit

Introduction: The authors report a single centre audit looking at the correct investigation and management of 16-18 year old girls with abdominal pain in the Emergency Department setting. Minimum standards such as eliciting a good history, examination and bedside investigations are the foundation for establishing the underlying cause of such a presentation.

Aim/objectives: We audited females aged 16-18 presenting with abdominal pain to see how we assess, investigate and manage these patients when they present to the Adult Emergency Department at the Leicester Royal Infirmary in 2010.

Method: Retrospective analysis of female patients aged between 16 and 18 took place using case notes. Documentation was analysed and minimum standards were set and reviewed. 63 patients were identified from electronic records. 27 were excluded: 10 patients who were redirected to other services as a result of the triage assessment carried out in Emergency Department, 13 notes were not available and 4 patients did not wait for assessment.

Results: Specific questions considered to be relevant when investigating a presenting complaint of abdominal pain were well documented: pain location (97% of cases), pain score (72%), urinary symptoms (72%), vomiting (69%), bowel symptoms (61%), last menstrual period (64%). However, other important aspects were poorly documented: sexual history (31%), contraception (42%), STI history (8%). Basic bedside investigations considered to be minimum standard of investigation in young females presenting with abdominal pain included urine dip (performed in 78% of cases) and urine β HCG (performed in 68% of cases) were not routinely done in all patients. No clear diagnosis was recorded at discharge in 44% of cases.

Conclusion: Improvements are needed in relation to documentation and history taking, especially in relation to sexual history, contraception and STI history. Improvements are also needed in relation to the completion of basic bedside tests such as urinalysis and pregnancy testing to aid diagnosis and management of these patients.

Recommendations: The authors recommend the creation of a proforma pathway for use in the emergency department setting to aid diagnosis and management of female patients presenting with abdominal pain, ensuring adequate minimum standards are met in history taking and basic bedside examinations. It may also be of value to employ the use of H.E.A.D.S.S - a psychosocial interview for adolescents - as recommended by the RCPCH. The authors propose a comparative audit looking at the management of females over the age of 18 presenting with abdominal pain to compare outcomes.

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IMPACT OF D-DIMER LEVELS ON PESI SCORE IN IDENTIFICATION OF PE PATIENTS SUITABLE FOR AMBULATORY CARE

Khaled Saraya (1)

1. Emergency Department, Ealing Hospital NHS Trust, London, United Kingdom

Corresponding author: Khaled.saraya.999@gmail.com

Keywords: PE ambulatory care, D-dimers, PESI score

Objectives:

Pulmonary embolism severity index (PESI) score is a 5 categories score that aims to risk stratify 30 days mortality rate (MR) in patients with pulmonary embolism (PE). Patients with PESI score categories I & II have a low 30 days MR and can be treated ambulatory.

In a previous study we identified the immediate (1, 3 & 7 days) and 30 days MR in PE patients in a London District General Hospital patient population with a very high ethnic diversity and disease burden.

Our findings suggested that PESI score categories I, II & III have low immediate MR at 1, 3 & 7 days, thus suitable for ambulatory care.

In this study we aim to

1) Correlate the D-dimers levels in PE patients to their PESI score category.

2) Correlate D-dimer levels in PE patients to all cause immediate (1, 3 & 7 days) MR and 30 days MR

Methods:

In this observational retrospective case note study, we identified patients (n=1606) who underwent CTPA in Ealing Hospital between 30/12/2009 & 20/12/2012. Patients whose CTPA was arranged via ED were included in the study (n=150.)

We are extending our initial assessment of immediate (1, 3, 7 days) MR and 30 days MR of these PESI scored patient to include their laboratory results of the D-dimer levels.

Results:

We correlate the D-dimer levels to each PESI category group of patients.

We correlate the D-dimer levels to immediate (1,3 & 7 days) MR and to 30 days MR

Conclusion:

We aim to identify

1- Whether D-dimer levels in PE patients correlates with immediate and 30 days MR.

2- Whether D-dimer levels correlates to the PESI score category of PE patients.

3- Whether D-dimer levels when added to PESI score will impact decision making regarding ambulatory patient care.

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CAN BASE EXCESS AND PH BE USED AS A PROGNOSTIC INDICATOR IN CRITICALLY UNWELL PATIENTS PRESENTING TO ACCIDENT & EMERGENCY?

Mohammad Ansari (1)

1. Emergency Medicine, George Eliot Hospital, Nuneaton, United Kingdom

Corresponding author: zransari@gmail.com

Keywords: Acid Base Balance, pH, Critically Unwell Patient

Introduction:

It is essential to quickly identify critically unwell patients who have the potential to deteriorate in the Accident & Emergency Department. Heart rate, blood pressure, urine output and peripheral perfusion have been shown to insensitive indicators of underlying physiological disturbances [1,2,3]. In the past, there have been many variables that have been investigated [4,5,6].

Objective: To determine whether arterial base excess and pH taken in Accident & Emergency indicate prognosis of the patient.

Method:

This study looked at the initial arterial blood gases (ABG) results from 133 critically unwell patients, presenting to an Accident & Emergency Department, over a 6 month period. These results were accessed from a password protected database, and the identity of the patients were anonymised.

The aim of this study was to see if there was any correlation between pH and base deficit with the prognosis or outcome of the patient from the Accident & Emergency Department, by cross-referencing the ABG results with the patients' medical records.

Results: Base excess and pH were measured against the outcome, which was; discharged home, medical/surgical admission, ITU/CCU admission and those that died in A&E.

These showed that the mean difference in base excess was greatest between patients who needed surgical/medical admission and patients that die in A&E, with a p value of 0.015, a significant difference.

The boxplot graph for mean difference in pH against outcome showed that the mean pH was very similar for those discharged home and those patients who needed surgical/medical admission.

The biggest difference in mean pH was between patients discharged home (mean pH = 7.4) and those who died in A&E (mean pH = 7.1).

Statistical tests showed that the difference in mean pH were significant between surgical/medical admission and ITU/CCU admission and those that died respectively. The results for mean pH in patients discharged home were not significant against medical/surgical admission but were significant against ITU/CCU admission ($p = 0.026$) and those that died ($p = 0.000$).

Discussion:

A study in 1997, found that there were a large number of critically unwell patients that were treated on general medical or surgical wards, who could greatly benefit from intensive care admission. [12].

This present audit aimed to see if there was a significant difference between base excess and pH respectively with outcome, to investigate whether base excess and pH are good prognostic indicators of outcome. If so, they could be used to identify patients that are at higher risk of mortality and can be transferred earlier to intensive care.

From the results, it is possible to see that there was a significant difference in mean base excess for those patients who needed surgical/medical admission and those who died in Accident & Emergency. These results did not show any significant difference in base excess between surgical/medical admission and ITU/CCU admission.

The mean difference in pH against outcome showed significant differences in mean pH between patients who needed surgical/medical admission, ITU/CCU admission and those that died in Accident & Emergency.

Conclusions:

This study found that mean arterial base excess and pH can be used, respectively, as prognostic indicators in critically unwell patients presenting to Accident & Emergency. Further studies are required to investigate the levels of pH and mean base excess associated with the outcome.

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THE IMPACT OF LENGTH OF STAY FROM EMERGENCY DEPARTMENT TO INTENSIVE CARE

UNIT IN CRITICALLY ILL PATIENTS MANAGED IN THE RESUSCITATION ROOM

Hee Kang Choi (1), Min Jin Choi (1), Mi Yeon Kim (1), Hyun Jin Lee (1), Chang Bae Park (1)

1. Emergency department, Seoul National University Hospital, Seoul, Korea, (South) Republic of

Corresponding author: npng9286@gmail.com

Keywords: length of stay, resuscitation room, hospital mortality

Background

Fast and early intensive care is important for critically ill patients who visit emergency department (ED). Delayed admission to intensive care unit (ICU) is associated with higher hospital mortality. The purpose of this study is comparison of differences between the early admission group and the delayed group.

Methods

The study period was from Jan. 1, 2009 to Dec. 31, 2012. Enrolled emergency patients were managed in the resuscitation room in an urban, tertiary, academic hospital ED. Data were collected from electronic medical record system for demographics and designed resuscitation room registry (RRR) for specific risk factors for patients managed in the room which were recorded by emergency registered special nursing staffs. The patients with trauma were excluded. We classified patients with early admission group and delayed admission group. The cutoff time between two groups was 4hr after entering the resuscitation room. Potential risk factors were age, sex, severity (emergency severity index), mental status (AVPU), systolic blood pressure, malignancy and the cause of entering resuscitation room. Primary outcome was hospital mortality. We analyzed the demographics and outcomes by patients' groups. Adjusted odds ratios (aORs) and 95% confidence intervals for outcomes were calculated for adjusting potential risk factors.

Results

During the study period 3,599 patients were entered resuscitation room. Eligible population was 501, excluding transfer from other hospital (110), admission to general ward (1,689), non medical cases including trauma (299). Of these, early admission group was 337 (67.3%) and delayed admission group was 164(32.7%). Hospital mortality was 33.7% for total patients, 32.1% for early admission group, 37.2% for delayed admission group. Adjusted Odds Ratio (aOR) for hospital mortality was 1.49 (95% CI, 0.95-2.24) in delayed admission group compared with early admission group.

Conclusion

Hospital mortality for delayed admission group was higher than early admission group but the difference was not statistically significant.

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CT ALONE IS ENOUGH TO CLEAR C SPINE IN BLUNT TRAUMA PATIENTS WITH NO MOTOR WEAKNESS.

Mujeeb Ashraf (1), M Azam Majeed (2), David Yeo (1), A Rizvi (1)

1. emergency department, university Hospitals, Birmingham, birmingham, United Kingdom

2. Emergency department, University Hospitals, Birmingham, Birmingham, United Kingdom

Corresponding author: mazammajeed@hotmail.com

Keywords: CT C spine, trauma, motor weakness

Background:

Cervical (C)-spine clearance protocols exist both to identify traumatic injury and to expedite rigid collar and blocks removal. In the past we all have used C spine X rays to clear it. It still is taught in trauma life support courses across the world. With advancing technology, being readily available in major trauma centers, its been replaced by the Computed tomography (CT) of the C-spine. It facilitates the removal of immobilization collars in patients who are neurologically intact. Occasionally patients have a normal CT of the spine but they do have some subtle neurological impairment and then magnetic resonance imaging (MRI) is an indispensable adjunct for evaluating these patients. MRI is a brilliant adjunct to identify spinal cord and ligamentous injuries. There is some published evidence to suggest that these patients with little neurology can be followed up in a week time and re-assessed, as it could just be neuropraxia but there isn't a clear policy that can be followed.

Objective:

Reviewing the literature, to evaluate the incidence of positive MRI, in patients with normal CT and no motor deficit.

Hypothesis:

Normal CT with no motor deficit doesn't miss clinically significant injuries.

Method:

We conducted a literature search and found 3 papers^{1,2,3} relevant to our question.

Results:

Three studies encompassing 3,490 patients met the inclusion criteria. Two of them were conducted in Level 1 and one was conducted at level 2 trauma center. One was prospective and two were retrospective studies. The outcome measure of change in management by the MRI (P < 0.0001) was clinically insignificant.

Conclusion:

Our results are very clear regarding blunt trauma patients, with normal motor examination and normal CT results, of the cervical spine that they do not require further radiologic examination before clearing the cervical spine. With the advancing technologies the 64-slice CT missed no injuries (0%)⁴. Reliance on CT imaging alone, to "clear the cervical spine" after blunt trauma, doesn't miss clinically significant injuries. Our results support the hypothesis that normal CT with no motor deficit doesn't miss clinically significant injuries.

References:

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THE ELDERLY PATIENTS IN MOROCCAN INTENSIVE CARE UNIT

Ibtissam Malajati, Hanane Ezzouine, Boubaker Charra, Abdelatif Benslama

Medical care unit, ibn rochd hospital, casablanca, Morocco

Corresponding author: ibtissamalajati@hotmail.fr

Keywords: elderly, co-morbidities, mortality

The structure of the population changed, with an increase of the proportion of the elderly people, due to the increase of the hope and the quality of life demographic. This phenomena is responsible for the increase of the admissions of the elderly patients in intensive care units (ICU). The aim of our work was to estimate the percentage of the elderly patients admitted in ICU and the impact of the age as a prognostic factor. For this, we made a retrospective study over 15 months, were included all the patients of more than 60 years old, admitted in the medical ICU at Ibn Rochd Hospital of Casablanca. We evaluated: the epidemiological characteristics, the co-morbidities, the several scores systems (GCS, APACHII, APACH III, SOFA), and the mortality of this population. During the period of the study, 54 patients had an age between 60 and 90 years old with an average of 67,15 years, constituting 15,2 % of all the admissions in the ICU during this period, with a gender ratio M/F: 1,57. 66,7 % of those patients had an associated comorbidity; the diabetes in 39 % of the cases, the High blood pressure in 35 % of the cases, the ischemic heart disease in 7,4 % of the cases, the neoplastic pathology represented 3,7 % of the cases. The main motives for admission were CVA(CEREBROVASCULAR ACCIDENT) in 48,1

% of the cases, the metabolic disorders in 20,3 % , the infectious pathology (meningitis, tetanus, leptospirosis, pneumopathy) represented 16,7 % of the cases. The average severity scores estimated were successively: GCS: 11,67, ApachII: 9,18, ApachIII 15,15, SOFA: 1,78. 55,6 % of the patients required an artificial ventilation. 25,9 % of the patients presented a kidney failure at admission, 44,4 % presented a dysnatremia, a dyskaliaemia was found at 25,9 % of the cases. The length of stay in ICU was 12,7 days (from 2 to 76 days), the mortality affected 48,15 %. The presence of age-related comorbidity, in the elderly people, increases the morbimortality of this population in ICU on one hand, and on the other hand constitutes the specificity of the management of the elderly patients in ICU.

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UGI BLEED: GLASGOW-BLATCHFORD SCORING (GBS) SYSTEM IN PREDICTING PATIENTS WITH HIGH RISK OF ADVERSE OUTCOMES.

Srihari Cattamanchi (1), Ibrahim Mohamed (2), Ramakrishnan Venkatakrishnan Trichur (2)

1. Harvard Affiliated Fellowship in Disaster Medicine / Emergency Management, Harvard Medical School, Boston, United States

2. Dept. of Accident & Emergency Medicine, Sri Ramachandra Medical College Research Institute, Chennai, India

Corresponding author: c.srihari@gmail.com

Keywords: UGI Bleed, Glasgow-Blatchford Scoring (GBS) System, Predictors of adverse outcomes

Background:

Several scoring systems have been devised to identify patients with upper gastrointestinal (UGI) bleeding who are at a high risk of adverse outcomes. We prospectively evaluated the accuracy of the Blatchford scoring system for assessing the need for clinical intervention in cases of UGI bleeding admitted to the emergency department (ED).

Aim:

To Predict the Risk of Outcome of patients presenting to ER with Upper GI Bleeding using GLASGOW-BLATCHFORD SCORING (GBS) SYSTEM.

Methods:

This was a prospective study conducted on patients who underwent emergency GI endoscopy at the ED of our hospital. Those who needed blood transfusion, operative or endoscopic interventions to control the hemorrhage were classified into the 'high risk' group.

Results:

Of the 93 enrolled patients, 70 (75.3%) were classified into the high risk group. The Blatchford score was significantly higher in the high risk group than in the low risk group. When a cut-off value of 2 was used, the sensitivity and specificity of the Blatchford scoring system were determined to be 100% and 13%, respectively. Thus, the Blatchford scoring system was deemed to be useful for

distinguishing between the high risk group and the low risk group of patients with GI hemorrhage admitted to the ED.

Conclusion:

The Blatchford scoring system is accurate for identifying definitively low-risk patients of GI hemorrhage, even prior to the performance of emergency UGI endoscopy at the ED.

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APPLICABILITY OF THE AMBER CARE BUNDLE TO A DISTRICT GENERAL HOSPITAL A&E

Lisa Hammond (1), Mark Harrison (1)

1. Accident and Emergency, Wansbeck General Hospital, Newcastle, United Kingdom

Corresponding author: hammond.lisa3@gmail.com

Keywords: AMBER, palliative, escalation

Applicability of the AMBER care bundle to a District General Hospital A&E

L. Hammond1, M. Harrison1

1. Northumbria Healthcare NHS Trust, North Shields, United Kingdom

Background

The AMBER care bundle has been developed as a way of identifying patients with an uncertain recovery to promote relevant discussions about ceilings of care and future planning.

The criteria for being suitable for the AMBER care bundle are as follows:

- A patient who is deteriorating, clinically unstable and with limited reversibility AND,
- At risk of dying within the next 1-2 months[1]

We were interested to discover whether suitable patients can be identified at admission. This would facilitate early discussions about future planning and setting appropriate and agreed ceilings of care from the outset. The benefit of this is that it involves proactive planning, as opposed to reactive decisions; this will not only help improve patient, relative and healthcare professional satisfaction, but also aid in the reduction of A&E admissions.

Method

A retrospective cohort study was conducted on 117 patients, which included all Accident and Emergency attendances at Wansbeck General Hospital in June 2012 who died within 100 days of attendance. This included all patients over 18 years, with no other exclusion criteria.

Patients were identified using the hospital computerised coding records database, as well as the number of admissions within the past 6 months including the number of inpatient days. All notes were analysed using a data collection sheet looking at documented DNAR and escalation decisions in these patients, where they died and if they were started on the Liverpool Care Pathway. Relevant A&E factors were considered such as recent admissions and ITU review as methods of identifying AMBER patients.

Results

85% of this cohort were suitable for the AMBER care bundle.

Number of admissions during the previous 6 months ranged from 1-12 (every patient had had at least one admission). The more admissions seemed to correlate with the patient dying in hospital rather than at home. The majority of patients were admitted once, twice or three times in the preceding 6 months, but a significant number (14%) had 4-6 admissions.

DNARs were in place for the majority of patients, and 50% of those who did not were not suitable for AMBER. The other 50% seemed to have illnesses with realistic interventions and were frequently transferred to ITU or another hospital. However, where a DNAR was not signed, there was no documentation of decisions FOR resuscitation. Additionally, only 23% of these were filled out in A&E, with only 15% by A&E based doctors. By recognising AMBER patients, this could encourage A&E doctors to start thinking about and acting on ceiling of care decisions early on by discussing and signing appropriate DNARs.

A significant number of these patients died on the Liverpool Care Pathway; 92% of these were discussed on the same day as being started. 69% were started in MAU on the same day as their admission. Interestingly, ITU reviews were requested less on these patients.

Conclusion

The majority of this cohort were suitable for the AMBER care bundle, and would have benefited from early discussions regarding escalation and DNAR decisions. The fact that many were started on the LCP on the same day on the Medical Admissions Unit highlights the potential benefits of using the AMBER tool as discussions would take place earlier and build up gradually, with the patient and family informed at every step, reducing difficult end of life discussions to relatives who may not have anticipated this outcome.

If it became routine to identify patients who were suitable for the AMBER care bundle, there could be a significant reduction in A&E readmissions as discussions could start in A&E, then progress to advanced plans being made on the wards (e.g. community DNARs and readmission to community hospitals) as well as recognising patient wishes to die at home[2] which are often unknown and not documented. Additionally, more timely conversations and proactive planning will improve patient satisfaction and family's experience of the end of life journey.

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INITIAL CLINICAL FINDINGS OF PATIENTS DIAGNOSED POST-OPERATIVELY WITH ACUTE

APPENDICITIS AT SOUTHERN PUERTO RICO HOSPITALS' EMERGENCY DEPARTMENTS

Carlos Garcia-gubern (1), Mariana Rodriguez-galliano (1), Yohanis O'neill (2), Lissandra Colon-rolon (1), Carene Oliveras (1), Ramon Cruz-rivera (1), Jorge Gutierrez-irrizary (1), Julio Peguero (3), Francisco Rivera-pedrogo (3), Guillermo Bolanos (3)

1. Emergency department, Saint Luke's Episcopal Hospital, Ponce, Puerto Rico

2. Fourth year medical student, Ponce School of Medicine, Ponce, Puerto Rico

3. Surgery, Saint Luke's Episcopal Hospital, Ponce, Puerto Rico

Corresponding author: Mirgalliano@yahoo.com

Keywords: appendicitis, anorexia, abdominal pain

At the Emergency department, life-threatening conditions must be excluded to prevent deadly complications. A common life-threatening abdominal condition is acute appendicitis. Associated symptoms of anorexia, nausea, vomits, and fever are common. It was our main objective to compare the presenting signs and symptoms of patients with acute appendicitis in Southern Puerto Rico's Hispanic population with those found in mayor textbooks. The method consisted of retrieving the initial signs and symptoms, as well as laboratory and radiographic data, from medical records of patients with a pathologic exam positive for acute appendicitis in several Southern Puerto Rico hospitals during years 2008-2010. This data was then compared with that found in mayor textbooks. Of the 1540 patients with confirmed appendicitis, 18% reported anorexia, as compared to 70-100% described in the literature. This may represent a significantly lower proportion of patients with confirmed appendicitis that also presented with anorexia. Based on our study, the absence of anorexia in patients with abdominal pain must not rule out the diagnosis of acute appendicitis.

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EFFECTIVE CAUSES EARLY TREATMENT OF ACUTE CORONARY SYNDROME IN SHIRAZ

Samira Esfandyari (1), Mohammad Kalantari Meibodi (2)

1. pediatric ward, student reasearch committe shiraz medical science ,shiraz, shiraz, Iran, Islamic Republic of

2. emergency medicin, shiraz medical university, shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: coronary, treatment, efective

Intruduction:cardiovascular incident are the most common cause of deaths in the whole world ,in this case MI is the most life threatening occurrence which is mostly caused by

plaque rupture or erosion with superimposed non occlusive thrombus ,so early treatment with antithrombotic agents plays an important role in reducing the number of deaths caused by MI.

Material & Methods:This study is an interpretive-descriptive in a form of cross sectional study ,is carried out on 110 patients admitted to EMAM HOSSEIN emergency department in the year 1386.The data were obtained through checklists ,were filled by patients families or the emergency staffs .To compare the average and results T-Student test and variant analysis is us.

Results: In 110 case 31 case were female ,79 case were male ,the mean time was 66/39 minute and was 73/74 minute for female patient ,63/5 minute for male patient ,in addition 49/92 minute in morning shift ,69/78 minute in the after noon shift and 72/68 minute in the night shift , which has significant analytical diversity.

Conclusion:This mean time called Door To Needle time in valid scientific leagues in the whole world is just 30 minute .In comparison with our study ,it is obviously 2 times faster and also is more in female than males and in the afternoon and night more than morning shift. Different variants like emergency staffs , physicians ,patient factors ,environmental-physical factors can cause this difference and some other factors can cause this difference which should be closely discussed and followed to offer the clues.

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PROBABILITY OF INCREASING TRAUMATIC ACCIDENTS FOR DRIVES OF MOTORIZED

Samira Esfandyari (1), Mohammad Kalantari Meibodi (2)

1. pediatric ward, student reasearch committe shiraz medical science ,shiraz, shiraz, Iran, Islamic Republic of
2. emergency medicin, shiraz medical university, shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: adict, accident, driver

Background:Because, drivers of Motorcycles and inter-civil means comprise majority of applicants to Trauma emergencies in hospitals, so it is important to consider conditions of Narcotics abuse in increasing probable hard accidents caused by decreasing reflex response of the body and awareness status.

In these research, accomplished a foresighted consideration in this field over 100 patients injured on year 2007 from month July to last month of Oct. and hospitalized in Imam Hossein hospital, emergency part in east of Tehran because of bone fracture or dippers lacerassion of skin or dislocation of organs.

Methods:In this research, we considered 100 patients drives Of motorized went to Traumatic emergency of Imam Hossein Hospital on year 2007 from beginning of Month July to the middle of Month Oct. hospitalized because of

bone fracture or vast laceration of skin or dislocation of organs, they disregard to sex, age and vehicle type. Stabilized first vital signs and then we get a history for using narcotics for the patient or his/her companions, and we get urinary sampling and send the kit to the lab.

It is mentioned that these actions accomplished by the consent of the patient and his/her companions and we convinced them that it is important to determine the type and rate of prescribed tranquilizer by the practitioner..in this time we considered 109 patients nondrives motorized with non traumatic problem(for example infectious disease,surgery,chest pain,cerebro vascular accident,psychology,gynecology)went to internis emergency of emam hossien hospital

Results:

Final findings showed that these 100 patients including 19 women, none of them have any narcotics abuse, neither from their history nor from their lab kits, but from 81 men, only 35 or 43% were healthy from history and lab kit consideration while 39 people of them, 48%, have narcotics abuse from history or laboratory consideration. .

Conclusion:

It is necessary for practitioners working at emergencies of hospitals in Trauma part to prescribe tranquilizers in higher dosages and it is necessary to do cultural acts for reducing Narcotics abuse by health care part.

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A NEW AND RAPID METHOD FOR EPISTAXIS TREATMENT USING LOCAL INJECTABLE FORM OF TRANEXAMIC ACID: A RANDOMIZED CONTROLLED CLINICAL TRIAL

Alireza Ala (1), Sima Dibazar (2), Payman Moharamzadeh (3), Mahdi Momeni (4), Mahboub Pouraghaei (5), Morteza Saeedi (6), Laya Sharif Tehrani (7), Ali Taghizadieh (5), Reza Zahed (8), Ehsan Mohammadzadeh Abachi (9)

1. Emergency department, Tabriz University of Medical Sciences, Imam Reza hospital, Tehran, Iran, Islamic Republic of
2. Emergency medicine, Tabriz University of Medical Sciences, Imam Reza Hospital, Tabriz, Iran, Islamic Republic of
3. Emergency department, Tabriz University of Medical Sciences, Imam Reza Hospital, Tehran, Iran, Islamic Republic of
4. Emergency department, Tehran University of Medical Science, Shariati Hospital, Tehran, Iran, Islamic Republic of
5. Emergency department, Tabriz University of Medical Sciences, Imam Reza Hospital, Tabriz, Iran, Islamic Republic of
6. Emergency department, Tehran University of Medical Sciences, Shariati Hospital, Tehran, Iran, Islamic Republic of
7. faculty of medicine, Tehran Azad University faculty of Medicine, Tehran, Iran, Islamic Republic of
8. Emergency medicine, Tehran University of Medical Sciences, Imam Khomeini Hospital, Tehran, Iran, Islamic Republic of
9. Emergency Department, Tabriz University of Medical Sciences, Imam Reza Hospital, Tabriz, Iran, Islamic Republic of

Corresponding author: m_saeedi@tums.ac.ir

Keywords: Epistaxis, tranexamic acid, treatment

Abstract

Study Objective—Epistaxis is a common problem in the emergency department (ED). Sixty percent of people experience it at least once in their life. There are different kinds of treatment for epistaxis. This study intended to evaluate the use of injectable form of tranexamic acid versus anterior nasal packing with pledgets coated with tetracycline ointment.

Methods—Local application of injectable form of tranexamic acid (500 mg in 5 ml) was compared with anterior nasal packing in 224 patients with anterior epistaxis referred to an ED in a randomized, clinical trial. The time needed to arrest initial bleeding, hours needed to stay in hospital, any rebleeding during 24 hours and one week later recorded, and finally the patient satisfaction rated by a 0-10 scale.

Results— Within 10 min of treatment, bleedings were arrested in 70.9% of the patients in the tranexamic acid group, compared to 31.2% in the anterior nasal packing group (odds ratio 2.27, 95% CI 1.68-3.06, $p < 0.001$). In addition, 95.4% in the tranexamic acid group were discharged in ≤ 2 hours vs. 7.3% in the anterior nasal packing group ($p < 0.001$). Rebleeding was reported in 4.5% and 13.3% of patients during first 24 hours patients in the tranexamic acid and the anterior nasal packing groups, respectively ($p = 0.021$). Satisfaction rate was higher in the tranexamic acid compared to the anterior nasal packing group (8.5 ± 1.7 vs. 4.4 ± 1.8 , $p < 0.001$).

Conclusions— Local application of injectable form of tranexamic acid was better than anterior nasal packing in the initial treatment of idiopathic anterior epistaxis.

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INFLATABLE NASAL TAMPONS ARE LESS PAINFUL THAN DRY HYDROPHILIC NASAL TAMPONS

Charlotte Mackaij (1)

1. Emergency department, St. Antonius hospital, Nieuwegein, Netherlands

Corresponding author: c.mackaij@antoniuziekenhuis.nl

Keywords: Inflatable, dry hydrophilic, nasal tampons

Clinical Scenario

A 45-year-old male presents to the emergency department with active epistaxis. It is determined he will require nasal packing. You have a choice of using a moistened, gel-coated, balloon inflated nasal tampon or a dry hydrophilic nasal tampon, and wonder which is less painful on insertion and removal?

Three Part Question

In [adult patients with active epistaxis presenting to the emergency department], are [moistened, gel-coated, balloon inflated nasal tampons or dry hydrophilic nasal tampons] [less painful on insertion and removal?]

Literature Search

MEDLINE 1950–2012 November Week 2 and EMBASE 19809–2012 Week 46

(exp epistaxis/OR epistaxis.mp. OR nosebleed.mp.) AND (exp tampons, surgical/OR exp tampons/OR tampon\$.mp. OR nasal pack\$.mp. OR rapid rhino.mp. OR merocel.mp. OR gelfoam.mp. OR surgicel.mp. OR rocket rhino.mp.) AND (exp pain/OR exp facial pain/ OR pain\$.mp.). Cochrane: (epistaxis OR nosebleed) AND (tampon* OR nasal pack* OR merocel OR rapid rhino OR rocket rhino OR surgical OR gelfoam).

Results

Twenty-nine papers were identified in MEDLINE, 46 in EMBASE and 46 in the Cochrane Library. Of these 4 were relevant to the three part question

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Comments

The available evidence clearly suggests that the Rapid Rhino nasal tampon (which is gel coated and balloon inflated) causes less pain on insertion and removal than the dry hydrophilic alternatives. In the randomised controlled trials identified (table), there was no difference in effectiveness between these two approaches. However, it is important to acknowledge that, in the absence of power calculations for the outcomes of haemostasis or rebleeding rates in any of the three trials, these analyses may have been underpowered to detect a clinically significant difference.

Clinical Bottom Line

A moistened, gel coated, balloon inflated nasal tampon is less painful than a dry hydrophilic nasal tampon in controlling active epistaxis in adults. The available evidence suggests that both approaches are equally effective although these analyses may have been underpowered to detect a difference.

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RISE OF THE CENTURION: EMERGENCY PATIENTS OVER 100 YEARS OLD.

Paul Jenkins (1), Laura Burring (2), David Alao (2), Jason Smith (2,3)

1. Peninsula College of Medicine and Dentistry, Plymouth, United Kingdom
2. Emergency Department, Derriford Hospital, Plymouth, United Kingdom
3. Academic Department of Military Emergency Medicine, Royal Centre for Defence Medicine (Research & Academia), Birmingham, United Kingdom

Corresponding author: jasonsmith@doctors.org.uk

Keywords: centenarian, elderly care, geriatric emergencies

Introduction

It is well recognised that the UK population is aging. This is expected to increase pressures on an already overstretched NHS. Attributable to improved healthcare, housing and nutrition, the past 30 years has seen a fivefold increase in the number of centenarians from 2,500 in 1980 to 12,640 in 2010. It is predicted that by 2040 this figure may exceed 160,000. Whilst a small percentage of the total departmental flow, this population often command high levels of care and high admission rates with up to half of all admissions attributable to the elderly.

The aim of this study was to evaluate the increase in centenarian presentations to the Emergency Department in Plymouth, with the hope of better understanding this population and in turn planning for their future emergency needs.

Methods

This two part study was conducted in the Emergency Department (ED) of Derriford Hospital, the largest teaching hospital in the South West of England. The first part was a retrospective database review of the last ten years using Emergency Department Information System (EDIS). Patients aged 100yrs and over were identified and data collated relating to absolute numbers and proportion of total attendances. The second part was a retrospective chart review of centenarians presenting during 2012, collating data relating to the age, presenting complaint, domestic history, mode of presentation to the ED, investigation resource use, admission rate and final diagnosis.

Results

During the period 2003-2012, a total of 415 patients aged 100 years or older presented to the Emergency Department at Derriford Hospital, Plymouth, rising from 17 in 2003 to a peak of 69 in 2012.

During 2012, there were 69 centenarian attendances, comprising 55 individual patients. Ten of these attended more than once, with two attending three times and one patient having four attendances. 68 attendances (99%) were transported to hospital by ambulance, with only one self-presentation.

30 patients (43%) were recorded as living in their own home or with family, with five (7%) in sheltered accommodation, 28 (41%) in residential care, and three (4%) living in a nursing home.

The most common presentation was following a fall or episode of collapse, accounting for 39 (57%) attendances. Seven (10%) attendances were with shortness of breath, and six (9%) with acute confusional state.

In terms of investigation resource used, 52 (75%) patients had plain X-rays (most commonly chest X-ray), 48 (70%) had blood tests, ten (14%) underwent computed tomography (CT), and nine (13%) required no investigation.

Following assessment and management in the ED, 38 (55%) patients were admitted to hospital, whilst 22 (32%) were discharged home. Six were admitted for a short period of observation to the Clinical Decision Unit and two were transferred to other healthcare providers.

Discussion

There has been a 3.1% annual increase in attendances to Emergency Departments over the last five years. This trend is unlikely to change in the near future with the UK population growing in age as well as a subsequent growth in frailty and chronic conditions. This rise has been reflected in presentations of increasingly elderly patients to Emergency Departments throughout the UK, as borne out by this study.

The resource and demographic challenges that are presented by this looming trend should not be overlooked, and need to be incorporated into future planning in the NHS and emergency services.

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USAGE, INDICATION AND PROGNOSIS OF THE D-DIMER ASSAY IN THE EMERGENCY DEPARTMENT

- Jalal Ashkar (1), P. Pechansky (2), M. Medvedovsky (2)
1. Emergency Department, Hillel Yaffe M.C, HADERA, Israel
 2. The Emergency Department, Hillel Yaffe Medical Center, Hadera, Israel

Corresponding author: ashkar@hy.health.gov.il

Keywords: D-Dimer, Emergency Department, Diagnostic tool

Background: The patient presenting in the Emergency Department who is suspected of having a thrombotic event is a challenge for the emergency physician. One of the blood tests that can help in the diagnostic approach towards patients is the D-Dimer test (the measurement of fibrin degradation products).

Aim: In order to use the D-Dimer test in an appropriate manner, the test's indication & limitations should be reviewed. In addition, it is important to note that the test sometimes shows "false positive" & "false negative" results. The emergency physician should keep this in mind at all times.

Methods: From March 2008 through March 2010 the Hillel Yaffe Medical Center performed 2176 D- Dimer tests , 516 tests were performed in the Emergency Department. Of the 516 tests, 257 results were normal & the remainder showed elevated D-Dimer levels in varying ranges.

Results: A sample 168 patients with high D-Dimer in the Emergency Department showed that 18 of them were discharged & 150 of them were admitted. Only fort-one of these patients were diagnosed with varying thrombotic events. Only 9 of the patients whose D-Dimer levels were at

the maximum (out of 21 patients) were diagnosed of having some kind of thrombotic event. When D-dimer levels were at the maximum, the patients suffered from every serious medical conditions such as sepsis with multi-organ failure & DIC & advanced malignancies. Mortality rates among these patients were especially high.

Conclusion: Our study verified the findings from the medical literature that showed that the use of the D-Dimer test is a valuable diagnostic tool. However, it is important to remember that only the combination of proper medical history taking, physical examination & appropriate use of screening test is critical for the management of patients suspected of having experienced a thrombotic event.

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OUTCOME OF NONSPECIFIC ABDOMINAL PAIN IN PATIENTS DISCHARGED FROM THE EMERGENCY DEPARTMENT

Alireza Baratloo (1), Mahmoud Bardeh (1), Mohammad Mehdi Forouzanfar (1), Behrooz Hashemi (1), Nastaran Sadat Mahdavi (2), Alireza Majidi (1), Maryam Motamedi (1), Farhad Rahmati (1), Saeed Safari (1), Kamran Heidari (3)

1. Emergency Department, Shohadaye Tajrish Hospital, Shahid Beheshti University Of Medical Science, Tehran, Iran, Islamic Republic of

2. Anesthesiology Department, Shahid Beheshti University Of Medical Science, Tehran, Iran, Islamic Republic of

3. Emergency Department, Shohadaye Hafte Tir Hospital, Shahid Beheshti University Of Medical Science, Tehran, Iran, Islamic Republic of

Corresponding author: drfrouzanfar@yahoo.com

Keywords: nonspecific abdominal pain, Etiology, Outcome

Background: Due to the lack of outcome data, specific guidelines on the assessment and management of nonspecific abdominal pain in emergency department did not exist. This study aimed to assess the outcome of patients with non-specific abdominal pain discharged from the emergency department is designed.

Methods: In this study Patients with non-traumatic abdominal pain referred to emergency department of Imam Hussain hospital who were discharged from the emergency department with a diagnosis of non-specific abdominal pain were enrolled. The four-week telephone follow-up of these patients was performed. The resistance or improvement of pain, readmission to hospital and diagnosed with possible subsequent complications and death are evaluated. Chi-square test and logistic regression were used and $p < 0.05$ was assumed as significant.

Results: 247 patients with non-specific abdominal pain (68.4% female) were enrolled. 71 (45%) patients were admitted to the hospital again that finally, cause of pain was diagnosed in 46 patients. Multivariate logistic regression showed that a history of similar pain (OR= 4.04

$p=0.01$), have abnormal findings on abdominal ultrasonography (OR= 8.2 $p=0.005$), abnormal findings on urine analysis (OR= 7.4 $p=0.02$), and abdominal pain persisted for more than 2 days (OR= 4.04 $p=0.02$) are independent factor to identifying the causes of abdominal pain.

Conclusion: The findings of this study depicted that nonspecific abdominal pain will not lead to appropriate recognition, and most of them recover without any complications.

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THE IMPACT OF RESIDENTIAL AGED CARE FACILITIES ON THE EMERGENCY DEPARTMENT

Massimo Zannoni, Manuela Carmen Bonito, Maria Assunta Porretta, Serena Bonomo, Giorgio Ricci

Emergency Department, Azienda Ospedaliera Universitaria Integrata Verona, Verona, Italy

Corresponding author: massimo.zannoni@ospedaleuniverona.it

Keywords: Residential aged care facilities, Emergency department, Aged

Elderly people living in the Residential aged care facilities (RACFs) are one of the frailest group of patients. They are affected by chronic medical problems and are at high risk of developing acute medical complications. Previous studies report high levels of attendance by RACFs residents to the ED but only few of them refer to the European Union situation. We analyzed the impact of acute admissions of patients over 64 years of age from RACFs to the Emergency Department (ED) of Verona (Italy) from January 1st, 2012 to March 15th, 2013. During this period, admissions from RACFs accounted of 516 (2%) patients compared to 25,369 community based patients. Females were more prevalent in the RACFs group (66.5% vs 56%) with more evident prevalence in the older ages when it is examined dividing the patients in each of the age groups of elderly patients: 65-75 yrs: 33.8% vs 48.5%; 76-85 yrs: 64.2 vs 56.1%; >85 yrs: 77% vs 66.8%. Compared with the community based, RACFs patients arrived in the ED mostly by ambulance in all the classes of age (65-75 yrs: 97.4% vs 19.6%; 76-85 yrs: 97% vs 36.8%; >85 yrs: 97.4% vs 59.2%). Accordingly to triage criteria in our ED, RACFs patients presented higher percentage of both critical (red code; R) (65-75 yrs: 9% vs 1.7%; 76-85 yrs: 6.9% vs 1.9%; >85 yrs: 7.3% vs 2.7%) and urgent (yellow code; Y) cases (65-75 yrs: 60.5% vs 38.8%; 76-85 yrs: 61.7% vs 43.6%; >85 yrs: 60.5% vs 48.4%) on ED arrival and the female one was confirmed to be the prevalent gender. Our study examined also treatment time of both the group of patients and RACFs critical patients needed longer treatment time for all the 3 classes of age (65-75 yrs: 373 mins, +95%; 76-85 yrs: 233 mins, +23,9%; >85 yrs: 257 mins, +30.5%). We observed higher admission rates in the RACFs population for all the age groups (65-75 yrs: 44.2% vs 39.4%; 76-85 yrs: 47.6% vs 33%; >85 yrs: 56.4%

vs 43.4%) too. The present study points out that in our ED emergency admissions of RACFs represent a small percentage of aged patients presentations. However they have a high impact on the EMS service as well as on the ED resources and a substantial probability of hospitalisation. This has a paramount relevance when a system is overcrowded as the ED is. On the other hand emergency care of RACFs patients is a complex area of health policy that needs further studies.

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Rez de Jardin poster area

EVALUATION OF A NEW INFORMATION TOOL IN EMERGENCY SERVICE

Anthony Chauvin (1), Anne Pouessel (2), Jennifer Truchot (1), Nicolas Segal (1), Matthieu Resche-rigon (3), Patrick Plaisance (1)

1. Emergency Departement, Hopital Lariboisière, Paris, France

2. Emergency Departement, Saint Louis, Paris, France

3. Bio statistique, Hopital Lariboisière, Paris, France

Corresponding author: anthonychauvin@hotmail.fr

Keywords: Patient Education, Hetero-questionnaire, Screen

Introduction:

The collective patient information became a notional priority in France over the past two years. Emergency services, by their particular mission are unique and complex entities that need to be understood by patient. Our working hypothesis was to improve patient satisfaction through implementation of targeted information screens in different areas of the emergency service. The main objective was to increase integration of information by patients while they were waiting for medical care.

Method and Material:

Cohort study, before/after, prospective, evaluative and single-center. Three information screens were set up at the reception and in the waiting room of an Emergency service. An hetero-questionnaire with five parameters was developed by a working group. Patients were interviewed in real time since they arrived in a box of consultation. Collection of data was made on an electronic case report form. The two periods of investigation took one week. The distribution of responses were compared between groups using Fisher's exact test, for categorical variables and using the Wilcoxon's exact test for quantitative variables. All test were conducted in order bilateral to alpha risk of 5% .

Results:

In total, 267 patients were interviewed, 128 in the first period, 139 in the second. Results of the main questions about the information are similar between the period "before" and the period "after" implementation of screens. Results of the knowledge of the organisation of services are very significant for the information provided by the screens. They highlight the lack of involvement of nurses to inform the patient about his consultation in emergency service.

Discussion:

Items individually highlight the ignorance of patients about their right, ignorance of the organization of an emergency service and the lack of involvement of caregivers. New ways of improvement can be considered quickly.

Conclusion:

This study showed that screens were seen by patients and had a positive impact on their information. These new tools help to improve the care of the patient in the emergency service.

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TURFING AT THE EMERGENCY DEPARTMENT

Ulf Martin Schilling (1)

1. Emergency department, University hospital Linköping, Linköping, Sweden

Corresponding author: ulf.martin.schilling@gmail.com

Keywords: turfing, optimizing, physicians attitude

Background: "Turfing" has been defined as "to find any excuse to refer a patient to a different department or team", commonly to avoid patient admission. Research in the field is limited, and it is rarely spoken about.

Due to the a stringent policy regarding investigations to be performed during non-office hours the author had experienced it sometimes difficult to get radiology done. It was suspected that physicians might chose to present patients with the implication of potential pathology to get investigations performed, i.e. "to optimize" the patient to fill the criteria for the investigation asked for.

In this study, we explored the existence and extent of "turfing" and "optimizing" in Swedish emergency care.

Method: The emergency medicine physicians at a tertiary care university hospital were invited to participate in an anonymous intranet-based survey. Demographic data asked for were the experience of the physician in years, the number of patients treated totally and the enrooting at the hospital in years. Other items asked for were the experienced existence of "turfing" and "optimizing" and the respective percentage of patients subjected to them. Further, the physicians were asked regarding views towards "turfing" and "optimizing" and their assumed influence on the emergency departments waiting times.

Results: 18 emergency physicians with an experience level of 11.5±8.48 years and enrooting of 4.4±3.73 years participated in the study (62% response rate). The majority of the physicians had treated more than 5000 patients. All physicians confirmed the existence of "turfing", and it was estimated that 17.34±13.08% of all patients were affected by it (2-50%). 17/18 physicians felt themselves forced to "optimize" patients to get investigations performed, and estimated that this affected 23.23±22.97% of their patients (5-80%). 12/18 physicians regarded "turfing" and "optimizing" to be unsafe and 17/18 physicians confirmed that "turfing" and "optimizing" influenced waiting times at the emergency department.

Conclusion: "Turfig" and "optimizing" seem to be a major problem for Swedish emergency physicians affecting approximately one in 5 emergency patients. Waiting time at the ED is regarded by the physicians to be affected by "turfig" and "optimizing".

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EVALUATION OF TEACHING LEARNING PROCESS IN MANEUVERS OF CARDIOPULMONARY RESUSCITATION: UNDERGRADUATE HEALTH STUDENTS

Ana Paula Boaventura (1), Ana Maria Kazue Miyadahira (2)

1. Faculty of Nursing, Estate University of Campinas - UNICAMP, Campinas, Brazil

2. Nursing School, University of São Paulo, São Paulo, Brazil

Corresponding author: anaboa@fcm.unicamp.br

Keywords: Cardiopulmonary resuscitation, Study and teaching, Automated External Defibrillation

In situations of CPR is desirable for individuals to be rescued by a multidisciplinary team prepared for a fast and efficient service, which possesses scientific knowledge and technical skills to perform the required actions, as well as the appropriate structure of materials and equipment. The effective installation and use of automated external defibrillation in places of great movement of people are being encouraged worldwide to achieve the goal of minimizing the time between recognition of cardiac arrest and defibrillation successfully. The training of CPR maneuvers should be facing the theoretical knowledge, practical skills and attitudes of professionals. All content should be dealt with within the context of the practical reality of the participants to facilitate their learning and acquisition of knowledge. The practical assessment must be based on minimum criteria related to motor skills and maneuvers performed correctly in sequence and safely. In any learning environment should seek improvement concepts and methodologies in order to provide integral to the educational process proper assimilation of what he is taught, organizing the learning process in order to facilitate the acquisition of Knowledge. This is a exploratory study aiming to identify the skill (practice) and knowledge (theoretical) of the students in health undergraduate students in a private university in the state of São Paulo, before and after their submitted to the course / training. Data collection was divided into two stages as follows: 1st Step - Evaluation of knowledge practical and theoretical and course with prior practical demonstration of CPR maneuvers using the AED, 2nd Step - training and theory/practice evaluation individual, using laboratory practices with the manikin CPR and AED. 173 students were included aged 17 to 23 years, 151 (87.3 %) were female; the skill evaluation in the 1st Step, the maximum score of 91 points was 69 (39.9 %) and 104 students (60.1

%) were not scored in the 2nd Step, a maximum score of 260 points was obtained for 101 (58.4 %) students. The Knowledge evaluation, the maximum score was 5.75 points in the 1st Step and a minimum score of 1.0 in the 2nd Step, the maximum score was 10.0 points in seven (4.0 %) students, no students scored less than 7.5 points. Regarding skill evaluation (practice) of the 28 items before (1st step) and after (2nd step) their submitted to the course / training, identified the improvement (score) was statistically significant ($p=0,0001$) in the frequency of correct responses in all items. That the performance - was considered good performance (90-100%) of correct answers in the skill evaluation (practice) in 2st step on all items except two items of content "Initial evaluation and responsiveness" and "Handling the DEA ". Regarding knowledge evaluation (theoretical): the 40 questions instrument before (1st step) and after (2nd step) their submitted to the course / training, identified the improvement (score) was statistically significant ($p=0,0001$) in the frequency of correct responses in all items. The performance there was a good performance (90-100%) of correct answers in the knowledge evaluation (theoretical) in 2nd step, in all contents, except for 13 issues of content: "Initial evaluation and responsiveness", "Opening airway and breathing maneuvers "and" Handling the DEA ". The comparison of SKILL (practice) and KNOWLEDGE (theoretical) the performance was improved statistically significant ($p=0,0001$) before (1st Step) and after (2nd Step) on all items and issues, both in skill evaluation (practice) and in knowledge evaluation (theoretical). Of the 28 items, 26 achieved a good performance (90-100%) of correct answers regarding skill evaluation (practice) and 27 achieved a good performance in the knowledge evaluation (theoretical). There was no statistically significant correlation between the number of times the training, the time used for training and observation with the scores, in the 2nd Step in evaluation of students KNOWLEDGE (theoretical) and SKILL (practice) ($p = 0.0001$). As for training the average observation time was 78.3 minutes and the workout time was 117.1 minutes. We conclude that both the skill and knowledge in significant improvement in student performance. Forming the undergraduate health students in the health field with knowledge theoretical and practical CPR is critical to better cope with cardiac arrest in developing their professional activities.

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PROGNOSTIC VALUE OF COMBINED MEASURES OF WHITE TO GRAY MATTER RATIO AND NEURON SPECIFIC ENOLASE IN COMATOSE CARDIAC ARREST SURVIVORS TREATED WITH THERAPEUTIC HYPOTHERMIA

Kyungwoon Jeung (1), Byungkook Lee (1), Donghun Lee (1)

1. Emergency department, Chonnam National University Hospital, Gwangju, Korea, (South) Republic of

Corresponding author: bbukkuk@hanmail.net

Keywords: cardiac arrest, prognosis, therapeutic hypothermia

Aim of the study: The prognostic performance of parameters in comatose cardiac arrest survivors was confounded by the use of therapeutic hypothermia (TH) on its own. The aim of the study was to analyse the prognostic performance of the combined method using neuron specific enolase (NSE) with gray to white matter ratio (GWR) on brain computed tomography (CT).

Methods: A retrospective cohort of comatose adult (≥ 16 yrs) cardiac arrest survivors treated with TH at a single centre between January 2008 and December 2012 was studied. The Hounsfield unit was measured in the caudate nucleus, the putamen, the posterior limb of the internal capsule, and the corpus callosum. The NSE level was measured at 0 h, 24 h, and 48 h after ROSC. The prognostic performance of GWR and NSE, and the combination of GWR and NSE were analysed using receiver operating characteristics (ROC). The primary outcome was the dichotomized Cerebral Performance Categories scale (CPC) as either good (CPC1 and CPC2) or poor (CPC 3 to 5).

Results: The Hounsfield unit of gray matters, GWR, and NSE at three different time points significantly differed between a good neurologic outcome and a poor neurologic outcome. The area under curve (AUC) of GWR (Putamen/Corpus callosum) was 0.864 and the cut-off value was 1.17 for poor neurologic outcome (sensitivity/specificity, 52.9%/100%). The AUC of NSE at 48 h after ROSC was 0.895 and the cut-off value was 52.7 ng/ml (sensitivity/specificity, 60.2%/100%). In an analysis of 119 patients undergoing both the brain CT and NSE at 48 h after ROSC, the AUC of GWR, NSE, and combined method showed 0.743(95% CI, 0.655-0.819), 0.814(95% CI, 0.733-0.880), and 0.893(95% CI, 0.823-0.942), respectively. The combined method showed a significantly higher value of AUC and sensitivity.

Conclusion: The combined method of GWR and NSE level for prognostication of comatose cardiac arrest survivors treated with TH showed significantly improved prognostic performance compared to a single method of GWR or NSE level.

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NURSE DOCUMENTATION IN DETERIORATING PATIENTS PRIOR TO CARDIAC ARREST IN A MAJOR SWEDISH UNIVERSITY HOSPITAL.

Lars Aas (1), Therese Djärv (1), Maria Ouchterlony (1)
1. Emergency Department, Karolinska University Hospital, Stockholm, Sweden

Corresponding author: larsaas@hotmail.com

Keywords: In-hospital cardiac arrest, Abnormal vital signs, Nurse management

Background: Patient safety and nursing documentation are two vital aspects of patient care and hence an important method towards detecting abnormal vital signs and deteriorating patients. Nurses have sometimes demonstrated a weakness towards awareness of abnormal vital signs in patients. Even with great efforts to improve nurses' identification of early warning signals, patients continue to deteriorate on general wards. Studies have found that a majority of patients admitted into hospitals shows one or more abnormal vital signs. It is therefore important to introduce a culture that involves the detection of early recognition of patients that shows acute deterioration. If the patient has an abnormal vital signs, the nurse must decide whether an appropriate nursing prevention is enough or to summon medical support before the patient deteriorates further and possibly suffers a cardiac arrest. **Methods:** All cardiac arrests during 2007-2011 was reviewed (n = 720). 68 (9,5%) patients survived at least 30 days, of them, 20 (29%) had documented abnormal vital signs or nurse worries and defined as cases. Of 652 non-survivors, two controls were randomly drawn for each case and matched for age, sex and number of diseases. Pearson's chi test and Fishers exact test was used to assess significance on the level of 0.05 in differences between cases and controls. **Results:** Of 20 survivors with preceding abnormal vital signs prior to cardiac arrest (CA), 14 patients (70%) had documented worries or action taken by a nurse compared to 23 patients (58%) in the control group. **Conclusion:** This registry-based single hospital case-control study has demonstrated a great negligence towards documenting respiratory rate in journal notes regardless of patients surviving CA for more than 30 days or patients dying within 30 days after in-hospital CA. Furthermore, the study found an equal contact with patients in case and control group during the last 24 hours prior to in-hospital CA. Within these contacts, the case group had notes of worry in 70% of cases compared to 58% in the control group. These factors indicates that nurses should increase their vigilance in documenting vital signs in an effort to improve 30 days survival of in-hospital CA and when in contact with patients, be alert towards deteriorating patients in an effort to increase patient safety and avoid in-hospital CA.

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THE RATE OF METRONOME INFLUENCES THE QUALITY OF CHEST COMPRESSIONS PERFORMED BY UNTRAINED BYSTANDERS DURING COMPRESSION-ONLY CARDIOPULMONARY RESUSCITATION.

Chan Woong Kim (1), Dong Hoon Lee (1), Sung Eun Kim (1)

1. Emergency Medicine, College of Medicine, Chung-Ang University, Seoul, Korea, (South) Republic of

Corresponding author: emdhlee@cau.ac.kr

Keywords: Metronome, Hand-only CPR, Bystander

Introduction

Bystander cardiopulmonary resuscitation (CPR) can significantly improve survival rates from cardiac arrest. However, only a limited number of people have received CPR training. The 2010 guidelines for CPR recommended that emergency medical system (EMS) dispatchers instruct untrained bystanders in compression-only CPR, with an emphasis on "push hard and fast". Since EMS dispatcher assisted CPR is conducted by telephone, real-time feedback is impossible and the quality of chest compression could not be monitored.

Metronome guidance is a cost-effective and feasible method to improve the quality of chest compression in hand-only CPR. There was no problem that the rate of audio-guidance for chest compression was 100/min in 2005 guideline. However, the 2010 International Liaison Committee on Resuscitation guideline stated the rate to be at least 100/min and the guideline of European Resuscitation Council recommended the rate of chest compression to be not over 120/min. Currently there is no standard guideline that the proper rate of metronome is effective for bystander CPR. The rate of metronome for audio-guidance should be reassessed to become effective in the updated guideline.

Method

78 people who had not been trained for CPR were enrolled in this study. We explained the compression only CPR and emphasized high quality CPR as "It is important to push victim's chest hard and fast. Push the centre of victim's chest and the depth of compression should be more than 2 inches. The rate of chest compression was more than 100/min but do not over 120/min. And don't stop the chest compression." These participants were randomly divided in three groups assigned and they had no idea of study design and they couldn't know their own group. In three closed rooms, the participants of each group simulated the hands-only CPR with mannequin and metronome. The group 1 was informed that the rate of metronome was 120/min and was to compress victim's chest as 100/min to 120/min, in group 2 the rate of metronome was 110/min, and in group 3 the rate of metronome was 100/min. The simulated resuscitation with mannequin was conducted for 2 minutes. During 2-minute simulated CPR, we record the mean depth and rate.

Result

There was no statistical difference in the sex and age between three groups. The mean depth of chest compression was 36.93 ± 10.38 mm in group 1, 36.42 ± 10.50 mm in group 2, and 44.74 ± 10.09 mm in group 3. There was no statistical difference between groups in the mean depth of chest compressions. The mean rate of chest compression was 113.44 ± 12.35 /min in group 1, 109.37 ± 2.73 /min in group 2, and 128.11 ± 16.22 /min in group 3. There was no statistically difference between group 1 and 2, but the mean rate of chest compression in group 3 was higher than group 2 and 1. The proportion of compression rate between 100 to 120 /min was 100.00 % (24/24) in group 2, 70.00 % (19/24) in group 1, and 25.93 % (7/27) in group 3.

Conclusion

The rate of chest compression was related with the quality of CPR because the number of chest compressions was related to the return of spontaneous circulation and neurologically intact survival. The current guideline was changed to 'at least 100/min' in 2010 from 'about 100/min' in 2005. In compression-only CPR the rate of chest compression is same to the number of chest compression. It is important to maintain the proper rate of compression for high quality CPR. Therefore lay rescuers and healthcare providers should perform the chest compressions for adults at a rate of at least 100 compressions per minute. Despite the fact that the maintenance of rate is important, it is hard to perform chest compressions at a proper rate to lay person and health care providers.

The metronome was a useful method in maintaining the rate of compression for untrained bystanders. Due to changed 2010 guideline it is need to change the rate of audio-guidance for CPR. Especially when audio-guidance was used in hands-only CPR the rate of chest compression recommended in 2010 guideline could be influential in the quality of CPR. Untrained bystanders could not perform chest compression as the guideline recommendations when a metronome guided the minimum and maximum speed of guideline. Therefore the proper speed of audio-guidance should be reassessed to maintain effective rate of chest compression.

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IN-HOSPITAL CARDIAC ARREST: EFFECT OF THE PERFORMANCE OF CODE-BLUE TEAM ON PATIENT SURVIVAL

Han Joo Choi (1)

1. Emergency Medicine, Dankook University Hospital, Cheonan, Korea, (South) Republic of

Corresponding author: iqtus@hanmail.net

Keywords: Heart Arrest, Cardiopulmonary Resuscitation, Code Team

Purpose

We sought to evaluate the effect of the performance of Code-Blue Team on patient survival with in-hospital cardiac arrest.

Methods

This study was performed as a retrospective analysis of a detailed cardiac arrest registry containing prospectively collected data during 2 years (from January 2010 to December 2011). Code-Blue Team was organized for the resuscitation of patients with in-hospital cardiac arrest. At the end of 2010, Code-Blue team members in our hospital were trained according to the 2010 American Heart Association guidelines for cardiac arrest. Activation system for Code-Blue Team and medical record for cardiac arrest were improved through electronic ways simultaneously. We compared the performance data of Code-Blue Team

and patient survival in 2011 (Education group) to in 2010 (Pre-education group).

Results

Of the 531 (289 cases in 2010, Pre-Education group) cases included in the study, sex, age, initial cardiac rhythm, patients were witnessed, team activation through broadcasting and the attempt of defibrillation did not differed between Education and Pre-Education groups. Time to arrest recognition (9.9±8.2 vs 11.0±8.1 minute), time to scene arrival (4.1±2.6 vs 12.4±10.3 minute), recognition to chest compression (15.6±7.2 vs 20.6±10.6 minute), and arrest to first epinephrine (12.4±2.4 vs 17.1±7.2, minutes) were much shorter in Education group than in Pre-education group (all p<0.05). Survival rate of Education group (9.09%, 22 cases) was higher than Pre-education group (8.33%, 24 cases), but it was not significant.

Conclusion

Through the education for team members and the improvement in system for cardiac arrest management, the Code-Blue team showed a better performance. The survival rate of in-hospital cardiac arrest was not influenced by the performance of Code-Blue team.

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“PUSH HARD AND FAST” VOICE PROMPT FROM AED CAN IMPROVE QUALITY OF CHEST COMPRESSION PERFORMED BY LAY PEOPLE

Kyoung Chul Cha (1), Yong Sung Cha (1), Sung Oh Hwang (1), Woo Jin Jung (1), Oh Hyun Kim (1), Tae Hoon Kim (1), Yong Won Kim (1), Jung Min Yoon (1)

1. Emergency departement, Wonju College of Medicine, Yonsei University, Wonju, Korea, (South) Republic of

Corresponding author: chakcem@gmail.com

Keywords: Cardiac arrest, Cardiopulmonary resuscitation, Automated external defibrillator

Purpose: We conducted this study to evaluate whether simple voice prompt, “push hard and fast” could improve quality of chest compression performed by lay people.

Method: Two hundred forty two non-medical college students were recruited in this study. They were randomly divided two groups-metronome prompt AED (M) group and metronome with intermittent “push hard and fast” voice prompt AED (V) group and performed “hands- only CPR” during 2 cycles of CPR. “Push hard and fast” voice was prompted every 10 seconds. The rate of metronome was fixed to 100/min in two groups. We measured compression depth, compression rate and total compression frequency using Resusci Anne®SkillReporter™ (Laerdal, Korea).

Results: Among 242 volunteers, 208 students with no experience of CPR education were enrolled. Female was 120 (57.7%) and mean age was 21±2 years old. The compression depth was deeper in V group (40.0±12mm) than M group (35.9±13mm) (p=0.02). The mean rate of

chest compression was faster in V group (98±20cpm) than M group (88±31cpm) (p=0.07) (*cpm: compression per minute). Total frequency of chest compression during 2-cycle CPR was also higher in V group (392±80) than M group (341±117) (p<0.001).

Conclusion: Simple voice prompt “push hard and fast” can improve quality of layperson’s chest compression

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THORACIC AND ABDOMINAL COMPLICATIONS OF EXTERNAL CARDIAC COMPRESSIONS

Puiu Popescu, Timea Kastal, Man Ancuta

1. Emergency Department, Mures County Emergency Clinical Hospital, Targu Mures, Romania

Corresponding author: kastaltimi@yahoo.com

Keywords: resuscitation, chest compression, laceration

Closed-chest compressions can lead to fractures of the sternum or the ribs, separation of the ribs from the sternum, pulmonary contusion, pneumothorax, myocardial contusion, hemorrhagic pericardial effusions, splenic laceration, or liver laceration. In order to optimize blood flow excellent chest compression technique is critical. Attention to the technique of chest compression, may help to minimize these complications but cannot totally prevent them. We describe a case of abdominal and thoracic organ lacerations and multiple rib fractures from external chest compression discovered during autopsy.

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TESTING CARDIOPULMONARY RESUSCITATION GUIDELINES IN VITROÆ. THE ROLE OF SIMULATION TO ASSESS THE FEASIBILITY OF TRACHEAL INTUBATION WITHOUT INTERRUPTION OF CHEST COMPRESSIONS

Manuel Fernandez-sanmartin (1), Antonio Iglesias (2), Sanchez Luis (3), Jose Moure-gonzalez (1), Antonio Rodriguez-nunez (1)

1. Pediatrics. Intensive Care Unit, Clinical University Hospital, santiago, Spain

2. Director, Public Emergency Care System 061 Galicia - Spain, santiago, Spain

3. Teaching and Research, Public Emergency Care System 061 Galicia - Spain, santiago, Spain

Corresponding author: luis.sanchez.santos@sergas.es

Keywords: patient's safety, testing guidelines, tracheal intubation

Introduction

Quick and safe airway management is essential during pediatric cardiopulmonary resuscitation (CPR); tracheal intubation (TI) is the definitive method for airway control during advanced CPR. Current guidelines recommend performing chest compressions (CC) as continuously as possible, avoiding interruptions, even during other resuscitation procedures. However, few data support the ability to simultaneously perform these procedures in a limited time.

Methods

A randomized crossover trial was performed to test the ability of pediatric residents to TI in manikins by means of standard direct laryngoscopy during continuous CC. The Megacode Baby and Junior[®] trainer manikins (Laerdal) were chosen. Twenty-three residents who were trained to intubate child and infant manikins were eligible. They were asked to perform TI in manikins assisted by standard laryngoscopes (Miller and Macintosh) according to age, while a colleague delivered CCC. Chest compressions were performed by a pediatrician trained on quality CPR, with the two thumb-encircling hands technique in the infant and the one hand technique in the child manikin. The sequence of manikin intubation was randomized. Primary endpoints were the rate of successful placement of the tube in the trachea and the duration of the TI in seconds. Total intubation time (TTI) was defined as the time since the operator picked up the laryngoscope until the tube was deemed to be correctly positioned (by means of observation of clear thorax rising when insufflation with bag was done). A visual analogue scale (from 0 to 10) was used to know the participants opinion about the difficulty of the procedure.

Results

In the infant scenario, the median (IQR) TTI was 28.2 (20.4-34.4) seconds. Seven of 23 participants required more than 30 seconds to perform TI, two of them requiring more than 45 seconds and one, more than one minute. In the child scenario, the median (IQR) TTI was 20.2 (18.6- 25.1) seconds. In three of 23 cases, the time required was longer than 30 seconds, one of them requiring more than 45 seconds, and another one, more than one minute. Median (IQR) VAS score was 4 (2-6) in the infant scenario and 3 (0-6) in the child scenario.

Conclusions

In the simulated child CPR scenario, most of pediatric residents were able to intubate the trachea during CCC, validating at least *in vitro* the guidelines feasibility. However, in the infant CPR scenario a significant number of participants (7 of 23) failed to achieve TI in less than 30 seconds, arising concerns about the safety of simultaneously performing CCC and TI in infant patients. We suggest that, at least in infants, specific TI training during chest compressions should be made or, alternatively, a brief chest compressions stop (less than 30 seconds) should be considered in order to assure the success of TI and CPR. These results must be confirmed in real patients.

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RAPID INFUSION SYSTEM WITH COLD SALINE COULD BE UTILIZED IN THE INDUCTION OF THERAPEUTIC HYPOTHERMIA.

Yoon Hee Choi (1), Sung Woong Jin (2), Dong Hoon Lee (3)

1. *Emergency Medicine, College of Medicine, Ewha Womans University, Seoul, Korea, (South) Republic of*

2. *Emergency Medicine, Chung-Ang University Hospital, Seoul, Korea, (South) Republic of*

3. *Emergency Medicine, College of Medicine, Chung-Ang University, Seoul, Korea, (South) Republic of*

Corresponding author: emdhlee@cau.ac.kr

Keywords: Therapeutic hypothermia, Cold saline, Rapid infusion system

Introduction

For the induction of therapeutic hypothermia, numerous methods were used. Of these methods, the infusion of cold saline was preferred as the initial method of induction of therapeutic hypothermia due to its convenience, safety, and cost effectiveness.

Theoretically, the infusion of cold saline was a thermodilution of 4°C fluid and body temperature. So in order to induce hypothermia effectively, the temperature of chilled fluid should be maintained as cold as possible until given to patients. Actually, the temperature of cold saline at infusion site was influenced by room temperature, length of infusion line, and the speed of infusion. We thought that the infusion of cold saline using rapid infusion system (RIS) might be effective in the induction of hypothermia. So the efficacy of RIS to maintain the cold energy of fluid was compared to rapid dripping without any other equipment and with conventional pressure bag.

Method

This was a laboratory study in which three different methods were used for delivering refrigerated 0.9% normal saline fluid. The control group was given fluid by just full-dripping without any other equipment. RIS groups used RIS with the pressure maintained at 300 mmHg. Conventional pressure-bag with gauge was inflated to 300 mmHg at the start of the infusion and when the gauge was below 100 mmHg in pressure-bag group.

This study was conducted in a resuscitation room of the emergency department. Each fluid bag of normal saline was stored in the refrigerator (4°C) for at least 24 hours before use. The fluid was connected to a 80-cm-long intravenous (IV) infusion set (1 ml = 20 drops) and hung on an IV pole or

RIS device (height = 172cm). Distal end of the infusion set was connected to a 16-gauge angio-catheter and the height was 65 cm from ground. Two thermo-probes were inserted into a proximal chamber of infusion set and a distal rubber injection port of IV line.

And during fluid runs the temperature data of the fluid was recorded from proximal and distal thermo-probes of infusion set at 1-minute interval. Total infusion time of 1-L fluid bag was obtained. We calculated 'The loss of cold energy (°C/min)' of fluid defined as '(The temperature of proximal thermo-probe - The temperature of distal end thermo-probe) × (the total time of infusion)'. The experiments were conducted 10 times for each group.

Results

Ambient temperature was maintained at $21.0 \pm 1.0^\circ\text{C}$ during the experiment. The initial temperature of proximal infusion line was $4.30 \pm 1.65^\circ\text{C}$ in the control group, $3.78 \pm 1.24^\circ\text{C}$ in the RIS group and $3.96 \pm 0.51^\circ\text{C}$ in the pressure-bag group. There was no statistical difference in the initial temperature of fluid. ($p = 0.706$) The cold saline was run for over 862.00 ± 13.88 seconds in the control group, 295.90 ± 5.13 seconds in the RIS group and 425.50 ± 25.20 seconds in the pressure-bag group.

After run over time, the last fluid temperature at the proximal chamber of infusion line was $7.85 \pm 1.98^\circ\text{C}$ in the control group, $5.00 \pm 1.31^\circ\text{C}$ in the RIS group, and $5.85 \pm 0.74^\circ\text{C}$ in the pressure-bag group. And last temperature of distal end of infusion line was $12.00 \pm 1.33^\circ\text{C}$ in the control group, $8.68 \pm 1.53^\circ\text{C}$ in the RIS group and $9.79 \pm 0.79^\circ\text{C}$ in the pressure-bag group. The mean temperature of distal end close to the IV site was statistically different between groups. ($p < 0.001$)

The loss of cold energy of fluid was calculated by area between grapes of temperature at the proximal chamber and distal end of the IV line. In the control group, cold energy loss was 30.95 ± 3.35 . When RIS and pressure bag were used, the values were 3.87 ± 4.20 and 6.30 ± 0.87 , respectively. ($p < 0.001$)

Conclusion

The infusion of cold saline is a useful method in the induction of therapeutic hypothermia for patients who were resuscitated from cardiac arrest. There were a few studies that considered the more efficient method of delivering chilled saline to patients. Addition to previous studied methods that used insulated fluid bag and IV site, using RIS can be an effective technique in reducing cold energy loss. And the infusion of cold saline by RIS was needed only to replace the pole of fluid to RIS device. Because the pressure of fluid bag was maintained automatically at a constant value, it was a convenient technique when compared to conventional pressure bag that was deflated spontaneously and should be re-inflated repetitively. Therefore cold saline infusion with RIS could be considered in the induction of therapeutic hypothermia.

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ARE THE INTERNATIONAL RECOMMENDATIONS ABOUT THE USE OF ADRENALIN FOR A CARDIAC

ARREST RESPECTED BY THE DOCTORS OF THE PREHOSPITAL EMERGENCY SERVICE TEAMS?

Jean-Claude Bartier (1), Jérôme Guison (1), Thierry Pelaccia (1), Thierry Pottecher (1), Emmanuel Vilbois (2), Jacques Schmitt (2)

1. SAMU 67 / SMUR, CHRU Strasbourg, Strasbourg, France
2. Pôle SAU / SMUR, CHG Mulhouse, France

Corresponding author: schmitt.jacques1@gmail.com

Keywords: Adrenalin, Guidelines, Doctors

The use of adrenalin is codified for the management of a cardiac arrest according to formalized recommendations of experts [1]. Yet it seems that the doctors of the prehospital emergency service teams do not respect these recommendations when we proceed to an empirical review of the medical cases. Therefore we wanted to inform scientifically this report.

Materials and methods

We realized an observational and descriptive study with retrospective data collection consisting in analyzing the intervention cases dealing with a cardiac arrest taken care by the prehospital emergency service teams of Strasbourg in 2011.

Results

95 cases were analyzed on the 256 interventions dealing with a cardiac arrest in 2011. Incomplete cases and situations without specialized resuscitation were excluded. We identified 15 different plans of administration. The most frequent gaps noticed concern the initial bolus, which varies between 1 and 5 mg (1 mg: 33,68 % of cases, 2 mg: 36,84 %, 3 mg: 24,22 %, 5 mg: 5,26 %) and the following dose, which varies between 1 and 3 mg (1 mg: 74,73 %, 2 mg: 18,95 %, 3 mg: 6,32 %). In 31,58 % of the cases, the doctor used increasing doses during the resuscitation.

Discussion

The international scientific literature recommends to administer 1 mg of adrenalin every 3 to 5 minutes, until resumption of a spontaneous cardiac activity [1]. The survival is not improved by the use of higher doses. 74,73 % of cases deviated from the proposed plan. The initial bolus was indeed higher than 1 mg in 66,32 % of the cases. The following administrations corresponded mainly to those recommended, but in a third of the cases, the posology was increased at some point during resuscitation even if it does not increase the survival [1]. Finally, 37,9 % of cases were not able to be analyzed because they were insufficiently filled in, which raises a forensic problem.

Conclusion

A majority of the analyzed cases do not respect the dosage plan of the adrenalin recommended in experts' recommendations. Additional multi-center studies as well as individual interviews with the doctors are necessary to confirm this report and understand these practice gaps.

[1] European Resuscitation Council: Guidelines for resuscitation. Resuscitation 2010: 81;1219-76

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WEIGHING THE BYSTANDERS' PSYCHOLOGICAL BURDEN IN CASE OF DISPATCHER-ASSISTED CARDIOPULMONARY RESUSCITATION.

Mehdi El Fassi (1), Anne-marie Etienne (2), Alexandre Ghuysen (3), Elodie Hirtz (2), Samuel Stipulante (3)

1. Department of Public Health, University of Liège, Liege, Belgium

2. Department of Psychology, University of Liège, Liège, Belgium

3. Department of Public Health, University of Liège, Liège, Belgium

Corresponding author: a.ghuysen@chu.ulg.ac.be

Keywords: phone-CPR, post-traumatic stress disorder, dispatcher

Introduction:

Recent reports suggest that witness presence during cardiopulmonary resuscitation (CPR) may be associated with a significantly lower incidence of post-traumatic stress disorder-related symptoms (PTSD). However, little is known about the psychological burden of bystanders further involved in dispatcher-assisted CPR.

We investigated this psychological impact when using the ALERT algorithm, a simple and effective compression only phone-CPR protocol.

Patients and methods:

We selected the 112 dispatching-centre calls concerning out-of-hospital cardiac arrest from March to June 2012. Audio recordings of calls allowed the identification of bystanders phone CPR attempts, with the exclusion of technical problems or volunteers with prior medical or paramedical training.

Included bystanders were joined by phone contact after a 6 month-delay. Socio-demographic data were collected. The Peri-traumatic Dissociative Experience Questionnaire (PDEQ), the Way of Coping Check List (WCC) and the Impact of Event Scale were fulfilled in order to quantify the weight of the psychological impact of the former episode.

Results:

Out of the 44 eligible cases, 26 declined their participation in the study because lack of time, language constrains or no interest.

Mean age of the participants was 49-year old, with a sex ratio of 8 males and 10 wives.

Mean PDEQ was 18.2 ± 7.17 (10-35), WCC was 67.1 ± 10.1 (51-87) and IES 23.1 ± 19.0 (2-61).

People with high risk PTSD profile were identified, representing 16,67 % of the cohort.

Conclusion:

Participation to phone-CPR attempts may be responsible for psychological stress among bystanders. Dispatchers should be trained to detect high-risk profile bystanders in order to develop strategies to avoid occurrence of PTSD.

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THE EFFICACY AND SAFETY OF PROLONGED THERAPEUTIC HYPOTHERMIA IN ASPHYXIAL CARDIAC ARREST

Kyungwoon Jeung (1), Byungkook Lee (1), Donghun Lee (1)

1. Emergency department, Chonnam National University Hospital, Gwangju, Korea, (South) Republic of

Corresponding author: bbukkuk@hanmail.net

Keywords: cardiac arrest, asphyxia, therapeutic hypothermia

Aim of the study: Targeted temperature management (TTM) aiming at $33 \pm 1^\circ\text{C}$ during 12-24 hours improves the neurologic outcome in ventricular fibrillation cardiac arrest survivors. However, the efficacy of TTM in asphyxial cardiac arrest remains unclear. We hypothesized that TTM aiming at $32 \pm 1^\circ\text{C}$ during 72 hours will be associated with good neurologic outcome and better survival.

Methods: Data on consecutive adult asphyxial cardiac arrest survivors admitted at a single tertiary hospital from January 2008 to December 2012 was retrospectively collected. Patients who underwent TTM aiming at $33 \pm 1^\circ\text{C}$ during 24 hours formed the standard TTM group, while patients who underwent the TTM aiming at $32 \pm 1^\circ\text{C}$ during 72 hours formed the prolonged TTM group. The primary outcome was measured using the Glasgow-Pittsburgh Cerebral Performance Categories (CPC) at 30 days following arrest and dichotomised as either good (CPC1 and CPC2) or poor (CPC 3 to 5). Secondary outcome was measured as mortality at 30 days following arrest and the frequency of adverse events.

Results: One of the 34 patients (2.9%) who underwent prolonged TTM and one of the 42 patients (2.4%) who underwent standard TTM had a good neurologic outcome ($p=1.000$). There was no significant difference of survival over time during 30 days after collapse between two groups ($p=0.964$). Hypotension was the most frequent adverse event and was followed by seizure, hypokalaemia, elevated amylase and hypoglycaemia. The incidence of adverse events was similar in both groups.

Conclusion: Prolonged TTM is not associated with improved neurologic outcome and mortality compared with standard TTM in comatose asphyxial cardiac arrest. Further studies are required to determine the optimal duration and optimal target temperature in asphyxial cardiac arrest.

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A PROTOCOL FOR EARLY IMAGING IN THE EMERGENCY DEPARTMENT FOR OUT OF HOSPITAL CARDIAC ARREST SURVIVORS.

Qadir Adelasoye (1), Jeff Keep (1), James Pallett (1)

1. Emergency Medicine, King's College Hospital NHS Foundation Trust, London, United Kingdom

Corresponding author: jamesrpallett@hotmail.com

Keywords: Cardiac arrest, Imaging, ROSC

Background: Out-of-hospital cardiac arrest (OHCA) is associated with poor survival both in the Emergency Department (ED) and in survival to discharge from hospital. Following return of spontaneous circulation (ROSC) determining the aetiology of the cause of cardiac arrest is critical for improving survival. In order to improve patient pathways following ROSC, a protocol has been developed in our institution for early imaging direct from the ED.

Methods: A retrospective cohort study of patients presenting to the ED over a 3 year period was undertaken. Data was collected on imaging modality and outcome. Children < 18 years and traumatic causes of cardiac arrest were excluded.

Results: A total of 258 patients presented to the ED with OHCA between Jan 2009 and June 2012. 71 achieved a ROSC in the ED (29%). Data up to discharge or death was obtained in all cases. Of the 71 cases with ROSC, 52% (n=37) subsequently died in hospital and 48% (n=34) survived to discharge. 18 patients went for immediate angiography and percutaneous coronary intervention. 10 patients underwent emergency CT pulmonary angiography with 50% (n=5) positive for pulmonary embolism. These all subsequently underwent anti-coagulation with 90% (n=4) surviving to discharge from hospital. 29 patients had immediate CT head. Of these, 6 were abnormal with 5 showing early signs of hypoxic-ischaemic injury. 1 case of spontaneous subarachnoid haemorrhage was identified. None of the patients with initial abnormal CT head findings survived to discharge. Of the remaining 23 CT heads initially normal, 52% (n=12) survived to discharge and 48% (n=11) died in hospital. 2 patients went for immediate CT imaging of the abdomen which revealed cause of cardiac arrest secondary to gastro-intestinal bleeding and metastatic malignancy. 9 survivors were admitted for palliative care therefore no imaging was undertaken.

Conclusion: Favourable figures for ROSC and survival to discharge from hospital following OHCA in this institution are observed. Early imaging in the ED often influences management decisions and the introduction of a protocol for systematic imaging aims to further improve outcomes in this cohort of patients.

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EFFICIENCY OF CARDIOPULMONARY RESUSCITATION IN EMERGENCY MEDICAL SERVICE AND UNIVERSITY HOSPITAL

Anita Kaleja (1), Elina Snucina (2), Indulis Vanags (3)

1. Emergency department, Pauls Stradins Clinical University Hospital, Riga, Latvia

2. Faculty of Continuing Education, Riga Stradins University, Riga, Latvia

3. Dpt of Anaesthesiology and Reanimatology, Pauls Stradins Clinical University Hospital, Riga, Latvia

Corresponding author: anita.kaleja@stradini.lv

Keywords: in-hospital cardiac arrest, out-of-hospital cardiac arrest, return of spontaneous circulation

Introduction. Cardiopulmonary resuscitation (CPR) is a complex of emergency procedures that can provide the necessary minimum of circulation until the return of spontaneous circulation (ROSC) is achieved. Despite new techniques and technology it is not clear whether survival after cardiac arrest have improved. Therefore it is important to analyze the factors, determining the efficiency of the out-of-hospital and in-hospital CPR and look for ways to improve the situation in the future.

Aim of the study was to evaluate survival rate among patients with out-of-hospital cardiac arrest and in-hospital cardiac arrest.

Materials and methods. The study was conducted in State Emergency Ambulance Service of the Republic of Latvia and in the Pauls Stradins Clinical University Hospital during 15 months in 2010/2011. Cardiopulmonary resuscitation was performed according to the ERC Guidelines 2005 and 2010. The emergency ambulance medical service team and the medical staff in hospital were similarly trained and equipped. There were 687 adult patients with a confirmed cardiac arrest and performed CPR included in the retrospective research. 451 patient with out-of-hospital cardiac arrest (OHCA) and 236 patients with in-hospital cardiac arrest (IHCA) were analyzed. 304 patients were excluded from study-trauma patients, oncological patients, who received palliative care, and patients with missing data. The further analysis was conducted on 162 OHCA patients and 221 IHCA patients. All CPR episodes were included for IHCA patients with multiple cardiac arrests. There were cardiac arrest location, the pathogenetic mechanism of the cardiac arrest (ventricular fibrillation/pulseless ventricular tachycardia, pulseless electrical activity, asystole) and survival outcomes analyzed. The obtained results were expressed in percents and compared, using the Pearson's Chi-square test.

Results. Mean age for male was 64 years, for female - 70.5. The most frequent basic diseases were of cardiac origin (46%). The short-term ROSC was achieved among patients with out-of-hospital cardiac arrest (OHCA) in 62 cases and among patients with in-hospital cardiac arrest (IHCA) in 186 cases. Survival to discharge was achieved in 20.3% among patients with OHCA and 15,8% among patients with IHCA. The most commonly used CPR algorithm was pulseless electrical activity/ asystole (72-73%). Short-term ROSC was achieved most frequently by ventricular fibrillation/pulseless ventricular tachycardia (41.3-56%), but the largest number of unsuccessful CPR episodes was observed by pulseless electrical activity/ asystole.

Conclusions. Results of CPR were different among patients with OHCA and IHCA. It should be interpreted in light of potential confounding factors and future studies are needed. We found that return of spontaneous circulation and survival rate are rhythm-specific outcomes. There is a statistically valid difference among ROSC frequency due to shockable and non-shockable rhythms. The ventricular fibrillation/ pulseless ventricular tachycardia are associated with higher survival rate.

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SEEING CPR IN DEPTH: INNOVATIVE CARDIOPULMONARY RESUSCITATION EVALUATION SYSTEM IN AMBULANCE BY KINECT DEPTH CAMERA

Patrick Chow-in Ko (1), Jie-zhi Cheng (2), Wen-huang Cheng (2), Matthew Huei-ming Ma (1)

1. Department of Emergency Medicine, National Taiwan University Hospital, Taipei, Taiwan

2. Research Center for Information Technology Innovation, Academia Sinica, Taipei, Taiwan

Corresponding author: patrick.patko@gmail.com

Keywords: CPR Quality, Kinect Depth Camera, pre-hospital Ambulance

Background and Objective: The quality of pre-hospital ambulance cardiopulmonary resuscitation (CPR) has been questioned to be not good enough to achieve high performance and better patient survival rate in out-of-hospital cardiac arrest (OHCA) studies. To further elucidate the factors leading to inadequate CPR performances, a computerized CPR quality assessment system is introduced in this research. Distinct from previous non-paramedical simulated study (e.g. with RGB cameras), our innovative and pilot system proposed here is based on the installation of kinect depth cameras in ambulance to address privacy and lighting issues. A corresponding computerized CPR motion analysis method is developed to automatically calculate two key clinical variables: "number of chest compressions" and "chest compression rate". The estimated measurements of these variables from our method are compared to manual measurements in depth video clips.

Method: To evaluate the efficacy of the proposed method, six paramedics were invited to perform CPR on a manikin inside an ambulance. Each subject was asked to perform five cycles standard CPR (two-hand) and five cycles simulated mobile CPR (one-hand). The kinect depth camera video clips with our arm tracking results will be practically demonstrated at presentation. We totally have twelve CPR performances recorded with the installed depth camera. The computer-generated measurements of clinical variables: "chest compression rate" and "number of chest compressions", from our methods are compared to manual measurements from an expert. To illustrate the relation between measurements from different sources, we compares the computer measurements to manual ones with the reporting of recalls (R) and precisions (P) of "number of chest compressions", and absolute difference (AD) of "chest compression rate".

Results: The results show that our kinect depth camera computer system may slightly miss to identify a few chest compressions but still have reasonably high recalls (above 90%). The detailed comparison for R, P, and AD of the twelve computer measurements to manual ones will be

showed at presentation. Student t-tests are applied to investigate if there is significant different between computer and manual measurements. The resulting p-values of the "number of chest compressions" and "chest compression rate" are 0.897 and 0.945, respectively. Accordingly, all null hypotheses are accepted to suggest that there is no significant difference between computer and manual measurements.

Conclusions: The experimental results suggest that our innovative kinect depth cam-based computerized measurements are highly comparable to manual measurements. Therefore, our pilot depth cam computerized system has the potential to be installed in emergency medical services (EMS) ambulances for effectively uncovering the practical situations and possible factors for inadequate pre-hospital CPR performance during ambulance transport

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EVALUATION OF ECLS IN REFRACTORY CARDIAC ARREST : PRACTICE STUDY IN A REGIONAL UNIVERSITY MEDICAL CENTER

Audrey Reix (1)

1. Emergency Department, CHU J. MINJOZ, Besançon, France

Corresponding author: audrey_reix@yahoo.fr

Keywords: ExtraCorporeal Life Support, Refractory cardiac arrest, Outcomes

Introduction : Since 1976, ECLS (ExtraCorporeal Life Support) was used in the treatment of refractory cardiac arrest (RCA). At that time, this technique turned to be quite disappointing. Since 2005, several studies were published with promising results leading in 2008 to the establishment of French guidelines for the use of ECLS in the management in RCA. This study aims at showing the number of patients who can benefit from this therapeutic of exception and the obtained outcomes.

Methods : This is a multicentric descriptive retrospective study from January 1 to december 31 2010 which analysed all in-hospital as well as out of hospital cardiac arrest occurring in a range of 10 minutes around the hospitals. The patients older than 65 were excluded.

Results : 59 patients in the overall population, 69% male, mean age 49 ± 13.7 years old. The average arrival time of Mobile Intensive Care Unit (MICU) is 10 minutes. The no-flow and the low-flow were respectively $6,5 \pm 14,4$ minutes and $38 \pm 29,3$ minutes. 40 patients have ECLS criteria and 15 patients benefit from this therapeutic. The mortality of the out-of-hospital is 70% and for the in-hospital is 40%. In the population who benefits from ECLS, the average "no-flow" and "low-flow" are respectively $1,25 \pm 2,6$ minutes and $12,5 \pm 10,5$ minutes. The survival is 6,6%. Only 2 patients were off ELCS : the first was a cardiogenic shock (weaned at D13, died at D91 because of a haemorrhagic shock probably related to a mucormycose's vascular injury)

and the second one was in severe hypothermia (initial cannulation was started in a general hospital and the patient was transferred with ECLS to the university hospital, weaned at H19). This patient is alive with CPC 1.

Discussion : Our study population is the same of that shown in the literature. The main limitation of this study is the lack of primary data as no-flow, low-flow, capnography and temperature.

Conclusion :

The overall survival of refractory cardiac arrest of all etiologies under ECLS is 6,6% in 2010 in our region. Well-argued ECLS indications should be implemented to avoid unnecessary procedure between multidisciplinary discussion.

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THERAPEUTIC HYPOTHERMIA IN POST CARDIAC ARREST PATIENTS: HOW LONG TO REACH TARGET TEMPERATURE, A RETROSPECTIVE STUDY

David Farcy (1), Janelle Suarez (2)

1. Emergency Department, Mount Sinai Medical Center, Miami Beach, United States

2. Emergency Department, Mount Sinai Medical Center, Miami, United States

Corresponding author: janellesuarez@yahoo.com

Keywords: Our study included 17 patients from 2010 to 2013. The average subject age was 65 years; 13 patients were male (76%). Four patients were excluded from the study. One developed an intracranial hemorrhage (ICH) after initiation; 1 died within four hours o, Study Design and Parameters: Data from a single institution from a community setting in patients presenting with sustained cardiac arrest outside the hospital and ROSC was collected via a restrospective chart review., Discussion: Therapeutic hypothermia has been shown to improve neurological function post cardiac arrest with SROC. It seems that hypothermia is neuroprotective in these patients though the exact temperature has been debated in the literature and whether i

Introduction: Out-of-hospital cardiac arrest (OHCA) data suggests that approximately 350,000 to 450,000 occur annually in the United States. Of these, 60% are treated by emergency medical service (EMS) providers and 50% occur in individuals with no prior history of cardiac disease. Despite significant advances in emergency cardiac care, survival rates from OHCA remain low, less than 5%.1 Anoxic brain injury is found to be a major morbidity among the survivor of cardiac arrest. In 2002, two prospective randomized trials were performed to compare normothermia to hypothermia in comatose survivors in OHCA. Hypothermia has a protective effect on neurologic function and may improve neurologic functional recovery. The speed of induction of hypothermia is an extremely important factor to achieve target temperature. Up to now there is no study that looks at the speed of achieving target goal in hypothermic protocol in a community teaching

hospital. We performed a retrospective chart review of patients that underwent therapeutic hypothermia after ROSC in our institution.

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IMPLEMENTATION OF A NATIONAL PROGRAMME OF AUTOMATIC EXTERNAL DEFIBRILLATION IN OUR COUNTRY

Ivo Cardoso (1), Raquel Ramos (2), Miguel Soares-oliveira (3)

1. Department of emergency medicine, National Institute of Emergency Medicine, Lisbon, Portugal

2. Department of emergency medicine, National Institute of Emergency Medicine, Lisboa, Portugal

3. President (Chairman) of National Institute of Emergency Medicine, National Institute of Emergency Medicine, Lisbon, Portugal

Corresponding author: teresa.schiappa@inem.pt

Keywords: AED, Cardiorespiratory arrest, Emergency Medicine

Introduction/ Aim: The European Resuscitation Council (ERC) considers the cardiovascular disease as the main cause of death worldwide, and in Europe sudden death is responsible for over 60% of death in adults. Also in our country this disease constitutes a serious health problem, being the most of the avoidable deaths associated to coronary disease. The ERC refers that the initial rhythm that is more currently found in cardiorespiratory arrest (CRA) of cardiac origin in the adult is ventricular fibrillation. In this case the probability of survival is the biggest the shortest time between the fibrillation and the defibrillation. The international experience shows that, in an off-hospital environment, the use of automatic external defibrillators (AED) by non-medical staff increases significantly the probability of the victim's survival. However, only the existence of an efficient survival chain allows the AED an effective measure for the improvement of survival after a CRA. Herein we will present the experience with the implementation of a National Programme of AED in our country.

Material/ Method: In August 2009, it was published the Decree-Law n.º 188, which established the legal base for the AED practice. Later, in August 2012, the Decree-Law nº 184, obliges airports, commercial ports, commercial areas and transportation stations with a medium flux of 10.000 passengers a day to have a AED programme. This laws caused the integration of the AED in a off-hospital environment in an organised, structured context with a strict medical control, thus minimizing the risks of an unwanted use of the equipment. Our institution has the responsible for the definition, organisation, coordination and evaluation of the medical emergency activity. The period of this analyse is from the final of 2009 to the first quarter of 2013. This is a descriptive and retrospective vs prospective analysis of the national implementation, on AED. We analysed:

- N.º BLS/DAE courses
- N.º AED's available in EMS System
- N.º licenced programmes
- N.º of public places with AED
- N.º AED's used in licenced programmes
- N.º AED's operational technicians
- N.º Return of spontaneous circulation (ROSC) in the first trimester 2013

Results: In 3 years we has progressively provided 104 BLS/DAE courses, 399 AED's were implemented in ambulances. The phases of the programme expansion were based on epidemiologic criteria of occurrence of CRA. In this same period 238 programmes have been licenced in 363 public spaces and 61 private ambulances, with a total of 6.459 AED's operational technicians and 518 equipments. The AED's in public places increased from 1 to 518 and from 8 to 339 in the Fire Department's. In this same time occurred 74 AED application's in licenced programmes. Data gathered at the NRPCHA in the first trimester of 2013 show that 4.381 cases of CRA happened, and we had register 188 cases (4,3%) of ROSC during a period higher than 30 seconds.

Conclusion: The NRPCHA intends to approximate the medical emergency to the citizens through the education of the population and the expansion of the n.º of AED's in emergency vehicles crewed by non-medics and through new programmes of AED in public places. The n.º of ROSC's in the first trimester of 2013, 2 cases for day of CRA, show the value of this national programme in our country.

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ASSESSMENT OF THE UPDATE ON CPR BY STAFF HEALTH IN THE HOSPITAL EMERGENCY DEPARTMENT

Isabel Hernández Hernández, Nuria Pérez Alonso, Jorge Armando Rivas Baez, Raquel Navarro Valverde, Daniela Rosillo Castro, Pascual Piñera Salmerón
Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: CPR, COURSES, KNOWLEDGE

INTRODUCTION

The cardiopulmonary resuscitation (CPR) is one of the most important procedures that are performed in a hospital emergency department. This procedure is globally standardized by the American Heart Association (AHA) and the European Association CPR (ERC) and is updated every 5 years. The last update for the year 2010 and includes significant changes in patterns of action. Updates in this area should be conducted every two years by health professionals.

Our goal is to monitor whether the professional (nurses and doctors) of emergency services is recycled in CPR properly,

and if their knowledge of CPR meet the new recommendations published.

METHODOLOGY

A survey consists of two parts, the first respondent collects demographic data, and CPR training. The second consists of 20 multiple choice questions with 4 possible answers, with only one correct possibility, of which 6 questions concern basic life support (BLS), 14 enrolled on advanced life support (ALS) and 7 refer explicitly to the extent modified in the new AHA 2010. SPSS18 program was used for data analysis.

RESULTS

The 16.2% have made more than 5 courses on CPR, 12.6% made 4 courses, 19.2% made 3 courses, 27.8% 2 courses, 16.3% made 1 course, and 8.1% did not perform any course.

For the year from last update, 44.5% has been updated between 2011 and February 2013 (in 2011 17.7%, in 2012 21.2%, in 2013 5.6%), the rest 25.2% respondents was updated by 2009 and 10.1% never update.

The 46.47% of doctors and nurses 36.95% of the courses have made within the last two years.

Only 7.1% exceeds 80% of the questions related to the recommendations of 2010 (Percent Fixed PNRCP to approve their questionnaires) and 35.4% over 50%.

From professionals updated correctly 7.95% exceeds 80% and 37.5% half of the questions.

Professionals who make more than two years that have been updated over 80% the 6.36% and 50%, the 33.3%.

CONCLUSIONS

3 out of 5 professionals has not completed a course within the permissible range of two years set by the AHA to update. The 53.53% of doctors and 63.05% of nurses are not properly updated.

However, no significant differences were found between the number of correct answers on the questionnaire to date within the last two years and the remaining respondents.

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A NATIONAL STUDY ON PREHOSPITAL PEDIATRIC AND ADULT RESUSCITATION

Marius Smarandoiu (1), Alin Canciu (1), Denisa Falamas (1), Daniela Taran (1), Lavinia Orac (3), Petre Iliovici (2)

1. Emergency department, SMURD Sibiu, Sibiu, Romania

2. Statistics, ULBS, Sibiu, Romania

3. Emergency department, UPU-SMURD Mures, Tg Mures, Romania

Corresponding author: mariussibiu@yahoo.com

Keywords: pediatric, resuscitation, cardiac arrest

Background

SMURD (Mobile Emergency, Resuscitation and Extrication Service) is a consecrated national emergency care system, which consists in both intensive care (type C) and first aid

(type B) mobile units. Since its appearance this medical care service has been under a continuous development process. The aim of this national study is to analyze and acknowledge the performance of the system considering both pediatric and adult cardiac arrest cases. Our focus as health care providers is on how we can improve and maximize efficiency of the system we are part of by emphasizing some of the issues we have confronted with during our work and proposing potential solutions. Considering the initial experimental character of SMURD, we are placing additional attention on acknowledging the overall efforts and work of our health providers demonstrated both by the large number of patients assisted and medical outcomes.

Methods

The national database consists in 589873 cases, on a period of 3 years (01.01.2010-31.12.2012), out of which 9756 cardiac arrests (241 pediatric, 9515 adult) cases that benefited of CPR maneuvers were extracted. Cases were analyzed from multiple points of views: rhythm of cardiac arrest, ROSC, urban and rural background, comparison of outcomes between type B and C ambulances.

Data contains medical details of the case: reason for calling 112, patient status at medical team arrival, Glasgow Coma Score, type of affliction, initial and final vital signs, and treatment conducted.

Results

The common used element in comparing performances is ROSC (return of spontaneous circulation) by the time the ambulances arrived to hospital.

Analyzing adult cardiac arrests emergencies, the rate of ROSC for type C ambulance is of 13% compared to almost 3% for cases attended by type B ambulances. Following the rhythms of cardiac arrests, the greatest rate of success was achieved when FV/TV was present, followed by PEA and Asystole.

Pediatric cardiac arrests attended by both type C and B ambulances were 241; the rate of ROSC was considerably lower 7% as in adult emergencies, the chances of survival being greater when PEA was present, followed by FV/TV and Asystole.

Conclusions

Analyzing the results we can conclude that:

- The most frequent rhythm of cardiac arrest is Asystole, in both pediatric and adult patients
- The chances of ROSC by the time the patient is admitted to hospital, are considerably lower in pediatric patients than in adult ones
- FV/TV is less frequent encountered in pediatric patients compared with adult cardiac arrests
- Patient's chances of survival are greater when attended by a type C ambulance

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CARDIOPULMONARY RESUSCITATION OUTCOMES IN THE EMERGENCY DEPARTMENT OF A COMPREHENSIVE CANCER CENTER

Marcelo Sandoval, Adam Miller, Kelly Merriman, Monica Wattana, Valda Page, Knox Todd

Department of Emergency Medicine, MD Anderson Cancer Center, Houston, United States

Corresponding author: khtodd@mdanderson.org

Keywords: Cancer, Cardiopulmonary resuscitation, Health services

Introduction: Cardiopulmonary resuscitation (CPR) can be a life-saving intervention after cardiac arrest; however, the indiscriminate use of CPR among unselected populations and particularly among those with pre-existing terminal disease confers little chance of benefit and a great possibility of harm. Cancer patients have particularly low rates of return of spontaneous circulation (ROSC) and survival to hospital discharge after CPR. An increased emphasis on palliative care for cancer patients and the incorporation of patient goals of care in planning therapeutic interventions holds the promise that CPR might be used more selectively among those with cancer, thereby resulting in higher rates of ROSC and longer term survival after cardiac arrest. Our study objective was to determine rates of ROSC and survival to hospital discharge among cancer patients undergoing CPR in the emergency department (ED) of a comprehensive cancer center. Additionally, we examined whether these rates changed over the past decade.

Methods: This is an IRB-approved retrospective observational study conducted in the ED of a comprehensive cancer center with an annual volume of 22,000. We reviewed all cases of CPR (defined as patients receiving chest compressions) presenting to the ED for years 2002-2012. We identified cases using our institutional CPR database as well as a review of administrative data for resuscitation/CPR billing codes (CPT 92950). We excluded patients without cancer (<5% of ED volume). We abstracted data utilizing a modified Utstein template and recorded age, gender, ethnicity, evidence of ROSC and whether patients were discharged alive from the hospital. We compared proportions achieving ROSC and survival to hospital discharge for two time periods: 2002-2007 (Group 1) and 2008-2012 (Group 2), using traditional Pearson chi-square statistics.

Results: We identified 126 ED patients who received CPR from 2002-2012. Group 1 (N=64) and Group 2 (N=62) were similar with regard to age (60 vs. 59 years), gender (63% vs. 58% male), and ethnicity (67% vs. 57% White). Proportions achieving ROSC were similar in the two time periods (35.9% in Group 1 vs. 45.2% in Group 2, OR=1.47, 95% CI 0.72 to 3.00). Similarly, survival to hospital discharge did not appear to change over time (10.9% in Group 1 vs. 9.7% in Group 2, OR 0.87, 95% CI 0.28 to 2.76).

Conclusion: Although rates of ROSC after CPR in cancer patients improved by a small amount over the past decade at our institution, these changes were small and statistically insignificant. The more important outcome of survival to hospital discharge did not change over time. Any trend toward improved ROSC outcomes that may exist could result from improvements in CPR quality. The lack of improvement in survival to hospital discharge may suggest that CPR continues to be performed on an unselected

population, rather than being targeting toward subsets of cancer patients who are more likely to receive benefit. Larger study populations, for whom we have more information on potential confounding factors, will be required to more definitively answer our study question.

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KNOWLEDGE OF CARDIOPULMONARY RESUSCITATION BY EMERGENCY SERVICE PROFESSIONALS

Nuria Pérez Alonso (1), Daniela Rosillo Castro (1), Raquel Navarro Valverde (2), Isabel Hernández Hernández (2), Jorge Armando Rivas Baez (3), Pascual Piñera Salmerón (4)

1. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain
2. Emergency department, Hospital General Universitario Reina Sofía, Murcia, Spain
3. Emergency department, Hospital General Universitario Reina Sofía, Murcia, Spain
4. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: Advance life support, Basic Life support, CPR

INTRODUCTION

The procedure for action in CPR is standardized worldwide through the recommendations that are published by the American Heart Association (AHA) and the European Resuscitation Council (ERC), that reviewed every five years, so recommend that professionals are recycled every 2 year. OBEJITIVE: Our goal is to know the level of knowledge in basic and advanced life support for health professionals, nurses and doctors with more than one year of experience in hospital emergency doors of an Autonomous Community.

METHODOLOGY

Survey consists of a first part of demographic and training data and the second consists of 20 multiple choice questions with 4 possible answers, with only one correct possibility, of which 6 questions concern basic life support (BLS), 14 enrolled on advanced life support (ALS) and 7 refer explicitly to the extent modified in the new AHA 2010. It is considered as those who passed the exam correctly answered half of the questions
SPSS18 program was used for data analysis.

RESULTS

We obtained a sample of 198 questionnaires belonging to doctors the 35.9%, the 46.5% to nurses, and a 17.6% to residents.

The 41.9% of respondents have more than 10 years of total work experience and 23.3% for over 10 years working in the ER.

The 32.8% has a total work experience of between 6 and 10 years, and 36.40% have work experience in the emergency

department between 1 and 5 years. The 48% has more than 3 refresher courses.

For the year from 44.5% last update has been updated between 2011 and 2013, the rest 45.4% respondents was updated by 2009 and 10.1% never update.

The 51.5% of professionals pass the test (50% questions), 49.6% more than half of SVB, 56% that of ALS and 35.4% the new recommendations.

The professional successes by 71.8% of doctors, and nurses 38.04% approve. With regard to the BLS 60.56% of doctors and 47.82% of nurses.

About ALS the 73.23% of doctors, and nurses 42.39%. And new recommendations 38.02% of doctors, and 31.5% of nurses.

If we apply the scales of PNRCP (80% correct) to pass the exams we would find that only 3% of the total pass the examination. The BLS 8.1%, 10.6% ALS, and 7.1% the new recommendations.

If we separate professional category 4.2% of the doctors, and 3.26% of the nurses. In SVB 8.45% of doctors and 8.69% for nursing

In ALS 1.8% of doctors and 6.5% of nurses. And for the new recommendations of doctors 8.45% and 7.60% of nurses.

CONCLUSIONS

Half of the professionals pass the exam as our scale, but less than 1 in 10 approved as the PNRCP.

3 out of 10 professionals, is right more than 50% of the questions versed on new recommendations.

7 out of 10 doctors, pass 50% of the questions but not less than 5% that pass the exam as PNRCP.

A third of nurses over 50%, and as doctors less than 5% over 80% of the questions.

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POINT OF CARE ULTRASOUND - FRIEND OR FOE ?

Omar Ghazanfar (1), Irfan Gudaro (1), Rahat Ghazanfar (2), Sharadh Garach (3), Erskine Holmes (4)

1. Emergency Department, Wexham Park Hospital, Slough, United Kingdom
2. UCC, Wexham Park Hospital, Slough, United Kingdom
3. Emergency Department, Stanger Hospital, Stanger, South Africa
4. Emergency Department, Craigvon Area Hospital, Northern Ireland, United Kingdom

Corresponding author: oghazanfar@nhs.net

Keywords: Ultrasound, Point of Care, Useful

The last 5 years have shown a greater demand for point of care ultrasound in the Emergency Department with more doctors getting trained to perform the scans. The COLLEGE of EMERGENCY MEDICINE UK has Level 1 ultrasound as a compulsory part of the training curriculum.

There is no doubt that point of care ultrasound is a very useful diagnostic tool in the hands of the right operator and often avoids hospital admissions and maximises limited resources.

The problem is that there is still a dearth of trained doctors in the Emergency Department to provide a 24/7 uniform service and tends to vary during the course of 24hrs. Point of care ultrasound does not rule out the use of more advanced scanning such as CT scans, for instance in trauma. We will try and illustrate the pros and cons of point of care ultrasound in the Emergency Department

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COMPARISATION DIAGNOSTIC VALUE OF BARIUM MEAL AND ENDOSCOPY METHOD IN DIAGNOSIS OF UPPER GASTROINTESTINAL DISEASE

Samira Esfandyari (1), Mohammad Kalantari Meibodi (2)

1. pediatric ward, student research committee shiraz medical science, shiraz, shiraz, Iran, Islamic Republic of

2. emergency medicine, shiraz medical university, shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: endoscopy, barium meal, diagnostic

Introduction: The upper gastrointestinal disease is the one of common disease in people find the accurate and the correct method to earlier diagnosis of this problem is necessary. In this search we want to compare that which method of barium meal and endoscopy have more value in diagnosed upper gastrointestinal disease

Material and methods

At first we consider 60 out-patient with GI problems referred to hospitals Emam Hossain during 3 months. Then these patients underwent barium meal method after 6-8 hours fast and after 24 hours endoscopy and biopsy (if ulcer visualized) was performed on these patients.

In this situation endoscopist have no information about barium meal result. Barium meal result was discussed by at least 3 radiologists and endoscopic method was performed by one endoscopist. (before performed the barium meal and endoscopy method patient was fast).

Results: diagnosis of esophageal disease barium meal method have a diagnosis value the same as endoscopy in diagnosis 80% of esophageal cancers and polyps but in esophagitis and candidiasis endoscopy was value better rather than barium. Barium meal of 60% was reported normal by 3 radiologists have a gastric ulcer in endoscopic method and have cancer in biopsy.

Barium meal of 65% and 50% and 100% was reported normal by 3 radiologists have a gastritis and polyp and gastric varic respectively in endoscopic method.

Barium meal of 9% was reported normal by 3 radiologists have a duodenitis and erosion in endoscopic method in duodenum. Barium meal method have a better diagnostic value rather than endoscopy in diagnosis of duodenal diverticulum in diagnosis of duodenal disease.

CONCLUSION

this search endoscopy method have more diagnosis value in diagnosis of esophagitis and esophageal candidiasis and gastritis and gastric cancer and ulcer and gastric varic and duodenitis rather than barium meal. In duodenal barium meal method have a better diagnostic value rather than endoscopy in diagnosis of duodenal diverticulum.

We recommend all the patients with symptom and sign of upper gastrointestinal problem despite of normal barium study should be under endoscopy procedure

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CT SCAN FOLLOWING MINOR HEAD INJURY: THE INCIDENCE, RISK FACTORS AND PRESENTING SYMPTOMS OF INTRACRANIAL INJURY

Peter Ahee (1), Balraj Dhesi (1), Umair Janjua (2)

1. Emergency Department, City Hospital, Birmingham, United Kingdom

2. Emergency Medicine, City Hospital, Birmingham, United Kingdom

Corresponding author: balraj.dhesi@nhs.net

Keywords: Trauma, Imaging, Brain

Background: Minor head injury (MHI) accounts for 700,000 admissions to the Emergency Department (ED) in UK every year. The NICE guidelines are the accepted standard used for managing MHI in the United Kingdom. As CT becomes ever more available, the incidence of CT scanning is fast increasing.

Objectives: To describe the incidence of differing grades of injury in patients undergoing CT head imaging following MHI. To retrospectively characterise the demographics and presenting features of patients presenting with intracranial injury or skull fracture (ICISF) and extracranial fracture (ECF) requiring further management.

Methods: We performed a retrospective observational study of patients undergoing CT head scanning for MHI at an inner city hospital. Patients having a CT head scan over a 3 month period were included. Those undergoing CT for reasons other than MHI, or non-ED referrals were excluded. CT scans were reviewed by two trained radiologists, and graded according to an injury severity scale. Attendance records for all eligible patients were retrospectively reviewed. Patient demographics, presenting history and symptoms were recorded and statistically analyzed.

Results: Of 148 patients, 10.8% sustained intracranial injury or skull fracture. 8.1% suffered extracranial fractures. 81.1% of patients had no significant abnormality. Peak incidence in two age groups were found in the ICISF group (early peak at 20-40 year and late peak 60-80 years), ECF were seen in a young population. ICISF was associated with post-traumatic headache (incidence of 56%, $p < 0.001$). Presenters with ECF were more likely to be under the influence of alcohol and victims of assault (evidence of alcohol in 83%, $p = 0.014$ and assault in 67%, $p = 0.023$).

Conclusion: The incidence of intracranial injury is similar to large international studies undertaken in other countries. This suggests an acceptable pick-up rate of intracranial injury when using the NICE guidelines. We also identify some of the 'at risk' groups of patients susceptible to intracranial injury, and the population at risk of suffering from extracranial fracture

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CT IMAGING IN MINOR HEAD INJURY: WHO GETS THE SCAN?

Peter Ahee (1), Balraj Dhesi (1), Umair Janjua (2)

1. Emergency Department, City Hospital, Birmingham, United Kingdom

2. Emergency Medicine, City Hospital, Birmingham, United Kingdom

Corresponding author: balraj.dhesi@nhs.net

Keywords: Trauma, Imaging, Brain

Background: The National Institute of Clinical Excellence (NICE) guidelines are the long-established standard used for managing minor head injury (MHI) in the United Kingdom (defined as GCS 13-15). CT is the 'gold standard' in immediate imaging investigation for MHI. Increasing concerns over UK departmental workload, costs, and unnecessary radiation dose in an already strained National Health Service necessitates justified use of all resources. We look at which patients presenting with MHI warrant further CT imaging according to this NICE protocol.

Objectives: To describe the population who are referred for CT head scans after presentation to ED with MHI. To identify high-risk groups in MHI who qualify for CT imaging. To help emergency departments improve planning of the management of minor head injury.

Methods: We performed a retrospective observational study of patients undergoing CT head scanning for MHI at an inner city hospital. CT head scans over a 3 month period were included. Those undergoing CT for reasons other than MHI, or non-ED referrals were excluded. Attendance records for all eligible patients were retrospectively reviewed. Patient demographics, presenting history and symptoms were recorded and statistically analyzed.

Results: 148/538 (27.8%) adult CT scans were performed for minor head injury during the three months.

A young age (mean 46, range 18-101), male sex (75.0% of presenters) and being under the influence of alcohol (49.3%) were the commonest presenting demographic findings. Being male and under the influence of alcohol was particularly predictive of CT imaging. ($p=0.006$).

The commonest mechanism of injury was assault (37.2%) and commonest symptom was loss of consciousness (39.2%). 73.0% of patients had Glasgow coma score (GCS) 15, whilst only 6% were GCS 13. The use of alcohol was particularly common in the younger age group ($p=0.055$).

Conclusion: In our population, a large proportion of scans (27.8%) requested by ED are for minor head injury. An

appreciation of common presenting demographics, features and symptoms are important to recognise.

In this cohort of patients using the NICE guidelines, further CT imaging for minor head injury is most common in presenting patient demographics of young age, male gender and presenting history of assault and loss of consciousness. Interestingly, the Glasgow coma scale was often reported as normal.

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THE EVALUATION OF AORTIC DIAMETER USING ULTRASONOGRAPHY IN THE PATIENTS WITH ABDOMINAL PAIN IN EMERGENCY DEPARTMENT

Hasan Celiker (1), Zeynep Kecec (2), Mehmet Oguzhan Ay (3), N.rana Disel (2)

1. Emergency department, Karaman state hospital, Karaman, Turkey

2. Emergency Medicine, Cukurova University Medical School, Adana, Turkey

3. Emergency Medicine, adana numune education and research hospital, Adana, Turkey

Corresponding author: zkecec@cu.edu.tr

Keywords: Abdominal aortic aneurism, Emergency ultrasonography, Abdominal pain

Purpose: Scanning the patients consulting the emergency department with abdominal pain for abdominal aortic aneurism is important for early diagnosis and reduction in mortality. In our study, abdominal aortic diameter of patients aged at least 50, consulting emergency department for abdominal pain and having risk factors such as hypertension, atherosclerosis and smoking history were measured with ultrasonography, and these patients were evaluated for the frequency of abdominal aortic aneurysms. Thus, it was targeted to determine the contribution of aortic diameter measurement on emergency practice and its place in emergency diagnosis and treatment.

Material and Method: In our prospective study, abdominal aortic diameters of 115 patients who admitted to Cukurova University Medical School Department of Emergency between June 2010 and October 2011 having at least one of the abdominal aortic aneurism risk factors such as hypertension, atherosclerosis and smoking history were evaluated with ultrasonography. Abdominal aortic diameters were recorded after an evaluation in three levels with ultrasonography; celiac-superior mesenteric artery level, mid-line and bifurcation level. Demographic data, abdominal aortic aneurism risk factors and additional diseases of the patients were recorded and analyzed.

Findings: 60 (52,2 %) male and 22 (47,8 %) female, total 115 patients aged between 50 and 84 (mean age $66,9 \pm 9,1$) were included in the study. Abdominal aortic aneurism was reported in 8 (7 %) cases. The patients with aneurysms have a mean age of $74,4 \pm 7,8$; while the patients without aneurysms have a mean age of $63,3 \pm 9,0$. Thus, it has been determined that the increasing patient age is a risk factor

for developing aneurysms ($p = 0.0015$). The likelihood to have aneurysms is 11,3 times greater in smoking patients than non-smoking patients. 8 (100 %) of the patients with a detected aneurysm were male. It has been determined that male gender is a risk factor for abdominal aneurysm.

Conclusion: It should be remembered that ultrasonography in emergency departments is a rapid and reliable tool for diagnosis to rule out abdominal aortic aneurysm in patients especially elderly (over 60), smoking and male patients consulting the emergency department with abdominal pain. With bedside ultrasonography, early diagnosis and treatment of abdominal aortic aneurysm in emergency departments may decline the deaths related to abdominal aortic aneurysm.

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THE RELATIONSHIP BETWEEN INFERIOR VENA CAVA DIAMETER MEASURED BY BEDSIDE ULTRASONOGRAPHY AND CENTRAL VENOUS PRESSURE VALUE

Serenat Citilcioglu (1), Ahmet Sebe (2), Mehmet Oguzhan Ay (3), Mustafa Sahan (4), Ferhat Icme (5), Salim Satar (3)

1. Emergency Medicine Service, Cukurova Dr. Askim Tufekci State Hospital, Adana, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
4. Emergency Department, Elazig Education and Research Hospital, Elazig, Turkey
5. Emergency Department, Ankara Ataturk Education and Research Hospital, Ankara, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Central venous pressure, emergency, bedside ultrasonography

Background and Objective: We aimed to present inferior vena cava (IVC) diameter as a guiding method for detection of relationship between IVC diameter measured noninvasively with the help of ultrasonography (USG) and central venous pressure (CVP) and evaluation of patient's intravascular volume status.

Material and Methods: Patients over the age of 18, to whom a central venous catheter was inserted to their subclavian vein or internal jugular vein were included in our study. IVC diameter measurements were recorded in millimeters following measurement by the same clinician with the help of USG both at the end-inspiratory and end-expiratory phase. CVP measurements were viewed on the monitor by means of piezoelectric transducer and recorded in mmHg. SPSS 18.0 package program was used for statistical analysis of data.

Results: Forty five patients were included in the study. 11 patients (24.4%) required mechanical ventilation while 34 (75.6%) patients had spontaneous respiration. In patients

with spontaneous respiration, a significant relationship was found between IVC diameters measured by ultrasonography at the end of expiratory and inspiratory phases and measured CVP values at the same phases (for expiratory $p = 0.002$, for inspiratory $p = 0.001$). There was no statistically significant association between IVC diameters measured by ultrasonography at the end of expiration and inspiration and measured CVP values at the same phases in mechanically ventilated patients.

Conclusions: IVC diameter measured by bedside ultrasonography at the end of expiration and inspiration was found able to be used for determination of the intravascular volume status.

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AN ANALYSIS OF THE INVESTIGATIVE APPROACH TO RENAL COLIC IN AN EMERGENCY DEPARTMENT.

Navin Ramphul (1), Damien Ryan (1)

1. Emergency Department, Limerick University Hospital, Limerick, Ireland

Corresponding author: nramed@gmail.com

Keywords: Renal colic, Urinalysis, CT Urogram

TITLE An Analysis of The Investigative Approach to Renal Colic in an Emergency Department.

INTRODUCTION Traditionally, Intravenous Pyelogram (IVP) or CT Urogram (CTU) is undertaken when there is a history of classical renal colic, coupled with the finding of blood on urinalysis and/or the finding of a calculus on a KUB. We set out to assess the reliability of this approach.

METHODS The case notes were obtained of ED patients who underwent IVP and/or CTU during a consecutive 3 month period in 2012. These were analysed for gender, symptoms, physical signs, urinalysis, X-Ray (KUB) findings, IVP and/or CTU result, patient outcomes and grade of doctor reviewing the patient.

RESULTS One hundred and eight presentations were identified. Forty-five cases (41%) were positive for nephrolithiasis (positive group PG, 3:1;M:F). In the PG, the three most common symptoms were loin to groin pain (73%), isolated abdominal pain (44%) and colicky abdominal pain (38%) whereas in the negative group (negative for nephrolithiasis, NG) these were loin to groin pain (41%), flank and loin pain only (25%) and colicky pain (22%). Urine dipstick was positive for blood in 55% of the PG, and 52% positive in the NG. Urine microscopy was positive for blood in 64% of the PG, and 35% in the NG. KUB was reported as positive for calculus in 49% of the PG, and 8% of the NG. SHOs saw 62% of the PG and 56% of the NG. Eighty-three percent of the NG and 73% of the PG were discharged. One patient in the PG group had neither blood in the urine nor findings on KUB. Significant alternative diagnoses were made in 5 cases.

CONCLUSION More patients in the PG had the classical symptoms of renal colic and blood on urine microscopy,

and substantially more in that group had a positive KUB. A comparable proportion of both groups had urine dipstick positive for blood.

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AMBULATORY MANAGEMENT OF MEDICAL IMAGERY IN ACUTE RENAL COLIC OR ACUTE PYELONEPHRITIS: RECOMMENDED IMAGING DEADLINE RESPECT.

Frederic Baquet (1), Julie Nguyen-zundel (1)

1. emergency department, CHU Bicêtre, Kremlin-Bicêtre, France

Corresponding author: fre2@aliceadsl.fr

Keywords: ambulatory, urinary tract imaging, guidelines respect

Background:

Acute renal colic and acute pyelonephritis are both frequent disease in emergency department (ED) consultations. French guidelines allow patient discharge from ED if there's no gravity sign, and patient can do ambulatory imaging.

Acute abdominal pain from upper urinary tract tension defines acute renal colic. 75 to 80% are caused by urinary lithiasis. It represents 1 to 2% per year of emergency department admissions. Guidelines recommend urinary tract imaging in 48 hours.

Pyelonephritis is defined by kidney parenchyma infection. Incidence in United States is estimated at 27, 6 per 10000. Guidelines recommended urinary imaging in 24 hours following departure.

The aim of this study is compare imaging deadline from guidelines with real time realization, for patient diagnose with acute renal colic or acute pyelonephritis.

Methods:

This study last for 3 months. All patients, consulting emergency department of Bicêtre Hospital (94270, France) and leaving ED with diagnosis of acute renal colic or pyelonephritis, were called few days after discharge. Imaging delay, comparison with guidelines imaging deadlines and reason of delayed imaging were enquired. Patients without telephonic information were excluded.

Results:

75 patients were included in 3 months. Included population is representative of standard emergency department population. 16% (n=12) have urinary imaging in recommended time.

Among the 84% (n=63) patients who have delayed imaging, 32% (n=20) were made an appointment too late, 25% (n=16) don't make appointment. 43% (n=27) have no prescription when they leaving ED.

Conclusions:

Even if guidelines allow patient discharge and ambulatory imaging management of patient diagnose with non complicated acute renal colic or non complicated acute pyelonephritis, this study show that most half of patients will not have urinary imaging in recommended time.

To limit radiology service overcrowding and earlier discharge from ED, a first renal ultrasound made by practiced physicians may eliminate with reproductive reliability, some complication unknown like unique kidney or obstructive acute pyelonephritis.

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THE ROLE OF THE EARLY DIASTOLIC VELOCITY OF THE MITRAL VALVE ANNULUS (EA) IN PREDICTING THE SEVERITY OF SEPSIS IN PATIENTS ADMITTED IN AN EMERGENCY UNIT

Thiago Martins Santos (1), Daniel Franci (1), Diego Lima Ribeiro (1), Marcelo Schweller (1), José Roberto Matos Souza (2), Marco Antonio Carvalho Filho (1)

1. Emergency Department, Hospital de Clínicas da Unicamp, Campinas, Brazil

2. Cardiology Department, Hospital de Clínicas da Unicamp, Campinas, Brazil

Corresponding author: thiago.uti@gmail.com

Keywords: echocardiography, sepsis, early diastolic velocity of the mitral valve annulus

Objective

This investigation was designed to assess whether the early diastolic velocity of the mitral valve annulus (Ea) obtained with Doppler tissue imaging (DTI) is a good predictor of disease severity in patients with sepsis, severe sepsis and septic shock

Materials and Methods

This was a prospective observational study. Forty-one patients were evaluated within the first hour of admission in the emergency department. Patients were placed in the supine position. All measurements and images were obtained in the four-chamber echocardiographic window, with a 1,5-3,5 MHz phased array transducer using a standard cardiac preset.

Two scoring systems (MEDS and SAPS3) were adopted.

Results

Feasibility of the exam was good, and we considered it as an easy-to-use tool. Moreover, it did not delay the specific sepsis treatment.

The Ea values correlated negatively with both MEDS (-0,57; p=0,01) and SAPS3 (-0,48; p=0,02) scoring systems. However, the negative correlation was not found in the subgroup of patients with septic shock (table 1).

Ea MEDS SAPS 3

All patients -0,57 -0,48

Sepsis -0,41 -0,65

Severe Sepsis -0,51 -0,38

Septic Shock 0,21 -0,02

Table 1. Correlation between sepsis severity and Ea.

Conclusion

The Ea is practical and easy to obtain. It is also a good predictor of sepsis severity in patients who do not present with septic shock.

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ACUTE ABDOMINAL AND BACK PAIN IN A MIDDLE AGED GENTLEMAN. AORTOCAVAL MASS AND AN UNEXPECTED DIAGNOSIS ON EMERGENCY BEDSIDE ULTRASOUND IMAGING.

Deirdre Breslin (1), Tomas Breslin (1), Denise Connolly (1), Adrian Moughty (1), Eamon Brazil (1), John Mcinerney (1), Gerard O'connor (1)

1. Department of Emergency Medicine, Mater Misericordiae University Hospital, Dublin, Ireland

Corresponding author: geroconnor@me.com

Keywords: FAST, Ultrasound, Vascular sonography

INTRODUCTION:

Emergency Medicine (EM) Physicians routinely utilize ultrasound in the management of acute time-critical conditions. Use of FAST (Focussed assessment with sonography in trauma) techniques and vascular sonography to identify abdominal aortic aneurysms represents a common abdominal ultrasound procedure utilized in modern Emergency Departments. Both vascular sonography and FAST are frequently employed for their ability to achieve clarity in potentially life-threatening conditions.

METHODS:

A case of abdominal pain and back pain in which an infrequent diagnosis was arrived at.

RESULTS:

We report the case of a 62-year-old gentleman who presented with abdominal & back pain. There was associated dyspnoea and chest pain. His vital signs were in the normal range. Examination revealed an obvious pallor, hepatomegaly and a tender pulsatile mass in the abdominal aortic area. In the circumstances, an urgent bedside ultrasound was performed by the attending emergency physician. Ultrasound revealed a normal calibre aorta with extensive aortocaval and periportal lymphadenopathy. Sonographic hepatomegaly was also noted.

CT of the abdomen confirmed the suspicion of a lymphoproliferative disease and a Riedel's lobe of liver. Waldenström's macroglobulinaemia was eventually diagnosed.

CONCLUSION:

Aortocaval and periportal lymphadenopathy are sonographic signs that have previously been utilized by non-radiologists. For example, this sign is frequently utilized as a screening tool for diagnosing advanced HIV/AIDS. The increasing familiarity and experience with ultrasound imaging among EM physicians allows a natural evolution from simple binary decisions to more complex assessments of abnormalities of tissue architecture and organ structure. These techniques obviously have the potential to improve and expedite patient care.

The challenge remains in balancing the safe use of such techniques against accredited competence in EM ultrasound. Dissemination of knowledge about these techniques and subtleties forms a key aspect in the advancement of EM ultrasound excellence.

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ECTOPIC PREGNANCY AND FOCUSED ASSESSMENT USING SONOGRAPHY IN TRAUMA (FAST). HAMOPERITONEUM AND INTRA-ABDOMINAL HAEMATOMA RECOGNIZED USING BOTH CONVENTIONAL AND NOVEL FAST TECHNIQUES. A CASE SERIES.

Denise Connolly (1), Deirdre Breslin (1), Tomas Breslin (1), Adrian Moughty (1), Andy Neill (1), Gerard O'connor (1), Vinesh Ramiah (1)

1. Department of Emergency Medicine, Mater Misericordiae University Hospital, Dublin, Ireland

Corresponding author: geroconnor@me.com

Keywords: Ectopic pregnancy, FAST, Ultrasound

INTRODUCTION:

Ectopic pregnancy occurs when the developing blastocyst implants in an extra-uterine location, usually the fallopian tube. Ruptured ectopic pregnancy represents a life-threatening emergency and accounts for a significant proportion of pregnancy related deaths. Clinical assessment alone can be unreliable and trans-vaginal ultrasound (TVUS) is the criterion diagnostic adjunct. However many units do not have access to TVUS or trained obstetric operators. We report on a series of five cases in which application of traditional EM FAST techniques allowed for expedited diagnosis on the basis of confirmation of either haemoperitoneum and or heterogeneous echogenicity of acute haematoma.

METHODS

A case series involving five ectopic pregnancies.

RESULTS

Case 1 involved a 32 year-old lady with lower abdominal pain and light PV bleeding. Blood pressure and pulse rate on presentation was 98/62mmHg and 92 bpm respectively. Urinary HCG was positive. FAST ultrasound revealed anechoic intra-peritoneal collections in the recto-uterine pouch and paracolic gutters.

Case 2 involved a 29 year-old lady with a history of recurrent syncope in the last 2 hours who was semi-conscious with an unrecordable blood pressure. Relatives confirmed a recent self-administered positive pregnancy test. She was anuric with an empty bladder which precluded the usual pelvic FAST views. She exhibited fluid in Morison's pouch and peri-vesical fluid collections.

Case 3 involved a lady with lower abdominal pain in the context of previous Pelvic Inflammatory Disease. Blood pressure and pulse rate were within normal limits. Urinary HCG was positive. Longitudinal and Transverse classical

pelvic views showed the uterus floating in an anechoic collection of blood. It also revealed a hyperechoic region of recent haematoma.

Case 4 involved a 24 year old lady with diffuse abdominal pain and hypotension. She exhibited extensive intraperitoneal fluid on FAST ultrasound, including perisplenic fluid. On the basis of this, formal laparotomy was preferred over a less invasive laparoscopic technique.

Case 5 involved a 32 year old lady with severe lower abdominal pain. She exhibited a blood pressure of 96/56 and her urine HCG was positive. Pelvic views revealed fluid in the rectouterine pouch and paracolic gutters. There was also a heteroechoic collection superior to the uterus indicative of haematoma.

Obstetric input was expedited in all cases.

CONCLUSION

Similar binary questions regarding the presence or absence of intraperitoneal fluid apply in ectopic pregnancy as in abdominal trauma. Recognition of and familiarity of EM physicians with echogenic acute haematoma is now becoming more frequent and even commonplace. Increasing experience with FAST among EM physicians allows safe use conventional and non-conventional FAST techniques in non-trauma settings as an additional adjunct to improve and expedite patient care.

In our cases mortality was avoided and morbidity minimized through facilitation of targeted resuscitation measures and rapid obstetric input.

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IMPORTANCE OF RESORTING TO A THORACIC CT SCAN AS A FIRST-LINE TREATMENT IN CASE OF A SUSPECTED PULMONARY EMBOLISM

Stéphanie Verissimo (1), Farès Moustafa (1), Nicolas Dublanquet (1), Jeannot Schmidt (1)

1. Emergency department, CHU Clermont-Ferrand, Clermont-Ferrand, France

Corresponding author: fmoustafa@chu-clermontferrand.fr

Keywords: CT scan, Pulmonary embolism, diagnosis

Introduction:

Pulmonary embolism (PE) remains today a public health concern. For the clinician, diagnosis is made difficult because of the weak specificity of the symptoms.

Henceforth, thoracic CT scan has a central role to play in the diagnosis process of PE.

The aim of this study is to understand the prevalence of PE when a thoracic CT scan is performed for "PE suspicion" and the prevalence of alternative diagnosis offered through this examination.

Material and method:

This is a prospective, monocentric study carried out over three months from 01/05/2012 to 31/07/2012. We have analysed the diagnosis made after a thoracic CT scan was performed on 105 patients suspected of suffering from PE.

Results:

During the time of our study, a thoracic CT scan was performed on 105 patients. The care of each patient has been compared to the decision algorithm of our learned societies.

PE was suspected by the clinician for 68.5% in case of dyspnea and 44% in case of thoracic pain. The majority of patients presented an intermediary risk according to the revised Geneva score (n=61; 58.5%). PE was diagnosed in 24 patients (22.9%). Among the 81 remaining patients, 35 (33.3%) had a normal thoracic CT scan. For 45 patients (42.9%) an alternative diagnosis was reached. Most of the time it was pneumopathy (n=17, 16.2%), acute oedema in lung (n=9, 8.6%) and pleural effusion (n=9, 8.6%). 36 patients (34.3%) went home straight after leaving A&E, 34 had had a completely normal scan and 2 could be treated as outpatients.

Conclusion

Care in A&E has been significantly enhanced by the resort to thoracic CT scan in diagnosis strategies. Our study underlines first the importance of alternative diagnosis made possible by the examination in an emergency context, and second, the impact on patient care. Performing a thoracic scan in A&E has a medical (patient safety) and economical (medical expenses) impact. The resort to a CT scan should follow decisional algorithms defined by our learned societies and should in no instance become a "counterphobic" examination for the clinician.

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NEW CUT-OFF POINT FOR INFERIOR VENA CAVA COLLAPSIBILITY INDEX IN PREDICTING TRAUMATIC PATIENTS WITH LOW CVP MEASURES

Keihan Golshani (1), Shahrad Tajoddini (2), Reza Azizkhani (1)

1. Emergency Department, Isfahan University of Medical Sciences, Isfahan, Iran, Islamic Republic of

2. Emergency Department, Kerman Neuroscience Research Center, Kerman University of Medical Sciences, Kerman, Iran, Islamic Republic of

Corresponding author: k_golshani@yahoo.com

Keywords: IVC Collapsibility index, ultrasonography, Trauma

Objectives:

Ultrasonography of Inferior Vena Cava (IVC) is relatively a new and compromising non-invasive technique for evaluating volume status in trauma patients. However, its usefulness and cut-off value remains a challenging dilemma to be determined. In most studies, the researchers determined IVC collapsibility index (IVCci) values more than 50% for predicting hypovolemic shock status. In this study, in order to find a reliable cut-off value for IVCci, the authors compared IVCci with CVP measures less than 8 cmH₂O (as an available criterion for hypovolemic status) in trauma patients presented to our Emergency Department (ED).

Methods:

The authors carried out a prospective observational single-group cohort study on trauma patients with at least class II of hemorrhage who had indication for inserting Central Vein Catheter (CVC) in ED and presented between April 2011 and February 2012. Cases with a history of congestive heart failure, renal failure, using negative inotropic agents, inconclusive ultrasonography study for IVCCi and presence of any contraindication for CVC insertion were excluded. The patients assigned to those with CVP measures less than 8 cmH₂o and those with measures equal or more than 8 cmH₂o. IVC diameters during expiration and inspiration were measured by a curvilinear probe from the first 2 to 3 cm of abdominal IVC by a longitudinal approach.

Results:

During the study period the total number of patients presented to our ED with at least class II of hemorrhage was 121. After excluding 15 cases, the study performed on 106 patients. The mean age of two groups was 40.9±10.07 years without any significant difference among them.

Shock cases with CVP less than 8 cmH₂o had mean IVC diameters significantly different from those with CVP measures equal or more than 8 cmH₂o. During expiration, the mean IVC diameter was equal to 10.8±1.8 mm and it was 3.9±1.17mm during inspiration. In cases with CVP equal or more than 8 cmH₂o, these values were 18.3±2.02mm and 15.01±0.82mm respectively. Pearson correlation coefficient revealed a high negative correlation of CVP measures with IVCCi ($r=-0.78$, $P<0.001$). According to the receiver operating characteristic curve (ROC) analysis, the area under curve for IVCCi was 1 (100%) and the best cut-off value was 30.5%. By using the new cut-off value for IVCCi (30.5%) instead of previous one (50%) the sensitivity and negative predictive value increase (almost by 8% and 6.5% respectively) without any change in specificity (100%) and positive predictive value (100%).

Conclusions:

The authors believe that using 30.5% as a new cut-off value for IVCCi instead of 50% helps Emergency Medicine specialists to screen and manage hypovolemic trauma patients with CVP less than 8 cmH₂o better than the past.

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COMPARATIVE ASSESSMENT OF DIAGNOSTIC ACCURACY OF CT SCAN AND ULTRASONOGRAPHY IN THE DIAGNOSIS OF ACUTE APPENDICITIS AFTER THE APPLICATION OF THE ALVARADO SCORING SYSTEM

Monserrat Peña (1), Laila Cochon (1), Baez Amado Alejandro (2)

1. Emergency Department, CEDIMAT, Santo Domingo, Dominican Republic

2. Emergency Medicine, SENSEA Healthcare / CEDIMAT, Santo Domingo, Dominican Republic

Corresponding author: lailacochon@hotmail.com

Keywords: Appendicitis, Alvarado Score, Ultrasound

The objective of this study was to assess the diagnostic quality of computed tomography (CT) when compared to ultrasound (US) in the diagnosis of acute appendicitis using Alvarado risk score as a predictor of pretest probability and Bayesian statistical model as a tool to calculate posttest probabilities for both diagnostic test.

Stratification of the population was made using point scores attributed by applying the Alvarado score for the prediction of acute appendicitis. Scores of 1-4 were considered low risk, 5-6 intermediate risk and 7-10 were high risk. Each population was attributed a risk in percentage as follows: 30% risk as low probability, 66% intermediate and 93% high risk accordingly. Risk percentages deducted from the Alvarado score were then assigned as the pre test probability within the Bayesian nomogram. Likelihood ratios were calculated using sensitivity and specificity of both CT and US from a Meta analysis. Posttest probabilities of acute appendicitis were obtained after inserting Alvarado score as pretest probability and likelihood ratios into Bayesian nomogram. Absolute and relative gains were calculated comparing posttest probability. Absolute gain was defined as net difference between pretest and posttest probability. Relative gain was obtained as the percentage of absolute gain in pretest probability. Comparative absolute gain difference was the net percentage difference between CT and US.

A total of 4341 patients from 31 studies yielded a pooled sensitivity and specificity for diagnosis of acute appendicitis using US of 83% (95% CI: 78%, 87%) and 93% (95% CI: 90%, 96%) and 94% (95% CI: 92%, 95%) and 94% (95% CI: 94%, 96%), respectively, for CT studies. Calculated positive likelihood ratios (LR) for US was 12 and negative LR was 0.18; for CT +LR was 16 and -LR 0.06. Bayesian statistical modeling post test probabilities for +LR and low Alvarado risk results yielded a post test probability for US of 83.72% and 87.27% for CT, intermediate risk gave 95.88% and 96.88%, high risk 99.37% and 99.53 respectively. Comparative absolute gain difference between CT and US for low risk 3.55%, intermediate 1% and high risk 0.16%.

This Bayesian statistical data analysis demonstrated slight superiority of CT scan over US on Alvarado score low risk stratified subtypes, whereas no significant advantage was seen when evaluating intermediate and high risk patients. This study also demonstrated elevated accuracy of the Alvarado scoring in the assessment of acute appendicitis.

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BLUE PROTOCOL IN THE CRITICALLY PATIENTS

Mehmet Kocabiyik (1), A. Sadik Girisgin (2), Mehmet Ergin (2), Basar Cander (2)

1. Emergency Medicine, Corlu State Hospital, Tekirdag, Turkey

2. Emergency Medicine, Necmettin Erbakan University, Konya, Turkey

Corresponding author: sgirisgin@yahoo.com

Keywords: emergency ultrasound, critically ill patient, BLUE protocol

Aim: The aim is to investigate the effectiveness of 'lung ultrasound and BLUE protocol' in diagnosis and follow up in respiratory diseases.

Material – Method: The study group included 98 patients who presented Necmettin Erbakan University Meram Medicine Faculty Emergency Medicine Department and admitted to Critical Care Unit between 1 January to 1 December 2012. This is a prospective study. Ultrasonography was used to evaluate whether A and B lines, pleural sliding movement, alveolar consolidation and pleural effusion was present or not and make a diagnosis. Our diagnosis was confirmed by thorax computed tomography and chest X-ray results and evaluation of chest diseases specialists. The final diagnosis of both processes independent from each other were compared.

Results: The sensitivity and specificity of lung USG were shown that 90% and 96.1% for pulmonary oedema (n=20); 77.7% and 95.5% for chronic obstructive pulmonary disease (n=9); 88.8% and 100% for pneumothorax (n=27); 86.3% and 100% for pulmonary embolus (n=22); 85% and 96.1% for pneumonia (n=20), respectively.

Conclusion: In diagnosis of lung diseases, the lung USG was better than conventional chest X-ray and was helpful as well as thorax CT. USG could make fast diagnose in patient group. Each type of respiratory failure have specific sonographic findings. So that mistakes can be possible. As much more studies on lung USG and physicians who use BLUE protocol in their practice, the lung USG will be more valuable and included in guidelines so that it become a routine procedure in EDs.

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ACCURACY OF OPTIC NERVE SHEATH DIAMETER MEASUREMENT BY EMERGENCY MEDICINE RESIDENTS USING BEDSIDE ULTRASOUND

Isaac Bruck (1), Hussein Matari (2), Getaw Worku Hassen (1)

1. Emergency Department, Metropolitan Hospital Center, New York, United States

2. Radiology Department, Metropolitan Hospital Center, New York, United States

Corresponding author: drbruck@gmail.com

Keywords: Ultrasound, Intracranial Pressure, Optic Nerve Sheath

In the emergency room setting, elevated intracranial pressure (ICP) can be a sign of several life threatening illnesses related to trauma, infection, or pathologic anomaly such as meningitis, subdural hematoma, or space occupying masses. These patients pose a special challenge, because they may present with distracting injuries or altered mental status. Fundoscopic measurement of the

optic disc has historically been the non-invasive, bedside measure of choice for assessing ICP when a patient is unstable for lumbar puncture. Resident performance of fundoscopic evaluation has been notoriously imprecise. Ultrasound (US) measurement of the optic nerve sheath diameter (ONSD) offers a simple, fast, and indirect alternative.

This study investigates whether emergency medicine (EM) residents, after a short introductory course on ocular US, are able to measure the ONSD accurately by ultrasound when compared to a confirmatory imaging study, computed tomography (CT) scan. This study used the readily available LOGIQ e ultrasound machine from General Electric (GE) with a high-frequency linear array transducer to measure the ONSD in 61 patients who were scheduled for brain CT due to headache, altered mental status, or trauma in a single inner city emergency room. None of these patients were suspected to have elevated ICP a priori. MRI studies have demonstrated that an ONSD greater than 5.2mm is consistent with elevated ICP.

Subjects were placed in a supine position with the head of the bed flat. Tegaderm was used to cover each closed eye and an aqueous ultrasound gel was applied. The ONSD was measured 3mm behind the optic disc in 2-axis for each eye. All scans performed by residents were checked for technical adequacy by an RDMS-certified, fellowship-trained emergency ultrasonographer. Resident bedside US results were compared to the measurements obtained by a board-certified radiologist who read the ONSD from head CT scan reconstructions in coronal and sagittal plains.

We applied established statistical methods regarding agreement between two measurement techniques each of which have an uncertain amount of error, where one technique (CT scan) is considered to be the "standard", but is expensive, time consuming, or not always feasible to a second technique (US) that is more rapid, cost-effective, or suitable for a wider range of medical conditions. The confidence interval for the mean difference and the intra-class correlation coefficient (ICC) were then determined. ICC findings greater than 0.8 indicate almost perfect agreement between the measures. In our study, intra-class correlation coefficients for both the transverse and sagittal plane measurements were 0.83, suggesting excellent concordance between the CT and US. The confidence interval for the difference between the means was plus or minus 0.01 cm in both transverse and sagittal planes demonstrating a negligible observed difference between US and CT scan measurements overall.

Results of this study indicated that EM residents with a basic understanding of US principals and a short introductory course in ocular US can accurately image the ONSD as compared to CT scan measurements read by a board certified radiologist. The two techniques demonstrate significant correspondence warranting further study in a larger population of patient with normal ICP and confirmation in patient populations with clinical findings suspicious for elevated ICP. Further verification of this bedside US technique may demonstrate its utility in the

rapid diagnosis and treatment of patients with elevated ICP prior to LP or CT scan in the ER and trauma settings.

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PUZZLE IN BLUNT CHEST TRAUMA - HEMOTHORAX OR PLEURAL EFFUSION? CAN WE MAKE A DIFFERENTIATION WITH THEIR CT ATTENUATION VALUES?

Ying Chieh Huang (1), Ju-pin Wu (2), Joseph Liang (2)

1. Department of Emergency Medicine, Chiayi Christian Hospital, Chiayi city, Taiwan

2. Department of Radiology, Chiayi Christian Hospital, Chiayi city, Taiwan

Corresponding author: Galaxy.bear@msa.hinet.net

Keywords: hemothorax, pleural effusions, computed tomography

Introduction: Hemothorax should be suspected in any patient with blunt chest trauma, especially when there are positive findings in physical exam, chest X-ray, or ultrasonography (eFAST). Because of better sensitivities, eFAST has become indispensable in modern emergency departments. However, not every pleural fluid in trauma patients is a hemothorax. Diagnostic thoracentesis can be used for definitive diagnosis; however, this procedure carries small but significant risks. The risk goes up in emergent, less-controlled trauma situations. Computed tomography (CT) is the standard imaging modality for major trauma patients. Fluids in the pleural cavity can be readily identified, and fresh blood has higher attenuation values than pleural effusions.

Objective: To determine how good the CT is to distinguish hemothorax from pleural effusions.

Methods: This retrospective study included patients underwent CT for chest trauma or medical pleural effusions from January 2010 to March 2013. We enrolled the patients with definitive diagnoses from the gross appearance or laboratory examinations on the drained fluid. We classified the patients into trauma and non-trauma, and stratified non-trauma patients into empyema and pleural effusion groups. Patients with missing data or transferred from other hospitals were excluded. We chose 3 slices of CT scanning containing the largest amount of fluid. Experienced radiologists measured the average Hounsfield unit (HU) values of fluid, and the blood within the aorta to obtain the pleural/aortic (P/A) ratio. We used one-way ANOVA to analyze differences in HU values and P/A ratios between patient groups. Receiver operating characteristic (ROC) curves were constructed to determine the validity of HU values and P/A ratios and optimal threshold values to identify the hemothorax. Pearson correlation coefficients were reported to associate the measured CT attenuation of intra-aortic blood with the level of Hb and Hct. In trauma patients, associated injuries revealed on the chest CT were recorded.

Results: We enrolled 38 cases of traumatic hemothorax, 73 empyema, and 78 pleural effusions. Thirty-three hemothorax were resulted from motor vehicle crashes, and 5 came from falling. In patients with pleural effusions, there were 31 cancer related, 17 tuberculosis, 10 exudates of undetermined cause, 5 heart failure, 5 transudates of undetermined cause, 3 uremia, 2 cirrhosis, 1 hypothyroidism, and 1 heart/kidney failures. All empyema were complications of preceding pneumonia. In hemothorax, the mean attenuation (29.2 HU; 95% CI: 26.5~32.0 HU) and P/A ratios (87.3%; 95% CI: 77.0~97.6%) were significantly higher than those of empyema (12.0 HU; 95% CI: 10.6~13.4 HU)(33.0%; 95% CI: 28.5~37.5%)($P < 0.001$) respectively. The HU values and ratios of empyema were significantly higher than that of pleural effusion (6.8 HU; 95% CI: 6.1~7.5 HU)(21.2%; 95% CI: 16.9~25.5%)($P < 0.001$) respectively. Both the HU values and P/A ratios can differentiate hemothorax from empyema well with area under ROC curve of 0.83 (95% CI: 0.79~0.88)(HU & P/A ratio). The optimal threshold values for hemothorax were

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differentiate hemothorax from pleural effusion, excellent validities were obtained with area under ROC curve of 0.94 (95% CI: 0.91~0.96) for HU values, and 0.92 (95% CI: 0.89~0.95) for P/A ratio. The optimal threshold values for hemothorax were \geq 14.9 HU (sensitivity: 80.7%; specificity: 94.0%) and \geq 42.9% (sensitivity: 77.2%; specificity: 93.6%). A statistically significant correlation was found between HU values and the levels of Hb and Hct ($p < 0.001$) respectively. In the 38 trauma patients, CT revealed bony fractures in 37, lung contusions in 23, liver injuries in 5, spleen injuries in 5, aortic injuries in 2, and diaphragm tears in one. Every patient had at least one site of injury in addition to the hemothorax revealed by the CT.

Conclusion: CT attenuation values and P/A ratio are distinguishable between hemothorax, empyema, and pleural effusion. Associated injuries were revealed by the chest CT in all of our hemothorax patients.

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THE FREQUENCY OF ALTERNATE DIAGNOSES FOUND IN THE EVALUATION OF APPENDICITIS

Alex Troncoso (1), Brian Walsh (1), Kristen Walsh (1)

1. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: briwalsh10@aol.com

Keywords: Appendicitis, Ultrasound, Radiology

Objective: Concerns about radiation exposure have changed the way children with abdominal pain are evaluated in the emergency department (ED). In order to evaluate for appendicitis, an appendix ultrasound (US) is often the initial imaging modality of choice. Although there are inherent limitations of the test's ability to identify

appendicitis, US frequently identifies other etiologies of pain that may have been overlooked on CT scan. We sought to determine the rate of alternate diagnoses identified as the cause of abdominal pain found on US, Methods: Design: Retrospective cohort. Setting: A community teaching hospital with an emergency department (ED) with 85,000 visits per year. Population: Consecutive ED patients less than 21 years old that had an appendix US over an 12-month period. The radiologists' interpretations were reviewed and each interpretation was classified by whether the appendix was visualized or not, and whether an alternative pathology that could account for the patient's symptoms was identified. Patient demographics for those with alternative diagnoses were determine and compared, and the rate of alternative diagnoses was calculated with 95% confidence intervals (CI).

Results: In the 12-months study period, 441 appendix US were performed in the ED. The appendix was identified as normal or abnormal in 26%, not visualized in 69%, and equivocal or borderline in 5%. The average age of patients that had an appendix US was 11.7 years and 41% were male. Alternative diagnoses were found in 18% (CI: 15, 22) of patients. The average age of patients with alternative diagnoses found was 11.4 years (Difference = 0.3 years, CI: -0.7, 1.3 NS) and 41% (Difference = 0, NS) were male. Of the interpretations in which alternative diagnoses were identified, 2 were in borderline/equivocal interpretations, 14 were in seen with a normal appendix, and 65 were seen when the appendix was not visualized. 65 of the alternate diagnoses were lymph nodes, and 7 had adnexal cysts. 4% (CI: 0, 8) of the patients with alternate diagnoses were diagnosed with appendicitis with follow-up studies.

Conclusion: Almost one-fifth of patients who present with abdominal pain and have an appendix US will be found to have an alternative diagnosis, usually lymph nodes. Despite an alternative diagnosis being identified, at least 4% of patients ultimately were diagnosed with appendicitis. Although frequently helpful in making a diagnosis of appendicitis, ED physicians need to understand the limitations of the test, even when alternate diagnoses are suggested.

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IN THE DIAGNOSIS OF ACUTE AORTIC DISSECTION, IS THE FINDING OF AORTIC CALCIFICATION BY SIMPLE CHEST X-RAY USEFUL?

Yuichirou Yonemoto, Kenichi Kano, Shigenobu Maeda, Takashi Matsumoto, Hideya Nagai, Makoto Sera, Shinsuke Tanizaki, Hideyuki Matano, Hiroshi Ishida

Emergency department, Fukui Prefectural Hospital, FUKUI, Japan

Corresponding author: pxt01173@nifty.ne.jp

Keywords: aortic calcification of aortic dissection, chest X-ray, t-PA

BACKGROUND AND STUDY AIMS

While tissue plasminogen activator (tPA) has a potential therapeutic effect for patients with acute ischemic stroke, it increases the chance of hemorrhage. Its use for patients with unrecognized aortic dissection has been reported, occasionally resulting in death. Six percent of patients with acute aortic dissection also have ischemic stroke, and 10 to 50% of patients with aortic dissection do not present with chest or back pain, making the diagnosis often challenging. Widened mediastinum on chest radiography (CXR) is a well-known finding in aortic dissection, but it is dependent on the patient positioning. We thus analyzed the potential usefulness of aortic calcification, which is assumed to be less dependent on patient positioning, to rule out coexisting aortic dissection in patients with suspected ischemic stroke.

PATIENTS AND METHODS

Objectives: This is a retrospective analysis of 206 patients (125 men and 81 women) aged from 33 to 96 years (median age 72.5), who were diagnosed with Stanford type A or B aortic dissection in Fukui Prefectural Hospital emergency department from January 2008 to December 2009.

Methods: We defined calcification as ones detected on the CXR without changing the window of the image. Calcifications detected only with window manipulation or minor opacities indistinguishable from overlying structures were not considered calcifications.

Results

Of 206 patients analyzed, 113(54.9%) had Stanford type A dissection, and 93 (45.1%) had type B dissection. 39 patients (18.9%) had calcifications on CXR.

Discussions

Contrary to our assumption, not every patient with aortic dissection had aortic calcification on CXR. In some patients, especially among young population, we could not detect calcification on CT scans either. Findings on CT scan did not correspond to those on CXR, especially if CXR was obtained at the bedside. Diagnostic difficulty arises in the presence of overlying bony structures or minor opacities barely identifiable with window manipulation, decreasing the inter-rater accuracy.

20% of patients with aortic dissection have normal CXR, making it impossible to rule out coexisting aortic dissection solely with CXR in cases where ischemic stroke is suspected. Difference in blood pressure on upper extremities and CXR should be obtained whenever possible before tPA is administered. (Stroke 1999; 30:477) CT scan with contrast enhancement and/or cervical ultrasound should be considered if aortic dissection is suspected based on history, physical exam, laboratory tests, and CXR.

Conclusion

Calcification of aorta on CXR is not a reliable sign for the diagnosis of aortic dissection. Comprehensive diagnostic approach with history, physical examination, blood test, and chest radiography is required to make the accurate diagnosis. CT scan with contrast enhancement is a reliable diagnostic tool but is not available for every patient given the time-dependency of thrombolytic therapy. More studies are needed assessing the usefulness of other diagnostic tools such as cervical ultrasound or cervical MR angiography.

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ULTRASOUND GUIDED DIAGNOSIS OF "ACHILLES TENDON RUPTURE" BY ED PHYSICIANS.

M Azam Majeed (1), David Yeo (2)

1. Emergency department, University Hospitals, Birmingham., Birmingham, United Kingdom

2. emergency department, university Hospitals, Birmingham., birmingham, United Kingdom

Corresponding author: mazammajeed@hotmail.com

Keywords: Achilles tendon rupture, emergency department physicians, ultrasound guided

Background:

The Achilles tendon is the strongest and thickest tendon in the body, connecting the gastrocnemius, soleus and plantaris to the calcaneus. It is approximately 15 centimeters (5.9 inches) long and begins near the middle portion of the calf. Contraction of the gastrosoleus plantar flexes the foot, enabling such activities as walking, jumping, and running. The Achilles tendon is the most commonly injured tendon. Rupture can occur while performing actions requiring explosive acceleration, such as pushing off or jumping.

Bedside ultrasound changes the entire approach in which patient care is conducted in ED. Traditionally we examine the patient and make a list of differentials and then to confirm the main one, we sometimes need imaging. The Emergency Department Physicians (EDP) can do the exam and interpret it without having to send the patient to someone else.

Objective:

To evaluate the sensitivity and specificity of bedside ultrasound in diagnosing ruptured Achilles tendon.

Method:

We conducted a prospective observational study over 16 months period. We had a convenience sample of 18 patients. All these patients had bedside ultrasound done in the ED. They had a confirmatory ultrasound by the radiologists, who were blinded to the ED report. All patients had given a verbal consent.

Results:

We had 18 patients, 2 males and 16 females. The mean age was 43.5 years.

Sensitivity 100% 95% CI= 54-100%

Specificity 100% 95% CI=73.35-100%

Negative predictive value 100% 95% CI=73.35-100%

Positive predictive value 100% 95% CI= 54-100%

Conclusion:

Ultrasound has a major impact on patient care and workflow in the ED by changing the patient evaluation strategy. Above results are extremely encouraging that bedside ultrasound in the hands of ED physicians is very accurate. Imaging at the bedside provides information that will help ED physicians determine life-threatening events. Ultrasound provides immediate feedback; it goes way

beyond patient monitoring. Patient care is greatly improved by performing imaging at the bedside. By performing a cursory ultrasound exam, the ED physicians can relieve patient anxiety. Ultrasound is a safer and faster investigation and improves patient experience.

Limitations:

Small and single center study.

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ALLERGIC REACTION TO ULTRASOUND GEL

Katja Wüstefeld (1), Maritza Oostenen (1), Nijboer-Oosterveld Jacqueline (2)

1. Emergency Department, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

2. Radiology Department, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

Corresponding author: katjawustefeld@yahoo.com

Keywords: Ultrasound, Allergy, Radiology

Introduction

Some people see ultrasound as the new stethoscope for the Emergency Physician. It is used in many different ways: from focused sonography in trauma patients, echocardiography integrated in ACLS protocols, to ultrasound guided nerve blocks and central line placement. We describe a patient with a type I allergic reaction to ultrasound gel.

Case Description

A 22-year-old man presented with a 2-day history of intermittent abdominal pain in the right lower abdomen, nausea and vomiting. His stools were watery with blood since 1 day. His medical history noted an inguinal hernia repair.

On physical examination he did not look ill, had no fever and his vital signs were normal. His right lower abdomen was tender, with signs of an acute abdomen. Laboratory results showed CRP 10 mg/l and Leuko's 7,5x10⁹/liter.

Abdominal ultrasound was performed, but the appendix could not be visualized. Computed tomography (CT) scan of the abdomen was advised by the radiologist.

The Emergency Physician decided to have the patient reviewed by a surgeon instead.

During the physical examination of the surgeon the patient complained of swelling and itching of his abdominal skin. The surgeon noticed a well-demarcated erythema on the abdomen. This erythema confined the exact area that had been covered by the ultrasonic gel. The surgeon did not find signs of an acute abdomen.

Discussion

The patient had a type I, IgE-mediated hypersensitivity to the ultrasound gel. This type of allergy requires sensitization to a specific allergen. The exact ingredients of the ultrasound gel are not mentioned on the product information. But all preservatives, scents and colorants can cause allergic reactions to the skin. Many of these

substances are used in the cosmetic products as well. When requested, the patient told he has had skin reactions when using cosmetic products in the past.

While a special ultrasound gel is often used, plain water is a good conductor and alternative.

Conclusion

Allergic reactions to ultrasound gel are rare. Erythema, local edema and pruritus are the most common clinical features of the IgE-mediated contact dermatitis. There are no cases of anaphylaxis reported. Water could be an alternative for patients with a known hypersensitive skin for cosmetic products and ultrasound gel.

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ANALYSIS OF CEREBRAL OXYGENATION USING NEAR INFRARED SPECTROPHOTOMETRY (CEREBRAL OXIMETRY) IN CO INTOXICATION: A PRELIMINARY STUDY

A Kalkan (1), O Bilir (1), G Ersunan (1), O Yavasi (1), K Kayayurt (1), M Ziyen (1), A Coskun (1)

1. Department of Emergency Medicine, Recep Tayyip Erdogan University Faculty of Medicine, Rize, Turkey

Corresponding author: drasimkalkan@hotmail.com

Keywords: carbon monoxide, cerebral oximetry, cerebral oxygenation

ABSTRACT

Introduction

Near infrared spectroscopy (NIRS) -based technology is a noninvasive optical technique used to monitor cerebral oxygenation. The aim of this study was to evaluate the applicability of cerebral oximetry in carbon monoxide (CO) intoxication by analyzing cerebral oxygenation in patients exposed to CO gas.

Methods

We conducted a prospective cohort study. Patients' cerebral saturation (rSO₂) was measured using near infrared spectroscopy on an INVOS 5100c (cerebral oximetry) device and minimum and maximum cerebral oximetry values from the right and left frontal regions at presentation to the emergency department (ED) were recorded. Repeat rSO₂ values were measured when blood CO levels returned to normal, and the results were compared using the Wilcoxon test.

Results

A total of 16 patients with CO gas exposure presented to the ED but of these, 10 were eligible for the study and were included in the statistical analysis. Mean blood carboxyhemoglobin (CO-Hb) levels were 29.3% ± 6.7%. rSO₂ values in the right frontal region were measured 72.2 ± 3.4 at presentation to the ED and 59.0 ± 4.0 before discharge. Left frontal values were 70.6 ± 4.2 at presentation to the emergency department and 60.9 ± 5.1 before discharge (p=0.005 for both).

Conclusion: The results of this preliminary study suggest that cerebral oximetry may be a good monitorization technique in patients exposed to CO gas. In our opinion, cases of CO intoxication applying to the emergency department can be monitored with cerebral oximetry, a non-invasive technique.

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DIAGNOSIS OF HEMOTHORAX: SONOGRAPHY VERSUS CHEST X-RAY

Mohammad Ali Fahimi (1), Neda Fahimi (2), Hamid Reza Mehryar (3), Mohammad Taghi Talebian (4), Reza Taslimi (5)

1. Emergency medicine department of Ahvaz, Jundishapur University of Medical Sciences, Ahvaz Imam Khomeini Hospital, Ahvaz, Iran, Islamic Republic of

2. Sosan-tarashok center-izeh, Ahvaz, Jundishapur University of Medical Sciences, Ahvaz, Iran, Islamic Republic of

3. Department of Emergency Medicine, Faculty of Medicine, Urmia University of Medical Sciences, Urmia Imam Khomeini Hospital, Urmia, Iran, Islamic Republic of

4. Emergency medicine department of Tehran University of Medical Sciences, Tehtan Imam Khomeini Hospital, Tehran, Iran, Islamic Republic of

5. Emergency medicine department of Tehran University of Medical Sciences, Tehran Imam Khomeini Hospital, Tehran, Iran, Islamic Republic of

Corresponding author: Fahimi76@yahoo.com

Keywords: sonography, hemothorax, diagnosis

Background: Diagnosing hemothorax after blunt trauma may be aided by emergency department ultrasound (EDUS). This study was performed to evaluate the sensitivity, specificity, and accuracy of the EDUS with Gold standard.

Methods: This study was performed prospective & cross sectional. The patient who came to ED of Imam Khomeini Hospital in Tehran -Iran, from June 2009 to December 2010, investigated by the EDUS during the primary survey, THEN CXR was done. Chest CT scan & or Chest Tube, depend on their indication, was done.

Gold standard for hemothorax was positive result of any of:

1) CHEST CT scan or 2) CHEST TUBE or 3) FOLLOW UP

RESULT: 81 patient enrolled in the study.

71 case (87/7%) was male & 10 case (12/3%) was female. Median Age was 35 year.

The diagnostic sensitivity, specificity and accuracy for EDUS and radiography were 87.5% versus 64.3% (p < 0.001), 98.5% versus 93.7% (not significant) and 96% versus 88.3% (p = 0.005), respectively.

Conclusion: EDUS in diagnosis of hemothorax in part of eFAST can be complementary of primary survey-stage C (Circulation) of ATLS. eFAST is accurate (96%) & rapid (during 2-4 min); can rapidly and accurately diagnose haemothorax

and is a valuable tool to augment the immediate clinical assessment of these patients.

ATLS:Advanced Trauma Life Support

ED:Emergency Department

CXR:Chest-x-ray

EDUS:Emergency department ultrasound

eFAST:Extended Focused assessment sonography for trauma

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ACCIDENT AND EMERGENCY CHEST X-RAY REPORTING TIMES. ARE WE ADHERING TO THE NATIONAL IMAGING BOARD GUIDELINES?

Joanna Aldoori (1), Richard Robinson (2), David Shaw (2), Rubaraj Jayarajasingam (2)

1. Medical School, University of Leeds Medical School, Leeds, United Kingdom

2. Radiology, Mid Yorks NHS Trust, Wakefield, United Kingdom

Corresponding author: Rubaraj@doctors.org.uk

Keywords: Chest X-ray, Reporting times, National imaging board guidelines

The National Imaging board published their guidelines, "best practice guidelines for radiology reporting times" in 2008. They recommend that imaging services should aim to provide reporting turn around times of "within the same working day" for accident and emergency medicine (A & E) and within thirty minutes for urgent cases. They state that 90% achievement is reasonable.

We audited our radiology practice, reviewing all chest X-rays requested by the accident and emergency department over a five day period in April 2012.

The aims of the audit were two fold. Firstly to assess the turn around time, the time from the X-ray being performed to the formal report being available to the referring clinician. Secondly to compare the formal radiology report with the accident and emergency medicine clinicians provisional report.

In our department reporting radiographs work from 8 am to 8 pm, therefore a working day was calculated at 12 hours. The system we use is the Computerised Radiology Information System (CRIS) in which all of the A & E X-ray requests as well as all of the A & E notes are scanned in to and therefore available for the radiographer or radiologist reporting the chest X-ray.

Over the 5 working days, 269 chest X-rays were requested from A & E. The mean turn around time from the chest X-ray being requested until the formal radiology report was 200 hours (17 working days). The turn around time ranged from the formal report being available in a matter of minutes to 590 hours (50 working days).

When comparing the A & E provisional report to the formal radiology report, of the 269 chest X-rays requested only 47 (17.5%) had a provisional A & E report. Of these cases, 28 (59.6%) had concordance between the provisional and

formal report. Of the 269 chest X-rays, 145 (54%) were normal, which raises the question were all chest X-rays clinically indicated?

Based on our findings we recommend that A & E X-ray requests should be made upon sound clinical indications. A & E clinicians should document and record all X-ray findings. The radiology department needs to improve the turn around time to meet the national target of reporting A & E X-ray requests within 12 hours as this has implications to patient safety. We aim to do this by more dedicated plain film reporting time during the normal working day.

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INFERIOR VENA CAVA DIAMETER CORRELATES WITH CENTRAL VENOUS PRESSURE IN INTUBATED PATIENTS: A PROSPECTIVE RANDOMIZED TRIAL.

Sinan Karacabey (1), Erkman Sanri (1), Ozlem Guneyysel (1)

1. emergency department, Lutfi Kirdar Kartal Education and Research Hospital, istanbul, Turkey

Corresponding author: karacabeysinan@yahoo.com

Keywords: Inferior vena cava, central venous pressure, ultrasonography

AIM: Determination of volume status is crucial in treating acutely ill patients. We used to evaluate hemodynamic status of critically ill patients in the emergency departments, focusing on the correlation between inferior vena cava diameter (IVC), collability index (IVC-CI) and central venous pressure (CVP).

STUDY DESIGN: This study was a proespective study in an education and research hospital. Ultrasonography was performed on 83 intubated patients (age 73,61±11,27) with monitored CVP's. The IVC diameters were measured during the respiratory cycle and IVC-CI were calculated.

RESULTS: Mean IVC diameter for all patients were 14,40 (14,80±5.08) at the end of inspiration and 18,30 (18.81±4.69) at the end of expiration. The mean calculated caval index for all patients were 0,14 (0,21±6,72). The mean CVP of all patients were 9,50 (10,14±6,72).

There was a strong correalation between IVC measurement at the end of inspiration and CVP (p=0,001). There was no correalation between IVC measurement at the end of expiration and CVP (p>0,05). There was significant correalation between IVC-CI and CVP (p=0,001)

CONCLUSIONS: In this study we found a strong correlation between IVC diameters, IVC-CI and CVP. Therefore, sonographic determination of IVC diameter seems useful in the early assessment of fluid status in intubated patients.

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ROLE OF EMERGENCY ULTRASOUND IN NON TRAUMATIC ABDOMINAL PAIN EVALUATION

Serena Rizzini (1), Claudio Fossa (1), Fabrizio Fabris (2), Gianna Vettore (1), Stefania Vigolo (1), Franco Tosato (1)

1. Emergency Department, Azienda Ospedaliera di Padova, Padova, Italy

2. Department of Internal Medicine, Azienda Ospedaliera di Padova, Padova, Italy

Corresponding author: serena.rizzini@gmail.com

Keywords: Ultrasonography, Abdominal pain, Emergency department

Background: Non traumatic abdominal pain represents about 5 to 10% of emergency room (ER) access. The specific characterization of this symptom is a daily challenging situation for every emergency physician. Moreover the patients' description of their disorders is often nonspecific and unclear. In this context, in the last years the bedside abdominal ultrasonography performed by the emergency physicians has been introduced as a point-of-care and valid method to improve the chances of achieving a well-defined and rapid diagnosis and consequently assessing appropriate diagnostic and therapeutic measures.

Objectives: The objectives of our study were: perform an epidemiologic investigation on non traumatic abdominal pain in emergency department (ED) of the Azienda Ospedaliera di Padova during the 2011 and evaluate the role of bedside emergency ultrasound (EUS) performed by emergency physicians in patients presenting to emergency room with this kind of symptom.

Materials and Methods: For the epidemiologic analysis, using the Qlik software, we calculated retrospectively the number of accesses in our ED during 2011 stratified for abdominal pain at triage. For these patients demographic analysis (sex and age), time of stay in ED and diagnosis at discharge were evaluated. To assess the role of ultrasonography performed by emergency physicians we filled a questionnaire during first visit of patients complaining of non traumatic abdominal pain in the period between November 2011 and July 2012. The questionnaire considered the diagnostic hypothesis, the diagnostic and therapeutic approach and the confidence level on the supposed diagnosis (using the visual analogic scale method from 1 to 10), both before and after the EUS examination. Finally, an opinion on the utility of ultrasonography was required to the physicians. We reviewed all specific patients' medical charts, results obtained from questionnaires and gold-standard diagnosis (gained from surgical and pathological report and from other imaging techniques such as ultrasonography performed by radiologist, computed tomography and magnetic resonance imaging), achieved after discharge from ED during the follow-up. We also compared this group's data with a group of controls' ones, composed of subjects complaining of non traumatic abdominal pain, who didn't undergo emergency ultrasound.

Results: In our analysis the percentage of accesses motivated by non traumatic abdominal pain resulted almost 6,7% of total in the emergency department of Azienda Ospedaliera di Padova in 2011. These patients' average length of stay in ED is longer than that of the other people presenting to ER, proving the need of a larger diagnostic work-up for patients complaining of abdominal pain. The most common diagnosis was undifferentiated abdominal pain (UDAP), amounting to 35,7% of our total patients' sample. The use of bedside emergency ultrasonography during the patient's first visit decreased the need to resort to this type of diagnosis to 20,3%, in favor of more specific one. The bedside emergency ultrasound, moreover, allowed to shorten the length of time of stay in ER (approximately 30-113 minutes less when EUS has done), to modify the diagnostic and therapeutic approach (in about 55% of the cases) and to increase significantly the confidence level of diagnosis (average score before EUS: 6,5 after EUS: 7,9) among our patients' sample. We achieved the same results also in the sub-analysis, led in eight selected patients' sub-groups of our sample, such as people with suspected kidney or biliary disease, clarified diagnosis of kidney or biliary disease, suspected UDAP, suspected gastric disease, suspected female adnexal disease and suspected acute appendicitis. Finally, the rate of agreement between the emergency ultrasound diagnosis and the gold-standard one was 90,1% (varying between 69,7% and 100% among the different sub-analysis).

Conclusions: Non traumatic abdominal pain is one of the most frequent reasons for achieving the ER. The bedside abdominal ultrasonography performed by emergency physicians proved to be an extremely useful imaging technique in these patients' diagnostic work-up, improving all the considered parameters and maintaining an excellent diagnostic accuracy.

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FAST IS A SENSITIVE AND SPECIFIC TOOL FOR ASSESSING INTRA ABDOMINAL FREE FLUID IN TRAUMA PATIENT!

Nakul Chandan (1), James Cheshire (1), M Azam Majeed (2)

1. emergency department, university Hospitals, Birmingham., birmingham, United Kingdom

2. Emergency department, University Hospitals, Birmingham., Birmingham, United Kingdom

Corresponding author: mazammajeed@hotmail.com

Keywords: FAST, Trauma, bedside ultrasound

Background:

Bedside ultrasound (US) in the Emergency Department (ED) is a fast and accessible tool for clinical evaluation 1. Initially a technology utilized in the 1980's for the evaluation of the trauma patient (the FAST exam) 2, 3, 4 ultrasound in the

hands of emergency physicians has now rapidly expanded to include the imaging of almost every body part for a variety of complaints. The goal of emergency US is to answer a focused clinical question in a timely manner. Unlike radiologists and sonographers, emergency physicians do not seek to perform a comprehensive and time consuming evaluation of an organ or body system. Rather, US is utilized in the ED as an extension of the physical exam – a diagnostic and procedural aide. The hall mark of using US is it's the ability to answer an important clinical question in a few minutes that are spent at the bedside. A feature that

Objective:

We decided to compare FAST with CT to compare the results of these findings and determine how sensitive and specific FAST is in comparison with CT.

Method:

- We did the retrospective analysis of the notes in trauma patients and compared the results of the two.

Inclusion:

All trauma patients presenting with major trauma were included.

Exclusion:

Patients < 16yrs were excluded.

Settings:

Study was conducted at the ED of University Hospitals Birmingham.

Gold standard:

Whole body CT.

Results:

We had 454 patients who were admitted with Major trauma from Nov 2011 to April 2012. 45 patients had FAST done in ED resuscitation room. Among those 43 patients (96%) had negative scan and 2 patients (4%) had a positive scans.

Sensitivity 100.00 %

95% CI: 19.29 % to 100.00 %

Specificity 100% 95% CI 92-100%

PPV 100% 95% CI: 19.29 % to 100.00 %

NPV 100% 95% CI 92-100%

Discussion:

Ultrasound performed by emergency physicians is rapidly becoming 'standard of care'. With the recent mandatory inclusion of ultrasound training as part of the emergency medicine curriculum, it is a skill that all of us will need to eventually adopt. The scope of emergency ultrasound is also developing. From accepted uses such as trauma to the less conventional role in estimating intracranial pressure 1, there is no doubt that ultrasound is a rapid and safe diagnostic and procedural tool.

Our results are extremely encouraging and are not different from other published studies^{2,3,4}.

Our study has got its limitations, especially the number is small and its single center.

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IS THERE ANY RELATIONSHIP BETWEEN THE NONSPECIFIC INFLAMMATION MARKERS AND THE PRESENCE OF PATHOLOGICAL FINDINGS DETERMINED IN THE ABDOMINAL-PELVIC CTSCANS OF THE PATIENTS WITH NON-TRAUMATIC ACUTE ABDOMINAL PAIN?

Nalan Kozaci (1), Mehmet Oguzhan Ay (2), Suleyman Cetunkunar (3), Gokhan Soker (4), Burcak Basbug Erkan (5), Alper Celikdemir (2), Salim Satar (2)

1. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey

2. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

3. General Surgery Department, Adana Numune Education and Research Hospital, Adana, Turkey

4. Radiology Department, Adana Numune Education and Research Hospital, Adana, Turkey

5. Statistics Department, Middle East Technical University, Ankara, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Acute abdominal pain, abdominal-pelvic CT, C-reactive protein

Background: The usage of abdominal-pelvic CT (Computed Tomography) in patients with abdominal pain is increasing nowadays. The reasons such as excessive exposure to ionizing radiation and complications due to the intravenous contrast materials restricts the usage of CT. For this reason, it is very important to determine in which conditions abdominal-pelvic CT will be useful. In this study, we aimed to determine the possible relationship between the presence of pathological findings detected in abdominal-pelvic CT and the nonspecific inflammation markers such as CRP, WBC, and neutrophil levels in patients admitted to emergency department with acute abdominal pain.

Materials and Methods: The patients admitted to the Department of Emergency Medicine in Adana Numune Education and Research Hospital between 01.01.2012-31.12.2012 due to the abdominal pain and who have a intravenous contrast-enhanced abdominal-pelvic CT scan were included to this retrospective study. CRP, WBC, neutrophil counts of the patients were recorded on standard data entry form. Abdominal-pelvic CT images obtained from hospital records were evaluated by

experienced radiologists. SPSS 17.0 statistical software was used for statistical analysis of the data obtained.

Results: We found a statistically significant correlation between the presence of the pathological findings determined in abdominal-pelvic CT images and CRP, WBC, neutrophil levels. Positive pathological findings were found in the CT images of the patients with CRP > 0.8 mg / dl (sensitivity 78.33%, and specificity 98%), WBC > 12.91 103/uL (sensitivity 48.3%, specificity 86%), neutrophils > 8.78 103/uL (sensitivity 56.67%, specificity 86%). The findings of inflammation in CT images and the length of hospital stay of the patients were higher due to the more higher levels of CRP.

Conclusions: We recommended abdominal-pelvic CT imaging for patients admitted to the emergency department with acute abdominal pain, and who have blood levels of C-RP > 0.8 mg / dl, WBC > 12.91 103/uL, neutrophils > 8.78 103/uL.

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LUNG AND INFERIOR VENA CAVA COMBINED ULTRASOUND FOR ACUTE DYSPNEA IN THE EMERGENCY DEPARTMENT

Catalin-Marius Ilea (1), Gabriela Nagy (1), Adela Golea (1), Radu Badea (2)

1. Emergency Department, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, Cluj-Napoca, Romania

2. Medical Imaging Department, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, Cluj-Napoca, Romania

Corresponding author: ileactln@yahoo.com

Keywords: acute dyspnea, lung and inferior vena cava combined ultrasound, emergency department

Background: To diagnose the cause of acute dyspnea is one of the main challenge for the emergency department physicians who have to work with limited clinical information. Especially, acute heart failure (AHF) is challenging, since the clinical, radiographic, and laboratory parameters have variable diagnostic value due to heterogeneous set of clinical syndromes involved.

In the last few years, it has been reported that detection of pulmonary interstitial edema by lung ultrasound visualization of B-lines has a high diagnostic accuracy for differentiating cardiac-related acute dyspnea from that due to chronic obstructive pulmonary disease (COPD) or asthma in the emergency department (ED). But, despite being very sensitive, B-lines are not specific for cardiogenic pulmonary edema, therefore differential diagnosis with acute lung injury (ALI), acute respiratory distress syndrome (ARDS) or bronchopneumonia using only the lung ultrasound can be very difficult. Another way to assess the presence of AHF is to evaluate the severity of volume overload by measuring the collapsibility of inferior vena cava (IVC) using ultrasonography.

In this present work, we are studying the potential value of rapid evaluation by lung and inferior vena cava ultrasound for differentiating AHF from primary pulmonary disease in patients with acute dyspnea in ED.

Methods: This is an on-going prospective study started in January 2013 in the ED of University County Hospital Cluj-Napoca. By now was enrolled 30 patients (17 women) between 55 and 82 years old admitted to the emergency room of our hospital for acute dyspnea. Within 25 minutes of admission, all patients underwent conventional physical examination, ECG, rapid ultrasound (lung and inferior vena cava ultrasound) examination and routine laboratory tests and then the chest X-ray in the emergency room. Patients who had acute dyspnea due to neither cardiac nor pulmonary cause or due to chest injury were excluded from the study.

The ED investigator who operated the ultrasound was unaware of the chest X-ray findings and medical history of each patient. Lung ultrasound was done by bilateral scanning of the anterior and lateral chest walls with the patient in the supine or sitting position. The chest wall was divided into 8 areas (2 anterior and 2 lateral areas per side), and 1 scan was obtained for each area. Lung ultrasound examination was considered positive if B-lines are found in two or more zones bilaterally of the eight zones assessed. Subsequently, ultrasound examination of the inferior vena cava (IVC) was done within 2cm of the IVC-right atrium junction. The maximum diameter (IVC max) was measured at the end-expiration and minimum diameter (IVC min) was measured at the end-inspiration. The IVC collapsibility index (IVC-CI) was calculated as (IVC max-IVC min)/IVC max. A positive IVC ultrasound examination, according to the definition in previous papers, needed an IVC-CI <50% at baseline.

The initial diagnosis as that acute dyspnea due to a cardiac etiology (AHF) was based on a positive lung ultrasound examination combined with positive examination on IVC ultrasound in the ED. The final diagnosis is considered to be the one from the ward where the patients were admitted, involving a cardiologist and/or a pneumologist, who were blinded to the results of the lung and IVC ultrasound at admission, independently reviewed each patient's medical records and classified them as having acute dyspnea due to AHF, a history of HF but acute dyspnea due to a non-cardiac cause, or non-cardiac acute dyspnea.

Statistical analyses: Quantitative variables were compared by using Student's t-test, and dichotomous variables were compared with the chi-square test. The sensitivity, specificity, negative predictive value, and positive predictive value were calculated according to standard definitions. Two-tailed P values of less than 0.05 were considered to indicate a statistically significant difference.

Results: The preliminary results show that the final diagnosis was acute dyspnea due to AHF in 16 patients, acute dyspnea due to pulmonary disease despite a history of heart failure in 7 patients, and acute dyspnea due to pulmonary disease in 7 patients. Lung ultrasound alone showed a sensitivity of 94.12% specificity of 53.85%, negative predictive value 72.73%, and positive predictive value of 87.50% for differentiating AHF from pulmonary disease. On the other hand, combined lung and IVC

ultrasound had a sensitivity of 94.12%, specificity 87.50%, negative predictive value of 87.50, and positive predictive value of 87.50%.

Conclusions: Our study suggests that rapid evaluation by lung and inferior vena cava combined ultrasound is more accurate for differentiating acute dyspnea due to AHF from that caused by primary pulmonary disease in the emergency department.

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DESIGN FOR SIX SIGMA IN DISASTER MEDICINE CURRICULUM DEVELOPMENT FOR EMERGENCY MEDICINE RESIDENTS

Jeffrey Franc (1), Colleen Kjelland (2), Angela Naismith (2), Manuela Verde (3)

1. Emergency Medicine / Disaster Medicine, University of Alberta / University of the Eastern Piemonte, Novara, Edmonton, Canada

2. Emergency Medicine, University of Alberta, Edmonton, Canada

3. Critical Care, University of the Eastern Piemonte, Novara, Novara, Italy

Corresponding author: jeffrey.franc@gmail.com

Keywords: curriculum design, six sigma, emergency medicine

INTRODUCTION: Although disaster medicine may be an important part of residency training in emergency medicine, many residency programs do not have a structured disaster medicine curriculum. Rather than simply designing a curriculum by consensus, use of the design for six sigma business process management technology – which emphasizes creation of product solution based on customer needs - may allow a more structured approach to curriculum design. The present study describes the use of design for six sigma to create a disaster medicine curriculum for emergency medicine residency training.

METHODS: The project team included two physicians with training and expertise in disaster medicine, and the assistant program directors from the two emergency medicine residency programs at the University of Alberta. The project followed the design for six sigma phases of Define, Measure, Analyze, Design, and Verify. During the Define phase, seven residents of the two residency programs attended a focus group to reveal their initial impressions of their needs for a disaster medicine curriculum. Ideas from the focus group were used to create a survey instrument. During the Measure phase, twenty residents completed the survey instrument. In addition, twenty-one residents completed a pre-test in disaster medicine to determine which areas were common gaps in knowledge. During the Analyze phase, data from the focus group was analyzed using a tree diagram, while pretest and survey data was analyzed using Pareto analysis. During the Design phase, results of the tree and Pareto analysis were used to design a curriculum. The Verify phase, which is now ongoing, will apply this curriculum to the next cohort

of residents. Further study the efficacy of the new curriculum by a questionnaire on resident satisfaction and changes on the pre and post test scores.

RESULTS: The focus group revealed that residents feel disaster medicine training is important and should receive more emphasis during the residency program. They also voiced a strong preference for independent study and a focus on exam preparation. In the needs survey, residents voiced a strong preference for four type of learning activities: computer simulation, seminars with a disaster medicine instructor, lectures, and sample exam questions. Pretest scores were highest for the topics of disaster management, definition of terms, and risk analysis, while scores were lowest for the topics of historical perspectives of disasters, psychosocial aspects of disasters, and philosophy of disaster medicine. The final curriculum includes: 1) yearly computer simulation emphasizing emergency department disaster management, 2) once yearly didactic presentation on disaster medicine at emergency medicine grand rounds, 3) a set of sample exam question modules that residents will complete independently during their Emergency Medical Services rotation, and 4) a seminar with a disaster medicine instructor to review problems with the written exam questions and perform a short practice oral exam. Content of the curriculum will be focused on addressing those areas most concerning on the pre-test instrument.

CONCLUSIONS: The design for six sigma technique was easily implementable for the creation of a new curriculum in disaster medicine. By providing a structured approach to definition, measurement, and analysis prior to design, the curriculum may be better suited to the needs of the residency training program. Further study is ongoing to verify its efficacy.

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ICED: INCIDENT COMMAND FOR EMERGENCY DEPARTMENTS: RESULTS OF A CUSTOMER SATISFACTION SURVEY FOR A NOVEL COMMAND AND CONTROL TOOL

Jeffrey Franc (1), Manuela Verde (2)

1. Emergency Medicine / Disaster Medicine, University of Alberta / University of the Eastern Piemonte, Novara, Edmonton, Canada

2. Critical Care, University of the Eastern Piemonte, Novara, Novara, Italy

Corresponding author: jeffrey.franc@gmail.com

Keywords: incident command system, emergency department, command and control

INTRODUCTION: Disaster management for emergency departments is often problematic. Although an organized system of command and control is often needed to manage the additional chaos brought on by the disaster,

emergency physicians are often ill prepared for the situation. Although several current systems exist for command and control structure, including Incident Command System (ICS) and Hospital Incident Command System (HEICS), these systems are extremely comprehensive, and simulation physicians often comment that the systems are too complex. The Incident Command for Emergency Departments (ICED) system represents a novel instrument for emergency department management during disasters. This simplified incident command system consists of an introductory text, a simplified organizational chart with only thirteen color coded positions, job actions sheet for each position, and a set of only five forms.

METHODS: A customer satisfaction survey was administered to four groups of participants of a computerized simulation program (SurgeSim, Edmonton, AB, Canada) to assess their satisfaction with ICED. Participants were given a short lecture (approximately 30 minutes) about the ICED system and then partook in a group simulation lasting approximately one hour where the ICED system was used for command and control. During the simulation, participants had access to the ICED documents including organizational chart, job action sheets, and forms. Following the simulation, participants completed a short questionnaire regarding the use of ICED during the simulation. The survey instrument consisted of five statements rated on a five-point Likert scale to assess perceived needs, nine questions rated on a seven point scale to assess satisfaction with the ICED product, and as series of open and closed ended questions regarding potential future product features.

RESULTS: Seventy-nine surveys were collected. This included 19 staff physicians, 50 residents, and 10 who did not specify occupation. Most participants agreed strongly with the statement: "An organized command-and control structure is needed during a disaster": 67/79 (85%) scored strongly agree while, while 5/79 (6%) scored agree. 71/79 (90%) respondents agreed that ICED had helped the group to manage the simulated disaster. 58/79 (73%) agreed that they would be comfortable using ICED in a true disaster, and 69/79 (87%) participants agreed that they would encourage their department to adopt the ICED system. Overall Satisfaction with the ICED

program was high, with 67/79 (85%) of participants scoring 5 or higher on the 7 point scale. Among the various components of the ICED system, the satisfaction score was highest for the job action sheet component (mean=5.7/7) and lowest for the introductory text (mean=5.2/7). The most frequently requested additional features were an electronic (tablet) based version of ICED program (29/79 participants)(37%), inclusion of positions outside the emergency department in the organizational structure (26/79)(33%), online training in ICED (25/79)(32%), and a longer training session in ICED (24/79)(30%).

CONCLUSIONS: The ICED system, a simplified version of incident command system, was well received by staff physicians and emergency medicine residents for use during a computerized disaster simulation. Potential development of an electronic tablet based version of the system, and inclusions of additional positions within the organizational structure may help improve the product.

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DISASTER DRILL FOR A HUGE NANKAI TROUGH EARTHQUAKE AND THE CONSTRUCTION OF A MEDICAL STAGING CARE UNIT ON A NAVY DESTROYER IN JAPAN

Youichi Yanagawa (1)

1. Emergency and Disaster Medicine, Juntendo University, Tokyo, Japan

Corresponding author: yyanaga@juntendo.ac.jp

Keywords: Disaster drill, Tsunami, military-civilian cooperation

Japan is located at the junction of four continental plates (North-American, Eurasian, Phillipian Sea and Pacific) and earthquakes frequently occur. Based on lessons learned from the Great East Japan Earthquake, the Japanese government re-estimated the damage that would occur from a huge Nankai Trough earthquake in the Pacific Ocean, which has historically occurred several times in Japan, and is predicted to occur again in the near future. The worst scenario for such a huge Nankai Trough earthquake would be that a magnitude 9-class quake would hit the central and western parts of Japan in the middle of the night in winter, followed by the generation of a massive tsunami along the Pacific coast. It was estimated that such a scenario could lead to up to 323,000 deaths in Japan, in addition to extensive damage and large numbers of injuries

to the survivors. The medical facilities located on the Pacific coast, especially in Kochi and Tokushima Prefectures, were also expected to be completely destroyed. Accordingly, the Japanese cabinet planned a large-scale disaster drill for the occurrence of a huge Nankai Trough earthquake and tsunami on September 1, 2012 for Disaster Prevention Day in Kochi, Tokushima and other prefectures. According to the Cabinet Office, about 1,300 people participated in the day's drills. The drill involved the dispatch of about 178 disaster medical assistance teams (DMAT) from all over Japan to the simulated quake-hit areas. Mock patients from damaged areas of Tokushima and Kochi Prefectures were transferred by helicopters to medical staging care units (SCU) at the two airports (Matsuyama and Takamatsu), Kochi University and a Japanese navy destroyer, the Ise, which was located near these prefectures. The medical SCU were temporary buildings intended to serve as intensive care units, mainly to collect the severely wounded or critically ill patients from the damaged area and to evacuate these patients to undamaged areas using a Japanese airforce plane or large helicopter. The SCU and air evacuation were managed by the DMAT, which were established after the Great Hanshin-Awaji earthquake of 1995. The DMAT are mobile, trained medical teams that can rapidly be deployed during the acute phase of a sudden-onset disaster. The average DMAT consists of two doctors, two nurses and one logistics person. Medical staffs of the DMAT commonly work at an emergency and trauma center of a disaster base hospital in peace-time. There were more than 1100 teams created by 2012. This drill was the first time when a SCU was built on a Japanese ship. The naval vessel was selected because there was a possibility that the existing medical facilities or airport could be either completely destroyed or not usable as a result of the earthquake and tsunami, while was a lesson learned from the Great East Japan Earthquake. Japan does not currently have hospital ships like the United States Navy. Moreover, Japan is surrounded by sea-like islands, so damage to the coast by an earthquake and tsunami could occur all over Japan. The Ise is a helicopter carrier ship, and is the largest vessel the Japanese Navy has. The general characteristics of the destroyer include a displacement of 13,950 tons, length of 197 m, width of 33 m, and ability to carry 3-4 helicopters, and CH-47J Chinook helicopters can land and take off on this ship. In addition, the Ise has an integrated network system concerning information and communication, excellent abilities concerning the manipulation of multiple helicopters at the same time and high performance for the command and control of dispatched units. Accordingly, this destroyer would be very useful for disaster victims if a catastrophic disaster occurs, and might be useful as a hospital ship. The DMAT in Japan and these Navy vessels will cooperate during catastrophic disasters, and will prepare by repeating disaster drills.

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Rez de Jardin poster area

ARE PEDIATRICIANS PREPARED FOR DISASTER SITUATIONS?

Luc Mortelmans (1), Sofie Maebe (2), Patrick Van De Voorde (3), Greet Dieltiens (1), Kurt Anseeuw (1)

1. *Emergency Medicine, ZNA Camp Stuivenberg, Antwerp, Belgium*

2. *Pediatric Emergency Medicine, UZ Gent, Ghent, Belgium*

3. *Pediatric Emergency Medicine, UZ Gent, Ghent, Belgium*

Corresponding author: luc.mortelmans@zna.be

Keywords: disaster preparedness, pediatrics, pediatrician

Introduction:

Children, with specific vulnerabilities and needs, make up to more than 20% of society, so they are at risk to get involved in disasters. Are their doctors prepared for this? Aims: evaluate perceived knowledge and capability of pediatricians to deal with disasters, to identify promoting factors, to evaluate education need and willingness to work.

Methods:

A survey looking for demographics, hospital disaster planning, estimated risk and capability for disasters, training and willingness to work and a set of 6 theoretical questions to evaluate knowledge was presented to emergency pediatricians and pediatric emergency physicians in specialised centers.

Results:

194 participants reacted. M/F ratio was 51/49 with a mean age of 42,7 years. 80% works in an university hospital and 22% is prehospital active. 15% works in the vicinity of a nuclear installation and 22% near chemical industry. 33% had disaster training and 54% feels that disaster education should be obligatory in their curriculum. Risk for disasters are estimated from 2.3/10 for nuclear incidents to 7.6/10 for major trauma. Self-estimated capability for these situations ranges from 1.9/10 in nuclear incidents to 7.6/10 in major trauma. Unconditional willingness to work ranges from 35% in nuclear situations to 67% in pandemics. Mean score on the questions was 2.07/6. Training, knowledge of antidote use, self-estimated capability and exposure are significant predictors for higher scores. Pediatricians from university hospitals score amazingly significant lower than their other colleagues. Willingness to work correlates significantly with age, self estimated capability and risk estimation. In case of chemical and nuclear incidents there is correlation with knowledge on the use of decontamination, PPE and radiodetection devices.

Discussion:

Our population seems to be quite good prepared, comparing them with emergency physicians and nurses. Recruitment in reference centers could cause a positive bias on these figures. Training is an important factor as is also acknowledged by the participants. Our major conclusion is that basics of disaster management should be included in pediatric training.

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Rez de Jardin poster area

THE INFORMATION PROCESSING OF THE DISASTER HEADQUARTERS AT GREAT DISASTERS

Hiroyuki Nakao (1), Jun Tomio (1), Yasunori Iwasaki (2), Yuji Maeda (3)

1. Disaster Medical Management, The University of Tokyo Hospital, Tokyo, Japan

2. Iwasaki hospital, Mitoyo, Japan

3. Emergency department, Kansai Medical university, Moriguchi, Japan

Corresponding author: nakaonakaokobe@yahoo.co.jp

Keywords: Classification of Disaster Information, hierarchization, organization

Purpose:

The disaster information from many departments in our hospital is sent to the disaster response headquarters which is the nucleus at great disasters in the university hospital. It is vital to conduct abstract and instructions of the information in the disaster response headquarters. The maintenance of the headquarter function that is easy to be confused becomes the key to correspondence at a disaster. However, the information has typical information and exceptional information. Moreover, the latter information can classify it in the serious information to need a severer judgment, the information with problems that chiefs can direct with a simple judgment.

We examined about the information processing in the disaster response headquarters with acceptance, totalization and summarized works on the basis of information from each department in the hospital.

Training contents and the disaster assumption:

Our hospital is 1,250 beds of university hospitals. We have trained twice, at 2012, sep and 2013, March. This information communication training for office staffs in the disaster response headquarters assumed an earthquake of M7 .0 at 13:30 on weekdays. Our training purpose is to confirm a method to effectively summarize in-hospital injury information in disaster response headquarters and to give quickly directions. For the typical information, we treated it in three continued sections in the disaster response headquarters : The section 1 was receptionist about information from each department in our hospital, and confirmed the department which has been reported. The section 2 totalized the information that received from the section 1. The section 3 was summarized the progress lists and information from the section 2. The leaders of the each section picked up the exceptional information in each section, and they submitted it with predetermined paper to an exception information processing section. The exception information processing section reported important information to the task force leaders and asked a judgment. Also, for the simple problem information, the exception information processing section gave directions to the section in charge.

The information contents of two times of training were the same. At the second training, the staff was reshuffled by the section unlike the first.

Classification of Disaster Information and Flow of the Processing:

Information from each department

→(typical information) → The disaster response headquarters(the section 1, 2, 3)

The section 1: receptionist

→The section 2: totalized information

→The section 3: summarized and record

(Leaders of each section pick up the exception information to an exception information processing section)

→(exception information: simple) → an exception information processing section

→(directions)

(an exception information processing section pick up important exception information to the task force leaders)

→(exception information: important) →the task force leaders

→(directions)

Results:

It have taken two hours at the first training, took 30 minutes at the second. Because hierarchization and triage of the information performed, we were able to prevent that the task force leaders were confused by much information. As a result, the leaders were able to concentrate on serious information. Because processing and role allotment were clear, problem point extraction became easy. And, because we decided to make much of each idea on each section, motivation increased. In the daily work, the solidarity power of the staff increased.

Conclusions:

In the disaster response headquarters which became the brain at disaster, we did role allotment and performed triage of the information processing and were able to minimize confusion by doing "organization". Because all office staffs are reshuffled at several years, staffs should not do complicated work and should do simple work. We can do a manual compactly by dividing information from each department into a fixed form example and an exception example. If hierarchy is higher, the throughput decreases, but a judgment process is necessary indeed. We are convinced that presence of the disaster response headquarters which can give instructions well leads to stabilization of the whole hospital organization.

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Rez de Jardin poster area

DEPLOYMENT OF THE MEDITERRANEAN MARITIME MEDICAL RESPONSE UNIT DURING THE COUNTER-TERRORISM 2010 ESTEREL EXERCISE : TRAINING FOR DISASTER MEDICINE IN ISOLATED SITUATION.

Anne-Lise Thierry-Pradel, Cécile Deniel, Patrick Benner, Vincent Laforge, Jérôme Stephan, Cédric Du Retail, Daniel Meyran, François Topin
SMUR, Bataillon de Marins Pompiers de Marseille, Marseille, France

Corresponding author: annelisepradel@free.fr

Keywords: disaster medicine, training, maritime medicine

Introduction _ objectives

The Maritime Medical Response Unit (UMIMM – Unité Médicale d'Intervention en Milieu Maritime) is a mobile, rapidly air-deployable medical team from the Marseille Mariner Firefighters Battalion. It comprises a disaster supplies module and nine team members including four physicians.

This unit was engaged during a counter-terrorism maritime drill in the Mediterranean sea. This annual exercise is part of a national level program for maritime terrorism response. It alternatively takes place in the Atlantic (ARMOR drill) or in the Mediterranean sea (ESTEREL drill).

The purpose of this article is to debrief this exercise and assess our efficiency in order to improve it in case of real maritime disaster situation.

Material and methods

A written report was done during the exercise by the medical team in charge and a final debriefing was made after all. We made remarks about deployment, medical response, administrative and logistical support.

Results

The UMIMM was engaged by helicopter to provide emergency care for the victims of a terrorist attack on a passenger ship sailing in the Mediterranean sea. Before being deployed, the team worked in the headquarters and thought about the different places that would be suitable for the casualty clearing station (CCS) at sea, based on the ship plans. The initial report of the first physician on board stated 8 "red" (immediate) victims, 26 "yellow" (minimal) and 5 dead patients.

The team took part in the triage and initial care of the patients : 2 immediate emergencies were quickly air-evacuated to an advanced surgical unit. The team members organized the sea CCS which was established near the casualty collecting point, in a huge concert room with mezzanine floor. Then they took in charge the conditioning, treatment and medical supervision of their victims until their ground evacuation once the ship had reached Sète harbour. This implied long hours of isolation and adapted logistics.

The exercise supervisors had chosen a hostage crisis scenario with a shooting followed by explosions and fire. The first casualties were bullet wounded and the following ones suffered polytrauma (blunt trauma, blasts, penetrating injuries), carbon monoxide and smoke inhalation and burns. Minimal emergencies presented minor injuries. Some patients presented circumstantial pathologies such as asthma, acute coronary syndrom... Many were psychologically injured and were interviewed once in Sète by the Psychological Emergency Unit of Montpellier.

The conditioning of the immediate emergencies was particularly cautious, vital signs were reported each hour, specific care were prioritized. The use of drugs and material was rational, oxygen use required a particular logistic.

Discussion

This exercise was well prepared and all the partners played their role to make it as realistic as possible. Because of bad weather condition, three team members could not be

deployed which could have been negative in real conditions. Having the ship plans to anticipate the location of the CCS was a real advantage but it might not always be possible. English skills are compulsory to be able to communicate with the crew and passengers. During the exercise we did not think of security but in real life a security check point should have been installed before the CCS.

The administrative support consisted in a secretary both at entrance and exit of the CCS. We had computers to register the patients and print a list of victims. Data was sent to the ground medical teams using a satellite phone so as to anticipate their way of evacuation and their final destination.

Conclusion

This exercise allowed us to apply disaster medicine theories in a particularly difficult setting. In a hostile and isolated environment, organisation is the key for success and prevails over care. The adaptability of the team and the organisation of the CCS allowed at least 12 to 24 hours of care on board. Recent events implying huge cruise ships remind us that an accident or terrorism attack is far from impossible and our unit may be essential in crisis management.

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Rez de Jardin poster area

VICTIMOLOGY DURING A RED PLAN: WHAT MULTIPLYING COEFFICIENT?

Michel Bignand (1), S Raclot (1), Olga Maurin (1), Laure Alhanati (1), J Boventi (1), C Varennes (1), Charlotte Chollet-Xemard (2), Thomas Loeb (3), Laurent Domanski (1), Jean-Pierre Tourtier (1).

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France.
2. Emergency Medical Department, Samu 94, Créteil, France.
3. Emergency Medical Department, Samu 92, Garches, France.

Corresponding author: olgamaurin@free.fr

Keywords: red plan, multiplying coefficient, victim number

Introduction: During a red plan (RP), it is essential to set up medical resources of appropriate dimensions by anticipating the number of victims. Anticipation may be based on the frequently empirical concept of the multiplying coefficient: the ratio between the initial victim count and final victim count. The objective of this study was to determine the value of the multiplying coefficient in the Paris area.

Method: We studied, retrospectively, 30 years (1983-2012) of RP triggering in the Paris region. Four main types of event were investigated: terrorist attack, explosion (terrorist attacks excluded), fire, road traffic accident. For each event, the number of victims reported during the initial assessment and final assessment were collected with separation of the deaths, absolute emergencies (AE) and relative emergencies (RE). A multiplying coefficient was

then calculated by type of event and each victim category together with the 95% confidence intervals.

Results: From 1983 to 2012, 76 RP were triggered in Paris and the immediate suburbs. Data collection was exhaustive. With regard to deaths, AE and RE, the following multiplying coefficients were found: for a terrorist attack: 1.6, 1.2, 3.9; for an explosion: 1.2, 1.5, 2.7; for a fire: 2.5, 1.1, 2.1; for an accident: 3.6, 1.4, 2.3.

Discussion: In a dense urban environment, while, overall, the number of AE changes moderately, particularly for fires (X1.1) [95% CI: 0.9;1.3] between the start and end of the intervention, the final number of RE is markedly multiplied in terrorist attacks (X 3.9) [95% CI: 1.6;6.1].

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Rez de Jardin poster area

ARE WE BETTER PREPARED FOR CBRN INCIDENTS THAN OUR AFRICAN COLLEAGUES?

Luc Mortelmans (1), Menno Gaakeer (2), Greet Dieltiens (1), Lee Wallis (3), Kurt Anseeuw (1)

1. *Emergency Medicine, ZNA Camp Stuivenberg, Antwerp, Belgium*
2. *Emergency Medicine, UMC, Utrecht, Belgium*
3. *Emergency Medicine, Cape Town University, Cape Town, South Africa*

Corresponding author: luc.mortelmans@zna.be

Keywords: CBRN, Africa, Europe

Objective: The risk for cbrn incidents is eminent worldwide, regardless borders, countries or continents. We think we're experienced in our wealthy industrial western world but are we really better prepared than our african colleagues? This study was performed to evaluate possible disparities.

Methods: The results of an online survey on cbrn preparedness amongst Belgian and Dutch Emergency Physicians was compared with a similar survey amongst the physicians on the mailing list of the African Federation on Emergency Medicine.

Results: There were 637 european participants versus 101 africans. The africans had a significant higher rate of previous disaster training (76 vs 49%) with a higher estimated knowledge on these incidents. The risk for these incidents to occur is however estimated lower in Africa. They were significantly better trained (theoretical as well as practical) in the use of personal protective equipment and decontamination. There was no significant difference in the use of radiodetection equipment. The African population had significant more males (69 vs 54%), a positive factor for preparedness but scored lower for 2 other positive predictive parameters: mean age and prehospital activity.

Conclusions: Our african colleagues present a very good score compared with our high tech european group. Disaster Medicine education seems to be a key factor, illustrating the importance of a European Disaster Medicine Curriculum.

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Rez de Jardin poster area

CONTINUOUS ALTERNATING MEDICAL DOCTOR DISPATCH SUPPORT TO ISHINOMAKI RED CROSS HOSPITAL BY THE JAPANESE RED CROSS SOCIETY AFTER THE GREAT EAST JAPAN EARTHQUAKE

Toshihiko Hata (1)

1. *Department of Medicine, Musashino Red Cross Hospital, Musashino-City, Japan*

Corresponding author: th0117@musashino.jrc.or.jp

Keywords: Continuous Alternating Medical Doctor Dispatch Support, The Great East Japan Earthquake, The Japanese Red Cross Society

March 11, 2011, the Great East Japan Earthquake (Magnitude 9.0) happened at the east coast of Japan and the tsunami left almost 20,000 people dead or missing in Japan. Ishinomaki City suffered one of the highest causality rates with 4,000 people left dead or missing. Fortunately, the Ishinomaki Red Cross Hospital (IRCH) was intact as it had been moved away from the Pacific Ocean three years before this earthquake. However, other medical facilities closer to the sea suffered enormous damage. Methods) The Japanese Red Cross Society (JRCS) assembled volunteer doctors from across Japan and transferred to IRCH. The purpose of our mission was to support the provision of emergency medical care in Ishinomaki. Results) Cumulative 81 doctors were dispatched by the JRCS to IRCH between April and August 2011. The medical doctor team was made up of physicians in internal medicine (38), emergency medicine (12), surgery (6), pediatrics (3), orthopedics (3), anesthesiology (2), obstetrics and gynecology (2), and trainee doctors (15). We worked together with volunteer nurses and medical clerks to set up temporary medical out-patient facilities in IRCH across all medical fields. The rubble and debris in the disaster area resulted in many pneumonia. Majority of orthopedics cases consisted of leg injuries or broken bone. Mental health was also an issue, due to the rise in the number of suicide cases by hanging after the disaster. Conclusion) The medical facilities in the area with frequent earthquakes should be moved apart from the sea to avoid the damage of tsunami.

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Rez de Jardin poster area

EVALUATION AND TREATMENT OF CERVICAL SPINE INJURIES DURING SPORTS ACTIVITY

N. Syrmos (1,2), Argyrios Mylonas (2), Charalampos Iliadis (1), Georgios Gavridakis (3), Vasileios Valadakis (1), Kostantinos Grigoriou (1), Dimitrios Arvanitakis (1)

1. *Neurosurgery Department, Venizeleio General Hospital, Heraklion, Crete, Greece*

2. Department of Anatomy, School of Sports Science, Aristotle University of Thessaloniki, Macedonia, Greece.
3. Ct-scan Department, Venizeleio General Hospital, Heraklion, Crete, Greece

Corresponding author: milanako76@yahoo.gr

Keywords: CERVICAL, SPINE, INJURIES

Aim of this retrospective study was to describe the management and the outcome of cases with cervical spine injuries during sports activity admitted our hospital during a 10 year period (2001-2010). A retrospective analysis was performed in all of the case notes of consecutive cases of cervical spine injuries during sports activity. 81 individuals (80 men, 11 women, median age 41 years, range 8-59 years) presented to the outpatient department and 24 were admitted. The average length of stay was 7 days. The major parts of the injuries were caused by sports accidents. Accurate support for patients with cervical spine injuries appears to be necessary during the hospital permanence.

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Rez de Jardin poster area

MEANS OF COMMUNICATION FOR MEDICAL PROFESSIONALS IN DISASTER SITES: AN ANALYSIS OF REPORTS ON THE GREAT EAST JAPAN EARTHQUAKE.

Toshiaki Hamasaki (1)

1. Division of Emergency Medicine, Japanese Red Cross Society Wakayama Medical Center, Wakayama, Japan

Corresponding author: hamasaki@zau.att.ne.jp

Keywords: disaster, communication, radio transmission

An analysis of reports of recovery missions in disaster-affected areas revealed that means of communication such as mobile phones, access to the Internet, or fixed-line phones were not available in such areas, a matter that required review and evaluation.

[Purpose] To review and evaluate means of communication that is both effective and available at disaster sites.

[Methodology] Research and analysis of official reports from the Ministry of Internal Affairs and Telecommunications, mobile phone companies, as well as medical articles on communication tools available with medical professionals in Japan.

[Results] (1) Mobile phones and fixed-line phones: Both of them had congested lines and only about 10 – 20 percent of the calls went through. (2) Voice over Internet Protocol (VoIP) services: The Internet was not available in the disaster-affected areas owing to damaged network or disruption of electricity at the base stations, rendering VoIP services ineffective. (3) Satellite mobile phones: Long thought of as being useful and available in the affected areas, they proved disadvantageous owing to congestion and low transmission speed. (4) Amateur radio: Amateur radio operators exist all over Japan and can transmit over a

wide bandwidth from long-frequency to microwave, with a wide range of broadcast options. However, there are problems such as lack of privacy and transmission interference. (5) Multi-channel access (MCA) systems: As base stations of MCA systems have emergency power supplies, the MCA system is believed to be relatively reliable in disaster sites. Transmission via MCA systems offers privacy and multiple address system communication, and if the dedicated line between base stations suffers a calamity, it is possible to talk over the telephone, but only within the base station area. (6) Private radio transmission: Although there is very little interference, it is difficult to get a new frequency assigned.

[Conclusion] Any means of communication will have both advantages and disadvantages, and developing a perfect tool is a subject for the future. As at this moment, the VoIP and MCA systems are considered the best options. Choosing an effective means of communication demands an understanding of the conditions that prevail at a particular disaster.

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Rez de Jardin poster area

VIRTUAL RADIOLOGY AND LABORATORY: A TOOL FOR HOSPITAL MASS CASUALTY TRAINING

Luca Carengo (1), Francesco Ragozzino (1), Davide Colombo (1), Pier Luigi Ingrassia (1), Francesco Della Corte (1)

1. CRIMEDIM Research Center in Disaster and Emergency Medicine, Università del Piemonte Orientale "A. Avogadro", Novara, Italy

Corresponding author: carengo@med.unipmn.it

Keywords: mass casualty event simulation, disaster radiology and laboratory, virtual radiology and laboratory in disaster

Intro: Radiological studies and basic emergency laboratory test are of very high importance for the management of hospital patients. However it is well known that during mass casualty events and disasters they can create a significant bottleneck to the emergency department and hospital patient flow(1).

Methods: We designed and implemented an online tool to be used during full scale hospital mass casualty drills faithfully simulating an online radiology and laboratory requests and results system called Virtual Laboratory and Imaging (VLI). The system requires no specific hardware, and can be accessed from any computer in the hospital. It is composed of a basic user interface used to request and consult laboratory exams and radiological studies, a database containing all the casualty details (which can be imported from casualty databases such as Victimbase(2)) and related radiological images and a logic processor integrating information on the casualty evolutionary progress (based mainly on time and treatment as described in our previous paper (3)). This last part is responsible for calculating the appropriate laboratory results and images according to the clinical conditions of the simulated

patients. Integration with actors impersonating casualties is done through radiofrequency identification (RFID) tags which allows the system to know which casualty reached which hospital in multi-hospital drills. A mathematical models allows to decide the amount of stress that should be applied on the lab and radiology system by allowing the selection between first-in-first out logic or multiple-in-multiple-out logic. The imagining system includes both images and radiologist report related to each image. They can be produced automatically and a radiologist in the emergency department, can review images provided by the system and type in reports that then are included in the system. This increases the realism and the turn around time of radiological reports, allowing moreover the radiology department to take an active role in the exercise. Both the number of request and the average turnaround time for each exam in each hospital are calculated and logged. We tested this system during a multiple hospital 100 casualties real size drill lasting five hours.

Results: No usability issues arose from the user evaluation. All the casualties were correctly admitted to the proper hospital for exams request via RFID tracking. Table 1 presents the number of exams requested and the average turnaround time for each exam.

Hospital 1 Hospital 2

Name: Request Count: Time: Request Count: Time:

Complete Blood Count 4 30 min 1 25 min

Clotting 4 45 min 2 40 min

Biochemistry 4 35 min 2 35 min

Cardiac markers 1 35 min 2 35 min

Arterial Blood Gas 1 3 min 2 5 min

X-ray 15 7 min 5 5 min

CT Scan 23 38 min 5 29 min

Ultrasound 2 7 min 0

Electrocardiography 0 0

Table 1 legend: Aggregated count of laboratory and radiology tests according to hospital and relative execution time according to the relative number of requests.

Conclusion: VLI resulted an easy to use, user friendly virtual laboratory and imagining system. It allowed to point out, in real time, bottlenecks during the exercise, that could be explored in depth during the debriefing. In particular the massive use of CT scan in the hospitals resulted as the main bottleneck related to imaging and laboratory during our exercise. According to the number of CT requests and the average time of execution, it is clear that many of them were requested and queued but never executed with possible detrimental effect for the casualties and thus lowering the overall simulation performance. Moreover VLI increases the realism of the exercise by offering a tool to simulate an aspect of clinical practice that would otherwise be absent in hospital based drills.

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Rez de Jardin poster area

RESPIRATORY EMERGENCY DEPARTMENT VISITS INCREASED THE MOST FOLLOWING SUPER STORM SANDY

Kerrie Tidwell (1), Barnet Eskin (2), Dennis Cochrane (3), John Allegra (3)

1. emergency department, Morristown Medical Center, Morristown, United States

2. Emergency department, Morristown Medical Center, Morristown, United States

3. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: jallegra@gmail.com

Keywords: Emergency department visits, Respiratory, Disaster

Study Objective: Super Storm Sandy caused extensive damage in the New York metropolitan area. Our goal was to determine which of the 20 most common emergency department (ED) admission and discharge diagnoses increased following the storm.

Methods: Design: Retrospective cohort of ED visits. Setting: 17 suburban and urban New York and New Jersey EDs with annual visits from 28,000 to 84,000. Subjects: Consecutive patients seen by ED physicians on the five days following the storm and the same days of the week for the four preceding weeks.

Observations: We determined the 20 most common diagnoses for admitted and discharged patients during the five days following the storm. We calculated ratios of the total number of visits for each diagnosis during those five days to the average total visits during the same days of the week in the four weeks prior to the storm. We tested for statistical significance using the Chi-square test with the Bonferroni correction for 40 comparisons. Alpha was set at $0.05/40 = 0.0013$.

Results:

The total visits to all the hospitals on the five days after the storm were 13,585. The same five days of the week during the four weeks before the storm averaged 11,641 total visits. Among the 20 most common diagnoses for admitted and discharged patients after the storm, respiratory problems predominated among diagnoses that showed an increase after the storm for both admitted and discharged patients. In particular chronic obstructive pulmonary disease (COPD) for admitted patients increased by a factor of greater 2.5 and asthma for discharged patients increased by a factor of 2.1 ($p < 0.001$ for both comparisons).

Conclusions: We found the diagnoses with the greatest increases after the storm were in respiratory categories. We speculate that the widespread power outages, lack of access to primary care and higher level of particulates in the air may have led to these increases. This information may be helpful in planning for future storms.

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Rez de Jardin poster area

AIRWAY MANAGEMENT IN DISASTER RESPONSE: A MANIKIN STUDY COMPARING DIRECT AND VIDEO LARYNGOSCOPY FOR ENDOTRACHEAL INTUBATION BY PRE-HOSPITAL PROVIDERS IN LEVEL C PERSONAL PROTECTIVE EQUIPMENT.

Sami Yousif (1), Jason T. Machan (2), Selim Suner (3)
1. Emergency Department, King Abdulaziz Medical City, Riyadh, Saudi Arabia
2. Biostatistics, Rhode Island Hospital, Providence, United States
3. Emergency Department, Rhode Island Hospital, Providence, United States

Corresponding author: dr_sami911@yahoo.com

Keywords: Disaster Medicine, Video Laryngoscopy, Personal Protective Equipment

Study Objective: We sought to determine whether video laryngoscopy could facilitate the performance of endotracheal intubation by disaster responders wearing level C personal protective equipment (PPE).

Method: This prospective, randomized, crossover study recruited a convenience sample of clinically active pre-hospital EMS providers. Following standardized training in PPE use and in-servicing to the airway devices, subjects in Level C PPE were observed during the performance of endotracheal intubation on a stock airway in a Laerdal Resusci-Anne manikin system using one of three laryngoscopic devices in randomized order— a Macintosh direct laryngoscope, a GlideScope Ranger video laryngoscope (Verathon Medical, Bothell, WA), and a King Vision video laryngoscope (King Systems, Noblesville, IN). Primary outcomes were time to intubation (TTI) and first-pass success rate; a secondary outcome was participant perception of the ease of use for each device.

Results: A total of twenty advanced pre-hospital providers participated in the study: eighteen (90%) paramedics and two (10%) EMT-Cardiacs. Participants took significantly longer when using the Glidescope Ranger [35.82 seconds (95%CI 32.24-39.80)] to achieve successful intubation than with the Macintosh laryngoscope [25.69 seconds (95%CI 22.42-29.42); adj. $p < .0001$] or the King Vision [29.87 seconds (95%CI 26.08-34.21); adj. $p = 0.033$], which did not significantly differ from each other (adj. $p = 0.1017$). There was one (5%) unsuccessful first-pass attempt using the Macintosh laryngoscope; both video laryngoscopes had first-pass success rates of 100%. Self-reported measures of satisfaction evaluated on a 0% to 100% visual analog scale identified marginally greater subject satisfaction with the King Vision [86.7% (76.4-92.9%)] over the Glidescope Ranger [73.0% (61.9-81.8%); $p = 0.04$] and the Macintosh laryngoscope [69.9% (57.9-79.7%); $p = 0.05$] prior to adjustment for multiplicity. The Glidescope Ranger and the Macintosh laryngoscope did not differ themselves ($p = 0.6472$), and the differences were not statistically significant after adjustment for multiplicity (adj. $p = 0.1197$ for both comparison).

Conclusion: Use of video laryngoscopes by pre-hospital providers in level C PPE did not result in faster endotracheal intubation than use of a Macintosh laryngoscope. The King Vision video laryngoscope in particular, performed at least as well as the Macintosh laryngoscope and was reported to be easier to use. This study suggests that the King Vision video laryngoscope can be a useful adjunct in disaster response.

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Rez de Jardin poster area

USE THE H.E.L.P. ACRONYM FOR HUMANITARIAN, ENVIRONMENT, LONGEVITY, AND POPULATION TO AVOID THE UNRECOGNIZED HARM, PRIMUM NON NOCERE, OF GLOBAL HUMANITARIAN AND DISASTER RELIEF EFFORTS.

Michael Owens (1)

1. Emergency Department, Naval Medical Center Portsmouth, Portsmouth, Virginia, United States

Corresponding author: owensmd1@verizon.net

Keywords: Humanitarian assistance, Disaster Relief, primum non nocere, do no harm

Humanitarian Aid and Disaster Relief (HADR) global efforts by a variety of organizations, governments, and militaries are a part of an international effort to stabilize the highly integrated network of global world health. Even though some of these entities engage with ulterior motives, many still possess altruistic motives that are based on the pure humane intent of wanting to help. However, most of these interventions base their outcomes on performance versus impact measures of effectiveness that are showing a trend toward long term negative consequences. Additionally, these efforts generally lack approaches based on medical evidence and have long term unintended and unrecognized harmful negative impacts that the well meaning provider may not be aware. By using the proposed acronym H.E.L.P. based on Humanitarian, Environmental, Longevity, and Population; many of these unrecognized direct and indirect harmful and negative consequences will be avoided. The Humanitarian focus lends itself to the basic humanitarian principles of humanity, impartiality, and neutrality. Next, the Environmental component concerns itself with assessing, understanding, and controlling the impacts of people on their environment and the impacts of the environment on them. Longevity alludes to the need for internal and external sustainability of any global disaster or humanitarian relief effort. Finally, the Population variable considers health outcomes, patterns of health determinants, and their respective links. Unfortunately, current evidence based medicine using measures of effectiveness versus traditional performance measures reveals the dark truth that most altruistic HADR efforts are causing harm. This contradicts our professional dictum of primum non nocere or "do no harm". Applying the H.E.L.P.

acronym and its concepts will prevent many of these unintended consequences.

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Rez de Jardin poster area

HOSPITALS PREPAREDNESS DURING ARAB SPRING IN YEMEN FOR DISASTER SANA'A CITY 2011 -2012

Saleem Aladhrai (1), Pier Luig Ingrassia (2)

1. emergency department, thamar university, sana'a, Yemen
2. Translational Medicine, Università degli Studi del Piemonte, Novara, Italy

Corresponding author: Saleemdr1@gmail.com

Keywords: Arab sprain, Yemen, hospital Preparedness ,disaster

Objective: This Paper For Evaluating The Current Status Of Disaster Preparedness Within The Hospital Is The First Step In Improving A Nation's Preparedness For A Disaster In Yemen Assessed The Emergency Preparedness Of Hospitals For All-Risks But Focused On Mass Causality Incident In Demonstration (Arab Sprain) Resulting In Surge Demand. It Adopted W. H. O Checklist Covering Hospital Preparedness, Equipment, Manpower And Surge Capacity Planning As Best Practices For The Mitigation Of Public Health Emergencies. **Method:** This Is A Cross-Sectional Study Of Purposively Selected Health Facilities. The Method Used Consisted Of Site Visit, Questionnaire Survey, Literature And Internet Review. The W. H. O. Standard For Emergency Preparedness Of Health Facilities Was Used To Evaluate And Assess The Hospitals Preparedness. The Study Was Conducted Between February 2011 May 2012. A Total Of 16 Health Facilities Including Teaching Hospitals Participated In The Study.

Result: These Were: (1) All Of The Nation's Hospitals Were Not Prepared For Disaster Resulting In Surge Demands (2) Our Survey Suggested That, At The Time Of The Survey, Hospital Preparedness For Disaster In Sana'a (Yemen) Was At An Early Stage Of Development..

Discussion: The Inadequacies Of The Hospital System In Responding To Emergencies Raise Serious Public Health Concerns. The Biggest Challenge Facing The Hospitals In Their Emergency Intervention Is The Lack Of Pre-Emergency And Emergency Preparedness Plans As Well As The Coordination Of The Hospitals Response Mechanisms. Comprehensive Measures Should Be Taken To Enhance Hospital Preparedness In The Prevention And Management Of Disaster

Conclusion: The Paper Ended With Recommendations Hospitals At All Levels Should Enhance Their Management, Including Updating And Revising Of Emergency Plans; Strengthening Communication And Cooperation With Other Local Agencies On How The Nation's Hospitals And Their Supervisory Agencies Could Improve Emergency Preparedness.

Keywords: Arab Sprain ,Yemen , Hospital Preparedness, Disaster.

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EVALUATING THE IMPACT AND IMPLICATIONS OF A SEVERE NATURAL DISASTER ON ASTHMA AND PSYCHIATRIC PRESENTATIONS TO AN URBAN ACADEMIC PEDIATRIC EMERGENCY DEPARTMENT

Akash Bhatnagar (1), Ritu Sarin (1), Naomi Dreisinger (1), Robert Hoffman (2)

1. Emergency Medicine, Beth Israel Medical Center, New York, United States
2. Emergency Medicine, Albert Einstein College of Medicine, Bronx, United States

Corresponding author: rjhoffmanmd@gmail.com

Keywords: disaster, hurricane, blackout

Introduction: On October 29, 2012 our medical center and large areas of New York City and surrounding areas suffered a 5-day power outage due to flooding caused by a massive hurricane Sandy. During this period, in which our medical center continued to function, we experienced a significant surge in patient visits. In this study we sought to evaluate the effect of this natural disaster on presentations of pediatric medical (asthma) and pediatric psychiatric illnesses to our pediatric emergency department.

Methods: In this IRB-approved study, we compared relative risk of psychiatric complaints and asthma presentations to the pediatric emergency department (PED) 60 days pre and post Hurricane Sandy. The null hypothesis was that post hurricane there was no increase in pediatric visits for asthma and psychiatric illness relative to the pre-hurricane baseline period. Data was extracted from our electronic medical record, and relative risk calculated separately for psychiatric illness/symptoms and asthma using the ICD-9 code assigned at discharge. Calculations were performed using Stata12 (College Station, Texas). Relative risk and 95% confidence intervals are reported.

Results: Compared to the pre-hurricane baseline, in the post hurricane period the relative risk for presentation of asthma was 1.59 (95%CI 1.51-1.67), and the relative risk for presentation of psychiatric presentations was 1.35 (95%CI 1.21-1.57). The 60-day census post-hurricane was 3037 patients, the baseline census 60 days prior to the hurricane was 2487 patients.

Conclusions: The relative risk of asthma and psychiatric complaints increased post-hurricane relative to the pre-hurricane control period. The causes for this are unclear and almost certainly multifactorial. Increased incidence of asthma may be due to disruption of use of asthma controlling medications both due to forced evacuation of homes; power outages that prevented use of home nebulizers; inability to get asthma controlling medications such as albuterol due to pharmacy closures; lack of access to primary care providers; and possibly exposure to new environmental triggers for asthma.

Contributing factors are presumed to be closure of a large medical center with inpatient pediatric psychiatry services located less than one mile from our medical center, as well as stress from disrupted life routine caused by power outage and forced evacuation from homes.

Preparedness to deal with increased cases of patients requiring medications that they have lost access to, such as asthma medications, and having ability to dispense such medications is critical in post-disaster periods. It is likely that patients with other conditions that require chronic use of medication and electricity, such as diabetics requiring insulin that is refrigerated, would face similar problems. Increased availability of mental health professionals is also critical for a pediatric emergency department post-disaster, as psychiatric illnesses are more likely to present during these periods. ED administrators should consider these issues when developing disaster preparedness plans.

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POST-DISASTER ANALYSIS OF AN URBAN ACADEMIC PEDIATRIC ED FUNCTION DURING A MAJOR HURRICANE AND SUBSEQUENT POWER OUTAGE: UNEXPECTED AND UNFORESEEN DIFFICULTIES DESPITE PREPARATION.

Ritu Sarin (1), Akash Bhatnagar (1), Naomi Dreisinger (1), Robert Hoffman (2)

1. *Emergency Medicine, Beth Israel Medical Center, New York, United States*

2. *Emergency Medicine, Albert Einstein College of Medicine, Bronx, United States*

Corresponding author: rjhoffmanmd@gmail.com

Keywords: hurricane, disaster, pediatric

Introduction: On October 29, 2012 our hospital and large areas of New York City and surrounding areas suffered a 5-day power outage due to flooding caused by a massive hurricane Sandy. During this period, in which our medical center continued to function, we experienced a significant surge in patient visits. A post-disaster evaluation of department function and root-cause analysis were performed. We sought to conduct a descriptive study of the results of the post-disaster evaluation.

Methods: In this IRB-approved descriptive study, we evaluated function of the pediatric ED in an academic medical center with over 100,000 patient visits annual, 16,000 of which are pediatric ED visits. The review evaluated challenges and deficits encountered by staff and patients.

Results: Post hurricane analysis revealed shortfalls in four particular areas: staffing, pharmaceutical needs, crisis counseling/psychiatric needs, and parental support. Staffing needs in the immediate pre and post Hurricane period were preemptively arranged, but inability of staff to reach the hospital via regular transportation routes required

frequent, unexpected schedule rearrangements. Loss of access to local pharmacies but to power outage required our hospital not only to prescribe medications, but also to have supplies of medications available for dispensation. Asthmatics without access to electricity required aerochambers and MDI's to avoid and treat asthma exacerbations because nebulizers were non-functional. Disaster status of the neighborhood and panic, as well as other factors resulted in a spike in pediatric ED visits for psychiatric complaints as well as for parental counseling.

Conclusions

Emergency departments have disaster plans and commonly drill to assure disaster preparedness. Review of our hospital needs and response to this hurricane disaster demonstrated the importance of disaster staffing plans which incorporate transportation needs of staff members. Most emergency department are not equipped to deal with multi-dose medication dispensing, but our review determined the importance of incorporating pharmaceutical needs into a hospital/ED disaster plan. Lastly, the need for additional support staff and functional space to accommodate patients' support and counseling needs must be incorporated into any disaster plan.

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FUKUSHIMA DISASTER: MANAGEMENT OF A NUCLEAR CRISIS

Melek Sunde Kilic (1)

1. *Emergency Department, Centre Hospitalier Robert Morlevat, SEMUR-EN-AUXOIS, France*

Corresponding author: sundekilic@yahoo.fr

Keywords: Fukushima, Nuclear crisis, Management

March 11, 2011, the district north-east of Japan was hit by a massive earthquake followed by a tsunami and a major series of accidents at the Fukushima nuclear power plant with leaks of radioactive elements. No one could have imagined that such a disaster could take place in the country best prepared to withstand such events.

No human activity is exempt from risk. The population accepts these risks provided the benefits override them and that complete information is delivered. Indeed accurate information is the source of confidence and confidence is the condition of efficiency and acceptability.

The question is : "what lessons can be learned for the future of the nuclear industry"? Which lessons can we learn from the accident of Fukushima in management of Disaster Medicine crisis?

We'll study the events of the D-day and note the effects of the earthquake and those of the tsunami. Then we'll study the evacuation of the area and problems like lack of communication between Operation Control Center and teams working in the area.

Then we'll study the impacts of nuclear leaks on the environment : pollution of water by radioactive elements,

building of protection walls, management of the population, food restrictions, etc.

We'll study the impact of radiactivity in and out the area as well as the impact of radioactivity on populations by inhalation of particles and direct exposition to radioactive leaks on soils.

We'll quote the example of the effects of Cesium on humans.

So what are the lessons of the disaster of Fukushima?

The Scientific Committee of Academy of Science of Japan declared that the security procedures in the management of populations were respected. But by the way, the medical survey of those populations during several years remains a necessity.

The French Academy of Sciences too has its recommendations concerning the management of nuclear crisis.

For instance, it's very important to have internal indicators of radioactivity and procedures corresponding to different levels of danger. The population should be correctly informed concerning the intake of iode pills and the GP's should know the elementary means of radioprotection.

The organisation of medical care system should be adapted to such circumstances.

And finally research based on simulation remains a priority.

As a conclusion, we might say that 3 points appear to be very important:

Firstly, we recognize that nuclear electric production may have serious drawbacks which do not spare even the most technically advanced countries. Secondly, we really admit that a culture of transparency of information in nuclear field should replace a culture of vagueness or opacity. Thirdly, the reinforcement of nuclear safety and radioprotection measures such as deep controls of all nuclear plants is now seen as a high priority.

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INTEGRATED INTERVENTION TO MASS CASUALTIES AND DISASTERS - AN EUROPEAN PERSPECTIVE

Ioana Daramus (1), Henri Julien (2), Adela Golea (3), Cristian Boeriu (4), Sorana Truta (1), Florin Daramus (1), Raed Arafat (3)

1. Foundation for SMURD, Targu Mures, Romania
2. The French Society of Medicine of Catastrophe, Paris, France
3. Emergency medicine, UMF Cluj Napoca, Cluj Napoca, Romania
4. Emergency medicine, UMF Targu Mures, Targu Mures, Romania

Corresponding author: ioana.daramus@fundatiapentrusmurd.ro

Keywords: disaster medicine, 3D simulation, integrated services

Appropriate intervention, fast and efficient to mass casualties and disasters is essential to save lives as well as property at risk. Such intervention requires appropriate training programs for involved professionals, programs that add to specific skills and abilities the teamwork spirit as well as abilities to participate in integrated intervention.

Traditionally such skills are obtained by conducting extensive field simulation exercises, exercises whose cost often exceeds the available human and material resources and are organized sporadic, too rare to create automatism of action so important in such situations. Also there is little disaster preparedness training covered in basic or advance (specialist) training programs for doctors and nurses.

In this context, SMURD Foundation in partnership with the Paris Fire Brigade, French Society of Disaster Medicine, French National Academy of Firefighters, Romania's General Inspectorate for Emergency Situations, Romania Ministry of Health and SC Softwin SRL proposed and obtained co-financing from European Social Fund through the Sectoral Operational Programme Human Resources Development 2007-2013 POSDRU81/3.2/S/58809 for the project "Professionals in Integrated intervention to mass casualties and disasters", which proposes a European model of training in the field.

More than 1,200 doctors, nurses, paramedics and firefighters working in emergency services in Romania participate in this project and are trained in integrated intervention to mass casualties and disasters using a blended learning training program where on line e-learning sessions are combined with residential theoretical and practical sessions and practical session on the digital simulator. This 3D simulator allows acquiring command, control and intervention skills, being one of the most advance training tool in the field. The proposed model creates the premises for the existence of training modules to develop early intervention skills without being needed to conduct expensive field simulation exercises.

The paper present the results of the training of more than 1200 professionals from the emergency services (doctors, nurses, paramedics and firefighters) and comment of the impact of such program in the target population.

The preliminary results shows a great interest of the target population especially in the 3D simulation exercises but also in the practical exercises of the program.

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JAUNDICE IN THE EMERGENCY

Meriem Essakhi (1), Khalid Khaleq (1), Olivier Tchamdja (1), Mourad Nafaa (1), M Moussaoui (1), K Yaqini (1), M Mouhaoui (1), Houssine Louardi (1)

1. service des urgences, chu ibn rochd casablanca maroc, casablanca, Morocco

Corresponding author: essmeriem365@hotmail.fr

Keywords: jaundice, emergency, higt mortality

JAUNDICE IN THE EMERGENCY:

M. ESSAKHI, K. KHALEQ, G. TCHAMDJA, M.NAFAA, M. MOUSSAOUI, K. YAQINI, M. MOUHAOUI, H.LOUARDI

Home Emergency Service CHU IBN ROCHD Casablanca

INTRODUCTION:

Jaundice is a common reason for emergency department visit. It mainly the problem of etiology. The goal of our work is to clarify the epidemiological and different etiologies of jaundice emergency Features and determine their prognostic factors.

PATIENTS AND METHODS:

This is a retrospective study spread over 34 months, including all adult patients admitted for clinical jaundice with or without a cholestatic syndrome, having spent more than 24 hours in the ICU and in whom liver function is disturbed. The parameters studied were the paraclinical and evolving demographic, clinical. Two groups of patients were compared by univariate: surviving and deceased with a significance level of 5%.

RESULTS:

8550 patients were registered on study period, 70 cases of jaundice (overall incidence of 0.8%). The average age of patients was 38 + / -5 years with a male predominance (sex ratio 1.41). The clinical jaundice is noted in all patients, fever (35 cases), Disorder of consciousness (25 cases), impaired general condition (16 cases), hemorrhagic signs (9 cases), ascites (2 cases), oligoanuria (1 case), neurological deficit (1 case), pruritus / scratching lesions (1 case). Biologically, there was a hyper bilirubin to conjugated bilirubin (31 cases), cytolysis (39 cases), leukocytosis (31 cases), thrombocytopenia (33 cases), prothrombin time less than 45% (14 cases) and acute renal failure (21 cases). Treatment consisted of fluid intake in all patients, antibiotic treatment (46 cases), transfusion of blood products in 12 cases and the administration of N-acetylcysteine (1 case). The causes were found: leptospirosis (26 cases), acute pancreatitis (8cas), cholangitis (8cas), hepatic encephalopathy (8 cases), fulminant hepatitis (8 cases) and malaria (8cas). 37 deaths were recorded (52.86%). The prognostic factors found in univariate analysis are summarized in the table below:

prongostic Survivors Died P factors N = 33 N = 37

Fever			
/thrill	23	12	0,001
respiratory rate > 25/mn	0	10	0,001
Disorder of consciousness	0	25	<0,00000001
SGPT > 40 ui/l	16	9	0,003
hemoglobin < 10 g/dl	10	3	0,005
leptospirosis	21	5	0,00001
hepatic encephalopathy	0	8	0,004
fulminant hepatitis	1	7	0,03
acute pancreatitis	6	2	0,01

CONCLUSION:

Jaundice related mortality remains high in our context. Recognition of derogatory factors imposes early care and adequate ICU to improve the prognosis of jaundice in its severe forms.

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TERRORIST BOMBING ATTACK: THE DISTRIBUTION AND PATTERN OF INJURY FROM AN INDIVIDUAL EVENT

Prasit Wuthisuthimethawee (1,3), Michael S Molloy (2,3,4), Gregory R Ciottone (3)

1. Emergency Department, Songklanagarind Hospital, Prince of Songkla University, Hatyai, Songkhla, Thailand
2. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT), Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland
3. Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA
4. Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland

Corresponding author: mickmolloy@mac.com

Keywords: Terrorist attack, Car Bomb, Injury patterns and distribution

Introduction

Terrorist-related mass casualty events have become a significant worldwide threat. Bombing attack is a preferred method due to ease of deployment of the explosive and lethality of the result. To properly care for the victims of a terrorist bombing attack knowledge of the distribution patterns and types of injury are required, as are lessons-learned from prior events. Terrorist attacks differ from accidental explosions as they may be asymmetric, multimodality, and devised to maximize effects. In addition, the environment where a bomb detonates, closed versus open space, also dramatically alters injury patterns.

Objective

Determine the injury patterns of victims from a confined-space terrorist car bomb attack at Lee Graden Hotel, Hatyai city, Songkhla, Thailand in March 31, 2011,

Materials and Methods

The medical records of patients from the Lee Graden Hotel bombing cared for at Songklanagarind Hospital were retrospectively reviewed. The demographic data, type and distribution of injuries were reported as number and percentage.

Result

The bombing resulted in a total of 377 victims; 3 victims were defined dead at the scene and 130 victims were admitted. One hundred fourteen victims were transferred to Songklanagarind Hospital. The distribution of victims by triage category were 10 (8.8%) severely injured patients, 30 (26.3%) moderately injured patients and 74 (64.9%) mildly injured patients. Of those transferred to Songklanagarind Hospital, no patients died. Data from 3 patients were

missing, so only 111 patients (female 75, male 36) were available for pattern of injury and outcome analysis. The mean age of patients was 28 years old (range 10-79). Seventy six patients (68.5%) were discharged that day, 27 (24.3%) patients were admitted, 3 to the intensive care unit, 1 to the Burn unit, and the rest to the medical/surgical ward. 8 (7.2%) patients were observed for 24 hours in the Short Stay Observation Unit before discharge. Smoke inhalation was the most common injury (82.9%) followed by burns (17.1%). Seventeen patients (15.3%) underwent surgical intervention.

Conclusion

Terrorist bombing attack results in an injury pattern that is dependent upon the event context. Smoke inhalation and burn injury were common among the victims from this confined-space bombing incident.

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COSTA CONCORDIA WRECKAGE JANUARY 2012: THE PRE-HOSPITAL PHASE OF LOCAL MEDICAL RESPONSE.

Pier Luigi Ingrassia (1), Luca Ragazzoni (1), Giovanni Sbrana (2), Vittorio Chelli (3), Mauro Breggia (3), Francesco Della Corte (1)

1. CRIMEDIM - Research Center in Emergency and Disaster Medicine, Università del Piemonte Orientale, Novara, Italy
2. Department of Anesthesia and Intensive Care, Ospedale Della Misericordia, Grosseto, Italy
3. Emergency Department, Ospedale Della Misericordia, Grosseto, Italy

Corresponding author: luca.ragazzoni@med.unipmn.it

Keywords: maritime disaster, mass casualty incident, medical response

Costa Concordia was a cruise liner on duty in the Mediterranean Sea since July 2006. It was able to carry up to 3700 passengers and 1100 crew members. On January 13th 2012 at 9.42 pm, Costa Concordia, in calm seas and overcast weather, hit a rock just a few meters from Isola del Giglio coastline and stopped just in front of the small island. Isola del Giglio is a small Italian island (25 km²) situated an hour sail from Tuscany coastline, and is part of the Province of Grosseto. During the first hour after the impact, no rescue request arrived neither to EMS dispatch center nor to coast guard. Only a few citizens of the island called the Italian emergency numbers speaking about "a boat in distress close to the Isola del Giglio". Being worried about the "ship accident" at 10.35 pm, about 60 minutes after the incident, Grosseto dispatch center stopped a secondary air medical transport from Grosseto Hospital to Pisa University Hospital (about 40 minutes flight) to keep available the only helicopter with permission to fly over the sea. But it was only 25 minutes later, at 11.00 pm, about 1 hour and 20 minutes after the impact, that the severity of the situation

became clear, so the alarm was confirmed and the local medical disaster plan was activated. As soon as the Grosseto air medical crew landed on the island, the first triage started according to the START Triage method. It was immediately clear that the vast majority of victims would have been tagged as 'minor', so the real challenge was precisely the recognition of the few seriously injured patients among the dramatic number of walking wounded. At the beginning, the main objective of the medical response was definitely the protection of all shipwrecked victims from hypothermia. Two advanced medical posts (AMP) were established on the island using both a tent and a small first aid station that is used during summer by EMS. These AMPs served as a safety zone to perform triage and as a warming area not only for critical patients who were waiting for air medical evacuation, but also for a lot of 'minor' victims. Four thousand and two hundred persons disembarked from Costa Concordia, 307 of them requested medical care. One hundred and ten, 3 T1, 16 T2 and 91 T3, were admitted to Grosseto and Orbetello Hospital (a rural hospital on the mainland in front of Isola del Giglio). T1 and T2 were transported by HEMS directly to Grosseto Hospital. All T3 were transported to the nearest harbour, Porto Santo Stefano, by a couple of commercial ships where the third AMP was ready to receive them. During the embarking from Giglio Porto, all the casualties were re-triaged by a couple of nurses. As a consequence 2 T3 were reclassified to T2 and evacuated by HEMS. At the AMP in Porto Santo Stefano triage was performed again and all the victims were confirmed T3. Most of them had small trauma injuries, signs and symptoms of moderate hypothermia or minor health problems. Forty-seven were transferred to the Orbetello Hospital and 53 to the Grosseto Hospital. On January 14th at 8.30 am, the acute emergency phase was declared over. The high probability to discover other victims inside the ship, and the need to provide medical assistance to all rescue technicians (mainly fire fighters and navy special force SCUBA operators) imposed to leave on the island a medical rescue team (1 emergency physician and 1 nurse). During the following period, apart from some minor injuries and medical issues (mainly diabetes) transported to Grosseto and Orbetello Hospital from disaster area, the last trauma victim was found on the scene on January 15th at 12.50 pm and admitted to the ICU of Grosseto Hospital at 01.20 pm. He was a ship crew member, entrapped on board, with head and chest trauma, and femur fracture. Among the other major trauma patients hospitalized to Grosseto or Orbetello Hospital during the acute phase, just one was transferred to Siena (one of the three University level 1 Trauma Centre in Tuscany) with right leg crush fracture and spinal cord injury. The transfer was done immediately after the primary and the secondary assessment according to ATLS procedure, with a second air ambulance redeployed on Grosseto from another HEMS base in the north of Tuscany. Also 2 pregnant young women were hospitalized due to some minor health concerns.

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PSYCHOSOCIAL TRIAGE PROTOCOL

Joana Faria Anjos (1), Sónia Cunha (1), Sara Rosado (2), Márcio Pereira (2), Miguel Soares Oliveira (3), Gabriela Salazar (1), Veronica Oliveira (1), Jacinta Gonçalves (1), Sílvia Campino (1), Cátia Mendes (1), Carlos Pereira (1)

1. *Centre for Psychological Support and Crisis Intervention, National Institute of Emergency Medicine, Lisbon, Portugal*

2. *Centre for Psychological Support and Crisis Intervention, National Institute of Emergency Medicine, Lisboa, Portugal*

3. *President, National Institute of Emergency Medicine, Lisbon, Portugal*

Corresponding author: joana.faria@inem.pt

Keywords: psychosocial triage in mass casualty situations, psychosocial triage tool, START methodology

Introduction:

In mass casualty situations and in disasters available medical resources are limited, and the time to definitive care is uncertain. To maximize patient survival and do a more efficient use of resources is essential the utilization of a dynamic triage system. Most accepted methods of triage are based on the principles of the Simple Triage and Rapid Treatment (START). Patients are categorized and will wait for medical care accordingly to different triage categories. Patients that can walk usually are identified by green and are included in delayed category. Despite this categorization patients triaged with less priority and also unharmed involved are commonly in great emotional distress. Due to the mobility capacity of this involved they can be very appellative seeking medical attention for themselves or for their relatives and friends, hampering medical emergency teams' intervention. Also, family members of those who experienced the disaster may quickly congregate in or near the disaster area. There may be bereaved people who have experienced the death of a loved one.

Disasters often produce from 4 to 10 psychological casualties for every physically wounded or deceased casualty. In a large-scale event there are several victims' categories. There are wounded and unwounded survivors, family members, witnesses who saw or heard distressing events, members of the rescue teams, emergency personnel, and other community members.

The objective of this work is to create a psychosocial triage tool that complements START methodology, to assess and direct properly individuals involved in potentially traumatic events.

Method:

Based on a literature review on "psychological triage" and "psychosocial triage" on PsycLIT and Medline; and in expert opinion, a Psychosocial Triage Protocol (PTP) was developed.

Results:

The PTP is based on the rapid assessment of the symptoms and needs of those involved. There are three different

psychosocial priority categories that goes from immediate life risk to just practical needs.

The first Psychosocial Priority (PSP1) include life risk to oneself or others (suicidal or homicidal intent, aggressiveness,...); disorientation; confusion; psychotic symptoms; dissociation; panic attack; emotional shock (freezing, struggle, escape); mourning or heavy grief.

The second Psychosocial Priority (PSP2) comprises other acute stress reactions (guilt, anger, fear, agitation, alienation, compulsory cry, anxiety); being uncooperative with medical treatment; psychoactive substances abuse; vulnerable or dependent individuals.

The third Psychosocial Priority (PSP3) comprises practical needs (hunger, thirst, cold, heat, among others); search of relatives; significant material losses; spatial orientation difficulties; with no other symptoms.

Individuals within the PSP1 category should be directed to the most secure and calm place possible. They could not be left alone before psychiatric referral, while symptoms persist. These individuals are the first to be evaluated and stabilized and they should be kept away from the others survivals to prevent emotional contagion. Individuals on PSP2 category will also be directed to a safer and calmer place, but they may have to wait for crisis intervention. Individuals on PSP3 category are the less priority. They are also immediately directed to a safer and calmer place but they may have to wait longer. Especial attention should be given to re-triage in this situation. Positive interaction between survivors should be promoted. Individuals on PSP2 and on PSP3 categories can be together in the same place.

Conclusion:

In the psychosocial triage of emergencies there is a lack of homogeneous criterion and triage is done based on non operative assessment. This protocol led to implement an operative psychosocial triage process, which allows identifying those people that require immediate assistance as well as the priority order to be followed. The presented protocol must be tested in different mass casualty situations.

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Rez de Jardin poster area

THE DISTRIBUTION OF HEALTHCARE IN LIBYA 2011 - A COMPARISON BETWEEN FRONTLINE PROVISION AND EVACUATION.

Emad Abosrewel (1), Saleyha Ahsan (2), Mohammed Al Taib (3), Elias Albarouni (4), Derek Hicks (2), Tariq Nagi (1)

1. *Emergency department, Tripoli Central Hospital, Tripoli, Libyan Arab Jamahiriya*

2. *Emergency Department, Queens Hospital, Romford, United Kingdom*

3. *Plastic surgery, Tripoli Central Hospital, Tripoli, Libyan Arab Jamahiriya*

4. *Plastics, TMC, Tripoli, Libyan Arab Jamahiriya*

Corresponding author: saleyhaahsan@yahoo.co.uk

Keywords: Libya, frontline, emergency medicine

Aim

A comparison of emergency healthcare provision between the UK, Tunisia and Libya during the Libyan conflict in 2011 over a six month period.

Background

A British doctor travelled to Tataouine, Tunisia to work in a hospital close to the Libyan –Tunisian border during the Libyan conflict in Aug 2011. She aligned herself with Libyan volunteer doctors working within the Tunisian hospital to receive war-wounded Libyans. When the flow of patients being evacuated into Tunisia reduced, the doctor moved forward into Libya to Tripoli. An overview of the conditions within Tripoli's main hospital was made, through speaking to doctors working in the three main hospitals and the patients. The British doctor then finally deployed with local battle groups, arranged through the Libyan Ministry of Health to provide emergency medicine provision during the battle for Bani Walid.

Method

The doctor arranged an attachment through Libyan NGO World for Libya to work in Tunisia with volunteer Libyan doctors. Her work involved receiving patients on arrival, wound management, stabilisation, logistics for transfer and working in resus. On deployment to Bani Walid, the British doctor was able to compare healthcare on the frontline, thus receiving patients fresh from the battlefield in comparison to the patients she had managed up to 7 days post injury in Tunisia following their evacuation.

Results

The doctor works in a British based Emergency department and was able to compare her UK peacetime practice with that of a conflict situation. She consulted with her seniors on return to analyse the difference in management of trauma and pre-hospital care.

In Tataouine Hospital, Tunisia a small, unsupported group of volunteer doctors were working to receive patients arriving over the border. They had limited resources and relied on the generous acceptance of the local Tunisian hospital to care for the evacuated Libyans who required stabilisation prior to further travel for a further 8 hours to Tunis.

Deploying to the frontline in Bani Walid was a far better supported medical effort. Despite the dangers of being close to battle, a greater number of medical personnel, at registrar level and above were available, organisation was improved and equipment was of a high standard, which included a mobile operating theatre. Patients were able to receive high standards of care close to the point of injury due to a well-supported team.

Conclusion

The closer to the point of injury the better the quality of work and health provision was provided during the battle for Bani Walid than compared to those received in Tataouine, Tunisia. This was attributed to the mismatch in distribution of manpower and a lack of organisation through the higher chains of responsibility. This often led to the high levels of work being done on the frontline being set back due to post-op or post injury complications such as infection due to the poorer levels of aftercare, as a consequence of a lack of support and manpower. A number

of patients arriving in Tataouine had grossly infected wounds even though they had initially been managed well at the point of injury.

A greater number of doctors, all male, were keen to deploy to the frontline instead of travelling to Tunisia to assist in the mass casualty evacuation. This was partly due to the need to participate in the 'revolution.' This in turn did lead to a number of healthcare professionals or those allied to health being present and a difficulty then in deciphering levels of seniority, experience and speciality. It also resulted in a number of different groups working in close proximity with each other but remaining separate due to differing leadership.

In conclusion, a vast number of Libyan doctors took significant risks to volunteer throughout the conflict in order to provide adequate healthcare on the frontline and through the evacuation chain. Their roles included treating wounded fighters from both sides, and civilians. The level of support from the Libyan National Transitional Council's Ministry of Health was not equal at the various stages during the period from Aug – Oct 2011 and often resulted in complexities on the ground for both patients and doctors. This was partly due to the lack of experience in co-ordinating healthcare in times of conflict and also the instability of the region during the war.

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MALTESE EMERGENCY DOCTORS' AND EMERGENCY NURSES' PERCEIVED RISK AND WILLINGNESS TO RESPOND TO MARITIME MASS CASUALTY INCIDENT

Duncan Briffa (1)

1. Accident and Emergency Department, Mater Dei Hospital, Malta, Malta

Corresponding author: dellacorte.f@gmail.com

Keywords: Malta, Nurse, Maritime

Introduction: The success of any preparedness plan is always the availability of human resources. This study would give insight about the issues that are mostly influencing the doctors' and nurses' perceived risks, specifically those which influence the professionals' willingness to respond. The hypothesis is that Emergency Doctors and Nurses would not be willing to respond if such an MCI had to occur especially if certain kinds of hazards were present. **Methods:** Since a validated tool could not be sought, we built our own survey tool. The questionnaire looked into the aspects of risk perception and willingness to respond to four different hazardous situation : accidental, non-accidental, unknown and natural. The participants were asked to grade their level of agreement to various statements by means of a likert scale from 1(Least Agree) to 10 (Most Agree). In total, the number of participants for this study amounted to 120 and included the whole population of Emergency Doctors and Emergency Nurses who work in the only state Emergency Department on the

island of Malta. Results: The response rate for this study was that of 65.8 % (79/120 participants). Of these, 27 (34,1%) were doctors and 52 (65,8%) were nurses. The nature of the hazard seems to play an important influence on the participants' risk perception and willingness to respond. The same could be said for gender, whereby females tend to perceive higher risks than males, however it could not be concluded if age is an influential factor as well. Interestingly, various differences have been noticed between the two professions participating in the study that could have an impact on both the preparedness phase and the response phases of a disaster. Doctors seem to perceive lower risks than nurses in any of the hazards being studied (Accidental 67%:69%, Non-Accidental 73%:75%, Unknown 71%:72%, Natural 72%:74%). Such results had an impact on the professional's willingness to respond, with the doctors seeming to be more willing to respond to any hazard than the nurses did (Accidental 57%:52%, Non-Accidental 54%:49%, Unknown 52%:48%, Natural 57%:51%). Various factors have contributed to the development of such differences between the two professions including knowledge and training, voluntariness to respond and the importance of one's family. Another important result was that doctors prefer to work with the Emergency Department rather than on site. Yet, all of these results were mostly influenced by the nature of the hazard. However, the general population showed a very low aptitude to respond with the highest score being obtained for an accidental hazard (53.9%). Conclusions: This study gave insight about the need to invest more in human resources when considering preparedness issues. Material resources are surely an important asset during an MCI, yet the availability of human resources is of utmost importance. This study gave insight about the fact that one should not rest assured that professionals will simply flock in the Emergency Department when an MCI occurs. Important information was collected about the main influencing factors on risk perception and more importantly on willingness to respond to such incidents. In particular, important information has been collected about the way that these two distinct phenomena influence doctor's and nurses' decision making. Such information will be very useful during the planning phases of disaster.

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ASSAULTS TOWARD EMERGENCY MEDICINE PHYSICIANS IN EGYPT: ANALYSIS BY DEMOGRAPHIC PREVALENCE AND EVENT CHARACTERISTICS

Tamer Montaser (1,2), Ahmed Hassan (3)

1. Emergency Department, Cairo University Hospital, Egypt.
2. Emergency Department, Prince Mohamed bin AbdulAziz Hospital, Riyadh, KSA.

3. Emergency Department, King Khalid Hospital, King Saud University, Riyadh, KSA.

Corresponding author: tamer_montaser@yahoo.com

Keywords: Assault, Physical, Verbal

Background and objectives: Assaults toward physician is an international phenomenon and many of these incidents are unreported. It is the goal of this study to increase the awareness of this problem and convey a message to the decision makers.

Methodology: Emergency physicians work in Cairo, Alexandria, Tanta, Ismailia and Assuit, representing five different geographical parts in Egypt were surveyed in a questionnaire-based cross-sectional study. The questionnaire included data about the incident characteristics occurred in the last three months of conducting the study (Last 3 months in 2012) and demographic information.

Results: 118 physicians completed the questionnaire. The mean age of the study participants were 26 ± 1 year, of them 88 male. 77 (65%) of the participants reported verbal assaults in the form of verbal abuse and threat, while 22 (18%) had been exposed to a sort of physical abuse. The event occurred almost at evening (66 cases). 74% of exposed doctors are working in tertiary hospitals mainly in Cairo (27%) and Alexandria (19%). Assaulters' mean age was 31 ± 1 year, mainly were one or more of the patient relatives. 78 % of assaulters were males. Alcohol and substances abuse related assaults reported in 11 cases, while only one female doctor reported Sexual harassment. Conclusion: Violence toward Emergency medicine physicians in Egypt is a serious problem which affects their performance and job satisfaction. Further research is essential to identify specific risk factors to develop prevention strategies.

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IN-HOSPITAL MORTALITY AND DISCHARGE DIAGNOSIS OF PATIENTS WITH DWINDLING

Djärv Therese (1), Maaret Castrén (2), Lisa Kurland (3)

1. Emergency department, Karolinska University Hospital Solna, Stockholm, Sweden

2. Section of Emergency Medicine, Södersjukhuset, Karolinska Institutet, Department of clinical research and education at Södersjukhuset, Stockholm, Sweden

3. Section of Emergency Medicine, Södersjukhuset, 1 Karolinska Institutet, Department of clinical research and education at Södersjukhuset, Stockholm, Sweden

Corresponding author: therese.djarv@karolinska.se

Keywords: non-specific condition, fragility, elderly

Background: Dwindling is a common, albeit unspecific, chief complaint. Dwindling is a term used when the patients has an impaired general condition. Dwindling, as chief

complaint is common in elderly patients and represents several diagnoses.

Aim: To compare the in-hospital mortality among patients presenting with dwindling with those in the corresponding triage category presenting with other chief complaints. A secondary aim was to describe the patients presenting with dwindling with respect to triage priorities, lead times at the ED and discharge diagnoses.

Methods: The study was performed at Södersjukhuset, Sweden and included patients with the chief complaint dwindling (n= 1,484). The control group was composed of all patients other than those presenting with dwindling and admitted to in-hospital care (n= 20,775). Information regarding triage priority, background demographic and comorbidity were collected. Test for significance between cases and controls stratified for triage level was performed with Chi-square for categorical variables including mortality rate respectively Kruskal-Wallis for continuous variables.

Results: In all 911 patients (61%) with dwindling was admitted into hospital and their in-hospital mortality rate was 9% compared to patients presenting with other chief complaints in-hospital mortality rate of 3%. Patients with dwindling received less often than controls the two highest triage categories (red, 3% and 11%, as well as orange 14% and 29%, respectively) and more often lower triage categories (all p-values <0.01). The most common group of discharge diagnoses were infections (25%).

Interpretation: Patients presenting with dwindling at EDs, often receive low triage priority, often needs admission into the hospital and have a high in-hospital mortality rate. These results support that patients presenting with dwindling as chief complaint represent a so far unrecognized high risk group in EDs.

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INVESTIGATION OF FREQUENCY OF DIFFERENT DISEASES IN NORTHERN AND SOUTHERN GEOGRAPHICAL AREAS OF TEHRAN (THOSE WHO HAVE BEEN REPORTED TO 115 EMERGENCY SERVICES)

Mohammad Kalantari Meibodi (1), Samira Esfandiyari (2)

1. emergency medicin, shiraz medical university, shiraz, Iran, Islamic Republic of

2. pediatric ward, student reasearch committe shiraz medical science ,shiraz, shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: education, disease, difference

Intruduction:Urban society hosts many cultural, economical and social differences. Social, economic and cultural conditions in the area of dwelling of a family may be a cause of high-risk behavior and high frequency of specific diseases. Because the process of decision-making should be

based on necessities created by time and region, extensive knowledge of conditions prevalent in each area could have a positive effect on the consequences of those decisions, specially the first and immediate level consequences that in this case constitute the prevention of disease. Such knowledge also could result In practical benefits, such as building and equipping health centers where they are needed and other actions related to heightening the ability of authorities to tackle health problems at third level. It is thus needed to gather and organize information from 115 emergency centers for each area and terrify the kind of medical expertise required to tackle health related problems of that area.

Method: At the beginning, four emergency teams each consisting of two trained technicians and each equipped with one vehicle were used. Two of the teams were deployed to southeastern Tehran while the other two were deployed to the northeast. These teams were commissioned to transfer patients to nearest hospital after receiving emergency calls. Those the received summary treatment were not included in our study. After dividing patients into categories of cardiovascular, Bronchitis, non-drug abuse suicidal, poisoning and accidents the following results were observable

Results:Car accidents were the most frequent causes of emergency calls both in southern and in northern areas of Tehran. The number of accidents and the related frequency of death and injury were greater for northern Tehran. In ass cases, men were more involved in accidents. The only cause of emergency calls for which women were more the actuators was suicide. In both northern and southern areas, car accident and poisoning happened mostly to those between 18 and 27. Among areas, the frequency was higher for northern areas than for the southern. In northern areas of Tehran, addictive drug abuse was more frequent in men while non-addictive drug abuse was more frequent in women.

In southern areas of Tehran, most incidents of poisoning and drug abuse in both sexes were of addictive type.

We divided our sample in each area into age groups of 18-28, 28-37, 38-47, 48-57, 58-67 and 68-77. In both northern and southern areas, the highest rates of poisoning and accidents belonged to 18-27 age groups and the most frequent cause of emergency calls related to 48-57 age groups was heart condition. The rarest cause of emergency calls for both southern and northern areas was manslaughter, though the absolute number of this was greater for southern areas and the age group involved mostly was 18-27 age groups.

Conclusion:It could be concluded that more attention should be allocated to equipping medical centers according to causes of medical conditions and type of illnesses rife in each area. Experts in trauma treatment and surgeons and toxicologists should be employed in centers where such occurrences are to be expected to reduce the current mortality rates

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HOSPITAL DISASTER PLANNING

Samira Esfandyari (1), Mohammad Kalantari Meibodi (2)

1. *pediatric ward, student research committee shiraz medical science, shiraz, shiraz, Iran, Islamic Republic of*

2. *emergency medicine, shiraz medical university, shiraz, Iran, Islamic Republic of*

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: disaster, management, hospital

Back ground:

Considering the importance of emergency medical practice as a therapeutic specialty both of medical sciences and management science and taking into account our country's being the fourth Asian country in regard to frequency of Natural disasters and 10th country in the world as regards the same, also considering that our country is located in an earthquake prone area and possesses a variety of climates and Topographies and a land surface of 1648195 square kilometers, it's logical to think and plan in advance for disaster management and so an emergency reaction program has been prepared and executed in one of referral hospitals in Tehran.

Methods:

First of all we have defined clinical crisis as a situation in which a hospital is not able to cope based on its normal daily capacity. Such situations include incidents which are not normally expected and which may result in considerable number of deaths and injuries. Such numbers as couldn't be handled through hospitals normal procedures and may overwhelm even the normal flow of work in the current study a formerly prepared procedure used in American and European hospitals is taken as the base on which the study is conducted. The modes are then modified as dictated by climatic, cultural and clinical conditions of Iran. An aerial map of Iman Hossein hospital (for which the study is conducted) is used to depict the positions of field units and command centers both when it's partially dilapidated. Necessary training based on this procedure was provided to the staff and the program was followed to the practice phase and a maneuver was then conducted.

Results:

The program should be prepared in such a way to constitute immediate establishment of crisis committee comprised of :

1) head of the hospital who should direct the operation and make contacts to other organization such as fire department and the red crescent and 115 Emergency services, 2) Para clinic unit (including laboratory, Radiology and blood bank), 3) nursing unit (triage, coordination), 4) guarding unit and sentinels, 5) dispatching and discharging unit, 6) psychiatric and social work unit, 7) freezers and refrigeration unit, 8) emergency evacuation unit, 9) installations and maintenance unit, 10) logistics and transport unit, 11) communication unit, 12) public relations and media unit, 13) reception unit, 14) bio Nucleochemical unit, 15) specialized units

Each unit is headed by a director for whom 3 surrogates should be designated who would immediately take the

director's place if and when necessary. The operation would begin by an announcement by the head of the crisis management headquarters of the university to the head of the hospital as the field commander. Instructions are then given by the latter to unit directors who then muster their staff to execute the predefined tasks. After completion of assigned tasks and receiving confirmation by higher positions in the chain of command the mission would be considered accomplished.

Discussion:

A study of natural disasters in the past reveals a failure by authorities to contain such situations. Taiwan earthquake of America's revealed Bio-nucleochemical emergency coping deficiency are among cases which guide us towards more stern planning as regards reacting to unexpected crises. After preparing such plan extensive and comprehensive training should be given to hospital staff or whoever which would be engaged in such reaction. Eventually the readiness of the staff should be evaluated through simulated situations and maneuvers. It's hoped that God willing we could reduce losses caused by Natural disasters in the future

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ANALYSIS OF JUDICIAL CASES AT EMERGENCY DEPARTMENT

Meltem Seviner (1), Nalan Kozaci (2), Mehmet Oguzhan Ay (3), Ayca Acikalin (4), Alim Cokuk (5), Muge Gulen (3), Selen Acehan (3), Meryem Genc Karanlik (6), Salim Satar (3)

1. *Emergency Medicine Service, Hatay State Hospital, Hatay, Turkey*

2. *Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey*

3. *Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey*

4. *Emergency Department, Cukurova University, School of Medicine, Adana, Turkey*

5. *Emergency Medicine Service, Kirklareli State Hospital, Adana, Turkey*

6. *Emergency Medicine Service, Kilis State Hospital, Kilis, Turkey*

Corresponding author: droguzhan2006@mynet.com

Keywords: Emergency, forensic case, forensic report

Aim: In this study, we aimed to analyze the demographic and epidemiological features, life-threatening nature of the forensic reports, the status of simple medical intervention and outcomes of judicial cases admitted to emergency department.

Material and Methods: Judicial cases, admitted to the emergency department between 01.12.2009 - 31.12.2010 were included in the study. Patients were evaluated from the patient cards retrospectively. Categorical data summarized as number and percentage, numerical measurements summarized as mean and standard deviation. SPSS 17.0 package program was used for

statistical analysis of data. The statistical significance level of all tests was $p < 0.05$.

Results: Of the 5870 judicial cases, 63.78 % were male and 36.22 % were female. Mean age of patients were 33.75 ± 12.4 years. Traffic accident (27.3 %), intoxication (24.3 %) and to be beaten (17.6 %) were the first three judicial events. Traffic accidents were seen in males between 26-33 ages mostly and intoxications were seen in females between 18-25 ages commonly. The most reason of injuries were limb injuries with 2404 cases. 73.3 % of patients were discharged and 26.3 % of patients were hospitalized. 0.3% of forensic cases (19 patients) died in the emergency department, 0.1% (4 patients) died before hospital admission. Death was mostly seen as traffic accidents and fall from height. When forensic reports were evaluated, 28.8 % of males and 11.3 % of females were not resolved with simple medical intervention. Only 3336 (56.8%) forensic reports of all forensic cases were stated in a life-threatening situation. 21.1 % of the patients with a life-threatening situation of the current was life-threatening.

Conclusion: Forensic cases are most commonly seen in young adult males and ages between 26-33. The frequency of diagnoses in male and female patients are different from each other. Forensic cases require hospitalization rate as high as 26.3%, although the danger of life in 21% percent, the mortality rate is 0.3 % in emergency department. The life-threatening condition is necessary to define in reports, but in nearly half of the forensic reports it is not written. In order to prevent the victimization of individuals and unnecessary loss of benefits, the physicians also must write appropriate, clear and understandable forensic reports as well as the best treatment responsibility.

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CHARACTERISTICS OF THE PATIENTS WITH NON TRAUMATIC ABDOMINAL PAIN WHO VISITED THE EMERGENCY DEPARTMENT DURING THANKSGIVING HOLIDAY

Hee Cheol Ahn (1), Seung Min Park (1)

1. Emergency department, Hallym University Medical Center, Anyangsi, Korea, (South) Republic of

Corresponding author: aukawa1@naver.com

Keywords: Abdominal pain, Thanksgiving holiday, Prognosis

Purpose: This study was to investigate clinical characteristics and severity-related factors in patients suffering from non-surgical abdominal pain who visited a emergency department during thanksgiving holiday.

Methods: We conducted a prospective study of 240 patients who came to the ER with acute abdominal pain between September 29, 2012, and October 3, 2012. We excluded patients who suffered from abdominal pain due to surgical abdomen, previous gastrointestinal illness, and the age under 13. We collected clinical data of patients including symptoms, physical examinations, laboratory

findings, radiographic findings, and prognosis according to the protocol.

Results: 270 patients(18% of total patients who visited the ER) suffered from abdominal pain and 88% of them were diagnosed as acute gastroenteritis. Most common combined symptom was diarrhea(32 patients). 25 patients had a fever(body temperature $>38^{\circ}\text{C}$). 30 patients were categorized as severe abdominal pain. They had tachycardia, increased platelet count, increased BUN, and increased AST without previous liver disease($p < 0.05$).

Conclusion: The cause of abdominal pain was noninfectious origin in the majority of cases that patients with visited the ER of the secondary medical center on the thanksgiving holiday. Most patients were cured by conservative therapy.

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IMPROVEMENT THE PATIENT SAFETY IN TACHYCARDIA MANAGEMENT.

TACHYCARDIA. CHECKLIST. PATIENT SAFETY.

Daniel Fernández Vargas (1), David Godoy Godoy (2), Marina Buforn Jiménez (1), Susana Martín Caravante (2), Ana José Duarte Romero (1), Eduardo Rosell Vergara (1)

1. Emergency Department, Hospital Clínico Virgen de la Victoria, Málaga, Spain

2. Emergency Department, Distrito Málaga, Málaga, Spain

Corresponding author: dafevargas@icloud.com

Keywords: Tachycardia, Checklist, Patient Safety

INTRODUCTION. The progressive development of culture in Patient Safety, defined as the prevention of patient injury or adverse event (AE), or arising out of the care processes (1), has prompted us to make an analysis of the situation in our area of emergency, making criticism of the current situation (2)(3) that drives us to enhance and develop different strategies in Patient safety during clinical care in the Spanish Hospitals and Extra-hospital Emergency Departments. The characteristics in the way of working in the Emergency Area (4) (multitasking and interdisciplinary nature of the work, frequent distractions, multiple shift changes and transitions in care, high exposure to decision making, problems of varying severity undifferentiated from onset, fatigue and lack feed-back), may favor the development of AE. Likewise, arrhythmias are a frequent complaint in the Spanish Emergency Departments (5).

OBJECTIVE. Improve the Patient Safety and minimize errors that are associated with the management of tachycardia disease, making a checklist to ensure the availability of physical and pharmacological resources.

METHOD. Development of a checklist according to the Guidelines 2010 of the European Resuscitation Council (ERC) on management of tachyarrhythmias with pulse (6) and the last review of guidelines 2012 for Management of patients with atrial fibrillation in Emergency Departments by the Spanish Cardiology Society and the Spanish

Emergency Society (5). Later, spread the existence of the checklist among the professionals involved.

- Table of ERC Guidelines 2010 -
- Table of Algorithm for the management of Atrial Fibrillation according the Spanish Cardiology Society and the Spanish Emergency Society consensus Guidelines 2012 -
- The Check List -

RESULT. It has made a checklist easy to follow and adapted to the characteristics of our Emergency Department for joint action of doctors and nurses in the process. There is awareness of project among the professionals involved and there is easy access to the list in the "critics-box" and in the observation area where acute management is performed.

DISCUSSION. The completion of the Check-List, and the activities in the department intended for the dissemination of the list, facilitates the performance of the same and therefore, we believe it will reduce the probability of occurrence of AE in managing care of tachycardia with pulse. It is an opportunity too to disseminate the Culture of Patient Safety in the Emergency Departments, and we hope the professionals will be interested in other measures to prevent AE and enhance Clinic Patient Safety. Finally, we note that with the recent addition of the Check-List to our Department, we will need time to evaluate results in the reduction targets of adverse effects.

KEY WORDS: Tachycardia (MeSH), Checklist (MeSH), Patient Safety (MeSH), Atrial Fibrillation (MeSH), Pharmacological Cardioversion.

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EVALUATION AND TREATMENT OF LUMBAR SPINE INJURIES DURING SPORTS ACTIVITY

N. Syrmos (1,2), A. Mylonas (2), Ch. Iliadis (1), G. Gavridakis (3), V.Valadakis (1), K. Grigoriou (1), D. Arvanitakis (1)

1. Neurosurgery Department, Venizeleio General Hospital, Heraklion, Crete, Greece
2. Department of Anatomy, School of Sports Science, Aristotle University of Thessaloniki, Macedonia, Greece.
3. Ct-scan Department, Venizeleio General Hospital, Heraklion, Crete, Greece

Corresponding author: milanako76@yahoo.gr

Keywords: LUMBAR, SPINE, INJURIES

Aim of this retrospective study was to describe the management and the outcome of cases with lumbar spine injuries during sports activity admitted our hospital during a 10 year period (2001-2010) . A retrospective analysis was performed in all of the case notes of consecutive cases of cervical spine injuries during sports activity . 131 individuals (90 men , 41 women , median age 39 years , range 16-62 years) presented to the outpatient department and 44 were admitted . The average length of stay was 10 days. The major parts of the injuries were caused by sports accidents. Accurate support for patients with lumbar spine injuries appears to be necessary during the hospital permanence.

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INITIAL MANAGEMENT AND PRIMARY HEALTH AID IN CASES WITH SPINAL INJURIES DURING SPORTS ACTIVITY

Syrmos Nikolaos (1,2), Kapoutzis Nikolaos (1), Televantos Andreas (1), Mylonas Argyrios (2)

1. Surgical Department, Goumenissa General Hospital, Greece.
2. Department of Anatomy, School of Sports Science, Aristotle University of Thessaloniki, Macedonia, Greece.

Corresponding author: milanako76@yahoo.gr

Keywords: spinal injury, primary health aid, management

Aim of this study was to describe the initial management and the primary health aid in cases with spinal injuries during sports activity admitted to a rural district hospital during a 10 year period (2000-2010) . A retrospective analysis was performed in all of the case notes of consecutive cases of spinal injuries. 88 individuals (60 men , 28 women , median age 39 years) presented to the

outpatient department and 21 were admitted . The average length of stay was 7 days. Accurate initial support for spinal injury patients appears to be necessary during the hospital permanence.

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THE RELATION BETWEEN ORAL CONTRACEPTIVE USE AND ACUTE THROMBOEMBOLIC EVENTS

Alireza Baratloo (1), Mohammadmahdi Frouzanfar (1), Pauline Haroutunian (2), Behrooz Hashemi (1), Maryam Motamedi (1), Farhad Rahmati (1), Alaleh Rouhipour (3), Saeid Safari (1)

1. Emergency department, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of

2. Medical department, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of

3. Pediatric, Private, Karaj, Iran, Islamic Republic of

Corresponding author: alirezabaratloo@yahoo.com

Keywords: oral contraceptives, thromboembolic events, risk factors

Background:

Oral contraceptives were introduced in the late 1950s, and in the early 1960s, an association between venous thrombosis and pulmonary emboli and Oral contraceptives use was indentified. In response, the amount of estrogen used in these contraceptives was decreased. Later the concept that reducing the dose of estrogen would eliminate the risk of venous thrombosis was strongly challenged and studies were done to indentify the risk factors other than the estrogen dose, which may cause thromboembolic event due to oral contraceptives use.

Methods:

Via MESHWORDS Oral contraceptives AND (thromboembolic events OR thromboembolism) in www.pubmed.gov, 600 articles were found among which only 20 articles were relevant to our study subject. The articles were reviewed and the results were summarized in tables.

Results:

The relevant articles were reviewed and their data according to the level of the evidence, were summarized in the tables and it was found that there are other risk factors apart from estrogen dose used in the oral contraceptive preparations like, age of the women using these preparations, type of combined oral contraceptives and their generations, according to the type of progestogene used in them , cigarette use, the duration of use, diabetes, hypertension, hyperlipidemia, coagulation factors gene mutations like mutation in factor V Leiden and prothrombin gene mutations, BMI and weight, immobility of the patient for any reason, which may cause or facilitate the thromboembolic event to happen.

Conclusion:

Although, having a risk factor for thromboembolic event may not be an absolute contraindication to the use of oral contraceptives, physicians should keep in mind all the risk factors for VTE while prescribing these preparations and consider other birth control methods other than using oral contraceptives.

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Rez de Jardin poster area

FACTORS INFLUENCING PREVENTIVE BEHAVIORS OF HOME INJURIES AMONG MOTHERS WITH PRE-SCHOOL CHILDREN IN EMERGENCY DEPARTMENT

Hamid Reza Hatamabadi (1), Soad Mahfoozpour (2), Somaieh Younesian (3)

1. Emergency department, Safety promotion and injury prevention center, Tehran, Iran, Islamic Republic of

2. Shahid beheshti university of medical sciences, Safety promotion and injury prevention center, Tehran, Iran, Islamic Republic of

3. Emergency department, Shahid beheshti university of medical sciences, Tehran, Iran, Islamic Republic of

Corresponding author: hhatamabadi@yahoo.com

Keywords: preventive behaviors, home injury, pre-school children

Objective: This study aimed to examine the relationship between demographic factors and knowledge and attitudes of mothers and how they answer the question by adopting preventive behaviors and which of the factors that facilitate or hinder the adoption of preventive behaviors.

Method: this descriptive-analytical study was done among mothers of preschool children with home injuries referred to Emergency Departments of Imam Hossein and Haft-E-Tir Hospitals. Mothers' data were collected using a valid and reliable questionnaire. After sharing the levels of knowledge, attitudes and preventive behaviors of mothers into two groups, the relation between the factors and the situation of preventive behaviors was considered using chi-square test and multivariable logistic regression.

Results: totally 230 mothers (mean age 5.2 ± 29.4) participated in this study. 75.0 % of them had good knowledge, and 46.2 % also had good attitudes. High knowledge (18.4 = OR), good attitude (7.6 = OR), having at least three children (0.12 = OR), absence of the mother for at least 8 hours (0.019 = OR) and history of home injury during the past 3 weeks (0.09 = OR) were the independent factors that were associated with the state to adopt preventive behaviors.

Conclusion: Increase the awareness and attitudes of mothers were the facilitating factors and mother's absence from home more than 8 hours and having at least 3 children are the barriers which avoid adopting effective preventive behaviors.

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Rez de Jardin poster area

WHAT WAS THE ANALYSIS OF OUR PATIENTS WITH ABDOMINAL PAIN FOR THE YEAR 2012 IN ESKISEHIR OSMANGAZI UNIVERSITY EMERGENCY DEPARTMENT

Adnan Sahin (1), Nurdan Acar (2), Arif Alper Cevik (2), Mustafa Emin Canakci (2)

1. General Surgery, Eskisehir Osmangazi University, Eskisehir, Turkey

2. Emergency department, Eskisehir Osmangazi University, Eskisehir, Turkey

Corresponding author: nn_ergun@yahoo.com

Keywords: abdominal, emergency, pain

Objective: We describe what was the definition of our patients with abdominal pain annually for the year 2012. **Method:** We analyzed the patients in our university hospital emergency department (third level medical center) at Jan 1st and Dec 31st 2013. We made a description of the patients with abdominal pain for what were the final diagnosis, outcome, sex and mean of age. **Results:** Total 3998 patients visited emergency department on Jan 1st to Dec 31st 2013. Mean age of all patients was 47.85±20.76 (19-92). 2233 of total patient number was female (%55.85) and 1765 of them was male (%44.14). Mean age of female patients was 47.50±23.33 and mean age of male patients was 48.35±39.59. Diagnosis of patients was pointed out as: 1474 (36,86%) dyspepsia, 279 (6,97%) acute pancreatitis, 234 (5,85%) gastroenteritis, 233 (5,82%) Urinary tract infection, 117 (2,92%) acute appendicitis, 111 (2,77%) dysmenorrhea, 109 (2,72%) functional bowel disease, 92 (2,3%) acute gastritis, 90 (2,25%) renal colic, 86 (2,15%) diabetes mellitus-associated abdominal pain, 85 (2,12%) cholecystitis, 68 (1,7%) ileus, 65 (1,62%) pregnancy-associated abdominal pain, 60 (1,5%) hypertension, 52 (1,3%) cholelithiasis, 47 (1,17%) constipation, 45 (1,12%) colon cancer, 36 (0,9%) angina pectoris, 30 (0,75%) upper respiratory tract infection, 29 (0,73%) GIS hemorrhage, 27 (0,67%) chronic renal failure, 19 (0,47%) anemia, 18 (0,45) acute renal failure, 16 (0,4%) heart failure, 16 (0,4%) respiratory failure, 16 (0,4%) gynecologic, 15 (0,37%) COPD, 13 (0,33%) abdominal hernias, 13 (0,33%) stroke, 11 (0,27%) peritonitis, 9 (0,22%) gastroesophageal reflux, 483 (12,08%) others (3998, 100%, total). Final outcome were as follows: 688 hospitalization in to intensive care unit (included in to operation room directly), 404 hospitalization in to surgery ward, 230 not accepted treatment. 7 of total patients was sent to other medical centers for demand of patients (for following at that centers) 21 of total patients was dead: 8 cardiac arrest at arrival, 3 had various malign neoplasm, 2 had hypertensive and 2 had dyspeptic symptoms at arrival, 1 had aortic aneurism, 1 had acute renal failure, 1 had chronic obstructive pulmonary disease and 1 had thrombocytopenia. Mean age of patients sent to directly intensive care unit was 59.87±10.60 and sent to home was 38.50±13.44. **Conclusion:** Dyspepsia was the most common diagnosis during the year 2012. Although numbers of diagnosis were thought, doctors should keep in mind the most potential life threatening situations out of abdominal

area as acute myocardial infarction. There was no relation between diagnosis and months.

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Rez de Jardin poster area

RISK FACTORS IN SOFT CRANIAL TRAUMATISM.

Ana Isabel Condon Abanto (1), Sara Visiedo Sanchez (1), Teresa Escolar Martínez-berganza (1), Jose Luis Del Rio Aisa (1), Miguel Rivas Jiménez (1), María Peña Lopez Galindo (1)

1. Emergency department, HCU Lozano Blesa, Zaragoza, Spain

Corresponding author: anusketa_85@hotmail.com

Keywords: Soft Cranial Traumatism, Risk Factors, Injure

Introduction: Cranial traumatism is a growing cause of medical visits in emergency departments in Europe. This cause represents a high number of hospitalizations with an important social and economic cost.

Objectives: To determinate the profile of patients who present soft cranial traumatism (CT) or mild traumatic brain injury (MTBI) in our emergency department and analyze factors related to clinical safety in caring for these patients.

Patients, materials and methods: A retrospective observational study of all patients overage 14 years old treated in the emergency department of a University Hospital (870 beds) with CT / MTBI from 1 January 2012-31 of June 2012. For data collection, we designed a card with the sociodemographic, clinical and management items study. Data were analyzed using SPSS 18.

Results: During this period described 130,000 were treated in our emergency department. In the study it were obtained 272 cases of CT/MTBI. 46.7% were men with a middle age of 56.51 + / -1.48 years old. 30.8% of patients had one risk factor for having a complication result of CT. 45.8% 2 2.9% 3. Related to the more fequent medical history: 12% cerebrovascular accident, cognitive impairment 12.9%, 7.7% chronic alcoholism. The 8.4% acute alcoholism. 48.4% of the patients were taken antiplatelet treatment and 7.7% anticoagulants. It was seen that from the group of patients that had risk factors; 65% had neurological symptoms. 80% Glasgow: 15 and normal physical examination in 75% of cases. 10% of patients with risk factors for developing a complication related with cranial traumatism underwent TC, of which 10% proved to be pathological. The more risk factors patients had, more risk of injury patients had. (Spearman: 0.013).

It is surprising the number of patients with antiplatelet and anticoagulant treatment. Data from our study could conclude that the use of clinical guidelines for the management of MTBI and clinical scales when applying TC should be increase because of the low probability pathological findings and low complication rate.

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Rez de Jardin poster area

EVALUATION OF COST AWARENESS OF PARACLINIC PROCEDURES AMONG EMERGENCY MEDICINE RESIDENTS OF IMAM HOSSEIN HOSPITAL

Shamila Noori (1)

1. Emergency Medicine department, Imam Hossein hospital, Tehran, Iran, Islamic Republic of

Corresponding author: hojjatderakhshanfar@yahoo.com

Keywords: cost, medical economics, graduate medical education

Background and aims: Previous studies in different countries have reported that the knowledge of the physicians about the costs of diagnostic tests and treatments was poor. The aim was to evaluate the awareness of the residents of Internal medicine, General Surgery, Pediatrics, Obstetrics and gynecology and Emergency medicine at Imam Hossein hospital about the costs of the diagnostic tests.

Material and Methods: This study was performed on 90 residents of Imam Hossein hospital in Jan, 2013. A questionnaire was designed and answered by the residents. The cost of the diagnostic tests and images was asked from the laboratory and radiology centers. Data were analyzed by Chi-square and Fisher Exact test.

Results: Mean and standard deviation for the age of the participants was 32.7±3.9. Among the participants, 94.4% were not aware of the costs. Most of them reported the knowledge of themselves and the attending physicians as moderate. Residents were poor in estimation of the costs. 46.7% of the residents estimated the cost of abdominal sonography correctly. The percent of correct cost-estimations was as follows: CXR=37.8%, Troponin=35.6%, head CT=25.6%, U/A=13.3%, CBC=8.9%, ESR=1.1%. Their attitude toward the necessity of awareness about the costs was positive in 92.2% of the cases.

Conclusions: The knowledge of the residents about the costs of Para clinical tests was poor; however they believe they should be aware of the costs and apply it in their clinical practice.

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Rez de Jardin poster area

RESIDENTS SELF-ASSESSMENT IN AN EMERGENCY MEDICINE OBJECTIVE STRUCTURED CLINICAL EXAMINATION

KEY WORDS: SELF-ASSESSMENT, OSCE, EMERGENCY MEDICINE

Anita Sabzghabaei (1), Majid Shojaee (2)

1. emergency department, hospital shohadaye 7th tir, TEHRAN, Iran, Islamic Republic of

2. emergency department, hospital emem hosein, TEHRAN, Iran, Islamic Republic of

Corresponding author: asabzghabaei@gmail.com

Keywords: self-assessment, OSCE, emergency medicine

Background:

The objective structured clinical examination (OSCE) is an effective instrument for evaluation of student education. Self-assessment is a useful method to clarify the performance of the students skills.

Objective:

In this study self- assessment scores was compared with OSCE actual scores by use of an standard scale.

Methods:

Emergency Medicine Residents filled a self-assessment questionnaire at the end of their OSCE exam and evaluated their competence at each station. The data were analyzed by SPSS software (v.20) and regression analysis was used for determining correlation between OSCE actual scores and self assessment scores in the stations. A p-value of < 0.05 was considered significant

Results:

Significant positive correlations was seen between residents' actual score and self-assessment rating in chest X-ray (CXR) interpretations, power point making (PPT), ear examination and history taking for post graduated year 1 (PGY1) and acetaminophen toxicity, searching, finding article, triage, advanced cardiac life support (ACLS), suture and Electrocardiography (ECG) interpretation for post graduate year 2 and 3 residents (PGY2). Residents overestimated their performances as following: wound description, head and neck computed tomography (CT) scan, ECG and chest and Abdominal Radiography interpretation and the PGY2 residents overestimated writing order, ECG and Magnetic Resonance Imaging (MRI) interpretation, Ultrasound (US) and eye examination skills.

Conclusion:

Our findings suggest that Emergency Medicine residents demonstrated poor accuracy of the self-assessment comparing to their own performance.

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EVALUATION OF EMERGENCY MEDICINE TRAINING PROGRAMS IN EGYPT: TRAINEES PERSPECTIVE.

Tamer Montaser (1,2), Ahmed Hassan (3)

1. Emergency Department, Cairo University Hospital, Egypt.

2. Emergency Department, Prince Mohamed bin AbdulAziz Hospital, Riyadh, KSA.

3. Emergency Department, King Khalid Hospital, King Saud University, Riyadh, KSA.

Corresponding author: tamer_montaser@yahoo.com

Keywords: Emergency, Training, Egypt

Background and Objectives: Emergency medicine (EM) is in the early development phase in Egypt. There is an Egyptian Board of Emergency Medicine that has been in existence for approximately 10 years, along with academic master degree in EM from three medical schools (Alexandria, Tanta

and Suez Canal). Until now, there is not a specialty society in emergency medicine or national annual meetings to evaluate the training progress and give the trainees the chance to see and be seen. It is known that each program has two-folded objectives; the organization's objectives and the objectives of the individual. It is the goal of the study to emphasis on the trainees view toward the Emergency medicine training.

Methods: A questionnaire based survey of the satisfaction with EM training in Egypt among trainees who are doing residency or fellowship.

Results: 88 physicians filled the questionnaire; 18 trainees at the three medical schools for master degree and 70 at Egyptian board program. 100 % of the participants were unhappy with their training. 57 (65%) agreed that they are working without any or under unprofessional supervision, while 82 (93%) reported unclear job description and lack of practical and applicable training policy. 36 (41%) were thinking to change the career, while 17 (19.3%) already enrolled in another post-graduate specialty certificates e.g. MRCS (UK), MRCP (UK) and academic masters.

Conclusions: Egyptian Emergency medicine trainees are not satisfied with their training and owing that to the unclear vision toward Emergency medicine as specialty from the policy makers and lack of professional staff responsible for education and evaluation. It is highly recommended that the training and mentoring go hand in hand and trainees should take part in the continuous evaluation process.

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Rez de Jardin poster area

WHY THE ATLS® "ABCDE" METHOD IS USEFUL IN NURSE SCHOOL IN FRANCE?

Loic Coutry (1), Ismael Hssain (2), Patrick Schoettker (3)

1. Emergency Medicine Department, CH BAYONNE, BAYONNE, France

2. Emergency and Disaster Medicine Department, CH MULHOUSE, MULHOUSE, France

3. Anesthesia Department, CHUV LAUSANNE, LAUSANNE, Switzerland

Corresponding author: ihssain@icloud.com

Keywords: Education, Trauma, Assessment

Introduction

Assessment of the quality of education in Nurse School by analysis of students' knowledge before and after training following the elaboration of a new "Trauma" module incorporating the pedagogy of the ABCDE of the ATLS® (American Committee of Surgeon ACS).

Method

Pre and post-test survey, with five multiple-choice questions for each period, performed before and after instruction from a promotion of 170 freshmen.

Responses were compared with the Mac Nemar statistic test.

Results

Participation in the study was 90%.

After the course, 98% students protected themselves by wearing gloves and assessed the safety of the premises before patient care.

In trauma case, 98% (vs. 58%) of students applied ABCDE philosophy and began with airway management in cases of acute respiratory distress.

About the concept of shock, 56% (vs. 28%) of students recognized tachypnea, tachycardia and moist skin like earliest signs of hemorrhagic shock.

41% (vs. 16%) of students answered correctly on importance of C5 level in spinal cord injury.

47% (vs. 25%) of students joined the spirit of the new module that integrates trauma at the cellular level and the need of oxygenation.

All responses increased significantly.

The overall rate of correct answers increased from 49% to 70%.

Discussion

This survey was proposed to students in their first academic year.

Emphasis was placed on the pathophysiological mechanisms of trauma but some concepts are difficult to learn for those learners who are not yet versed in the practice of research and personal work.

During their training, students were faced with conflicting references.

It is therefore proposed to shift this teaching in the academic year, multiply the practical prerequisites and provide educational support to facilitate the detailed understanding.

The ABCDE rule has been applied successfully.

Conclusion

This survey showed that the path of the ATLS® teaching is relevant and easily transferable to Nurse School. The philosophy of ATLS®, like in ATCN® or AMLS® course; can teach reflexes necessary to perform future of our young nurses in each part of world, even in France and why not in Medical school.

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Rez de Jardin poster area

WHY TO TEACH PHTLS IN FRANCE?

Raphael Barriere (1), Loic Coutry (2), Ismael Hssain (1), Patrick Schoettker (3)

1. Emergency and Disaster Medicine Department, CH MULHOUSE, MULHOUSE, France

2. Emergency Medicine Department, CH BAYONNE, BAYONNE, France

3. Anesthesia Department, CHUV LAUSANNE, LAUSANNE, Switzerland

Corresponding author: ihssain@icloud.com

Keywords: evaluation, training, PHTLS

Introduction:

Created in the United States under the auspices of the NAEMT (National Association of Emergency Medical

Technicians), the PHTLS® (Pre-Hospital Trauma Life Support) teaches trauma patients management following the criteria of ATLS® (Advanced Trauma Life Support) for the pre-hospital setting. It relies on a rapid assessment with an established systematic approach of the patient. Based on the "ABCDE", this approach is designed to assess life-threatening injuries of the airway, breathing, circulatory and neurological system and initiate first steps in resuscitation of the patient based on vital priorities: "Treat first what kills first"

To date, the PHTLS is taught to pre-hospital providers in more than 50 countries, including France since 2003. Its certification is valid for 4 years.

But what are the benefits? In what way does this American-based education, originally intended for American paramedics, benefit to the French pre-hospital providers, which includes physicians and ambulance-officers with different trainings and in a system that differs from the one this course was initially designed for?

Methodology

A questionnaire was sent to all in France trained PHTLS students during an academic year.

The evaluation focuses on the relevance of the theoretical content, the methods of teaching and training as well as the practical on-scene impact of the PHTLS principles.

Results

191 questionnaires were sent out, with a response rate of 63 (33%).

Positive feedbacks:

The original method of assimilation with pre-learning followed by alternating theory and practice with a systematized approach to the patient was well received.

The course duration of 2 days allows easy accessibility.

The updating of knowledge and skills every 4 years was also perceived as useful.

The multi-disciplinary group effect simulates the on-scene situations, sharing knowledge and skills to adopt a common language for the management of critical trauma patients.

Negative feedbacks:

The shortness of training is considered too condensed and requires a pre-learning period for an extensive book.

Some chapters are perceived by learners as daunting but deemed necessary by the trainers.

Physicians, who are expecting more technical and advanced gestures, do not always appreciate this teaching, which is delivered to different medical and paramedical professions.

Conclusion

The popularity of this training cannot be denied: 4,000 people trained since 2003 in France with 28 training sessions in 2011.

For its innovative concepts, the PHTLS may be a useful adjunct to the management of trauma patients in the French pre-hospital setting.

In addition, four times more manual is sold than providers trained, which demonstrates a strong interest in the PHTLS course.

Hopefully, the medical course Advanced Medical Life Support AMLS will grow up like its big brother.

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Rez de Jardin poster area

#EMERGENCYMEDICINEEDUCATION; WEB 2.0 AND TRAINING IN EMERGENCY MEDICINE

Ewan Barron, Suzie Key

Emergency Medicine, East Midlands Healthcare Workforce Deanery, Nottingham, United Kingdom

Corresponding author: ewan.barron@doctors.org.uk

Keywords: Web 2.0, Social Media, Medical Education

Introduction

Web 2.0 technologies provide educationalists with new ways to engage students. Medical and continuing education is evolving. This project was one of the first to use Web 2.0 technology, focusing on medical student education within the emergency department.

Background

Web 2.0 describes websites that use interactive technology, they allow users to interact and collaborate through the use of social media, creating user-generated content in a virtual community. This contrasts to classic websites which are limited to passive viewing of content. Examples of Web 2.0 include; social networking sites (Facebook, Twitter), blogs (Tumblr), wikis (website allows users to add and modify content), and video sharing sites.

Methods

The concept of Web 2.0 use was explored teaching 4th year medical students. A four person student group was recruited during a student selected component of the medical curriculum. Every student must complete this component; however they may choose the subject from a database of options. The component runs alongside the core curriculum for a period of four months.

Student objectives for the course component.

1. To learn how to undertake a structured literature review
2. To produce a literature review on one aspect of emergency medicine
3. To create a reflective log using social media on the project – this should reflect on personal opinions on the subject chosen for literature review but should also reflect on the methods of interaction with the supervisor

Supervisor objectives

1. To educate students regarding undertaking a structured literature review
2. To use predominantly social media to interact and give feedback on student progress
3. To facilitate debate within the group through the medium of social media

The supervisor used the common social media utilities of twitter, facebook, and a custom blog, creating private accounts solely for use during this project. Students also had their first exposure to the emergency department in a major city trauma centre. No patient identifiable information was allowed to be shared.

Results

Multiple different interactions were used during the project. Initial meetings were conducted using video-conferencing. Information was posted on a private blog students could access. Video podcasts, power point

presentations and e-links to further information were available. The supervisor used Facebook and Twitter accounts to engage the students. After a period of slow engagement, students were exposed to a week of shadowing within the emergency department.

At this stage the use of social media escalated, real time updates and reflections were updated on twitter and facebook accounts. The supervisor was updated in real time and could interact, asking questions and stimulating debate in real time. Students were remotely encouraged to ask questions, both of their supervisor and to the shop floor staff.

The updates on social media were then reviewed at a later web-conference and discussed further. This information formed the basis for the student's reflections on their exposure.

Discussion

As one of the first projects to engage students in this way, it was important to get feedback from the students involved. Students stated they enjoyed the ability to update and discuss on the move. This feature of the project was echoed by the supervisor. This learning experience was different from any they have had in the past, students felt able to engage with their learning experience, they were able to debate in a virtual setting, 24h per day, not confined to the classroom for a one hour lecture. They stated that having the blog gave them the ability to update and ask questions privately and in the group forum. One student stated that they felt more able to ask questions and ask for clarification than they would if they were in a group setting.

Students stated that the use of video podcasts was particularly useful, meaning that they could watch the podcast, re-wind and review as necessary, and pause in real time as they used it as a reference to performing a structured literature review.

Conclusion

Social networking encourages development of transferable, technical, and social skills of in formal and informal learning. Use of Web 2.0 technology can enhance the learner's experience within emergency medicine education. With new technology comes the option for deviation away from classic education and learning models towards a multi-stimulus, 24h learning environment.

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Rez de Jardin poster area

INTER-PROFESSIONAL LEARNING IN THE EMERGENCY DEPARTMENT THROUGH IN-SITU SIMULATION

Kim Yates (1,2), Adrienne Adams (3), Jane Francis (1), Carmen Haines (1), Diane Bratton (2), Willem Landman (1,2), Satra Browne (1,2)

1. Emergency Department, Waitakere Hospital, Waitemata District Health Board, Auckland, New Zealand

2. Emergency Department, North Shore Hospital, Waitemata District Health Board, Auckland, New Zealand

3. Emergency Department, Middlemore Hospital, Auckland, New Zealand

Corresponding author: kim.yates@waitematadhb.govt.nz

Keywords: simulation - in-situ, education, inter-professional training

In the Emergency Department (ED) team composition is multidisciplinary and varies from shift-to-shift, and even patient-to-patient on a given shift. Patient safety literature emphasises the importance of teamwork skills and human factors in preventing medical errors. The MedTeams Project showed that formal ED teamwork training improves team behaviours, decreases medical errors and improves attitudes toward teamwork, but finding time for doctors and nurses to train together can be difficult.

Waitemata District Health Board in Auckland, New Zealand has 2 EDs staffed with more than 70 doctors and 200 nurses, many working part-time. The continuing medical education programme consists of weekly meetings with a monthly session at the Waitakere Simulation Centre, however these are primarily attended by doctors. Weekly in-situ simulations at each ED were started as redevelopments occurred such as the expansion of Paediatric services, and the opening of a new ED facility, aiming to include a broader range of staff in the simulations, and improve teamwork. Emergency physicians and nurse educators worked together to develop scenarios that would help improve teamwork and clinical skills, and test departmental equipment and processes. The Waitemata experience of interprofessional learning through in-situ simulation and its evaluation will be discussed.

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Rez de Jardin poster area

EMERGENCY TRAUMA TRAINING COURSE IN TAIWAN

Po-sheng Chih (1)

1. Department of emergency medicine, En Chu Kong hospital, New Taipei City, Taiwan

Corresponding author: pschih@hotmail.com

Keywords: Trauma resuscitation, Advanced trauma life support (ATLS), Emergency trauma training course (ETTC)

Background:

Trauma resuscitation is challenging and stressful for emergency professionals. A structured management framework and an organized training system are keys to resuscitation outcomes. Although advanced trauma life support (ATLS) had been regarded as a gold standard in trauma management training, the access is limited. In addition to high cost and rigid adherence of instructor to student ratio, ATLS course opens only to physicians. The licensed providers of ATLS were therefore outnumbered by their counterparts of advanced cardiac life support. Emergency trauma training course (ETTC) was developed in Taiwan with the aim to enhance trauma management

education. ETTC involved not only in-hospital resuscitation training, field resuscitation and common surgery techniques that would be useful in daily emergency medicine practices were included. The main target groups spanned from emergency physicians in training, emergency nurses, to all levels of paramedics participated in pre-hospital emergency services. However, the efficacy of ETTC has seldom been evaluated.

Methods:

Questionnaire regarding knowledge acquisition, attitude, and performance confidence of emergency professionals are collected after a standard 2-day course of ETTC in a community hospital in northern Taiwan. Most of the students in the training were nurses from emergency department (ED) and intensive care units with the potential of rotation to ED. There were 37 participants (88%) completed the questionnaire.

Results:

All of the participants responded positively on knowledge improvement after the course. They agreed that ETTC was helpful in relieving the stress when facing major trauma. Their confidence in trauma management increased after training. However, most of the respondents wished no arrival of major trauma patient during their shift.

Discussions:

Major trauma management could be chaotic without well trained personnel and organized system. Due to high demand for trauma training and limited ATLS course availability, ETTC was developed as an alternative for trauma management education in Taiwan. The training efficacy seemed appealing based on the results of this questionnaire. The establishment of ETTC as a competency requirement could be justified. The defensive attitude of the participants to trauma management might not be hard to understand because trauma resuscitation may be overwhelming in a fragile system and understaffed ED. The issue of health policy administration may goes beyond the scope of ETTC.

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Rez de Jardin poster area

EVALUATION OF THE IMPACT OF IMPLEMENTING COMPUTER-ASSISTED TEACHING SYSTEM FOR POSTGRADUATE YEAR-1 RESIDENCY TRAINING ON CLINICAL EFFICIENCY IN THE EMERGENCY DEPARTMENT

Ming Ta Chiu (1)

1. Emergency department, Chang Gung Memorial hospital, Taoyuan, Taiwan

Corresponding author: miltonch777@yahoo.com.tw

Keywords: computer assisted teaching, post-graduate, emergency department

Abstract:

Objectives: To accomplish the mission of teaching the postgraduate year-1 (PGY1) residents efficiently and

maintaining patient safety in EDs, we introduced computer-assisted teaching system (CATS) in EDs of a tertiary hospital. We further analyzed the impact of implementing CATS for PGY1 residency training on clinical efficiency.

Methods: This was a retrospective observational study in a non-trauma urgent treatment area of ED. This area was for treating patients triaged as level III to V in the 5-level triage and acuity scale. Physician A was responsible of PGY1 resident training and part of the clinical workload (physician A1). If there was no PGY1 resident to be trained in the area, physician A2 would be responsible for clinical workload only. The CATS aided the attending physicians in executing charting and confirming orders of PGY1 residents. Between October 2010 and January 2011, 54 PGY1 residents were enrolled. The number of patients treated by the physician A1 and A2 were recorded to compare the impact of CATS for PGY1 residents training in workload. PGY1 residents' satisfaction was evaluated in 5-point Likert scale. It included evaluation for teaching environment, clinical workload, comprehensive course content, practical perspective of the course, faculty professional knowledge and incorporation of courses.

Results: Patients presented at day shift, 27.1 (SD: 7.5) patients were seen by physicians A1, and 29.3 (SD: 7.4) patients seen by physicians A2 (p = 0.114). Result at evening shift were 32.8 (SD: 10.8) patients seen by physician A1 and 31.7 (SD: 8.5) patients by physician A2 (p = 0.528). The average satisfaction scale was 4.6 (SD: 0.5) among the 505 PGY1 satisfaction record from CATS.

Conclusions: CATS is contributive to minimize the impact of PGY1 residency training on clinical workload in the ED. We also observed high satisfaction level among PGY1 residents for this teaching model. Implementing CATS in PGY1 residency training can maintain clinical efficiency without compromising satisfaction in ED.

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Rez de Jardin poster area

THE EFFECT OF CANNULA MATERIAL ON THE PAIN OF PERIPHERAL INTRAVENOUS CANNULATION IN THE EMERGENCY DEPARTMENT: A PROSPECTIVE, RANDOMIZED CONTROLLED STUDY

Meral Dolek (1), Selahattin Kiyani (2), Murat Ozsaraç (2), Münevver Sarsilmaz (2), Serkan Sener (3), Mustafa Sever (4), Gulb'n Y?lmaz (2), Asli Yürüktümen (5)

1. Department of Emergency Medicine, Medical Park Izmir University Medical School Hospital, ?zmir, Turkey

2. Department of Emergency Medicine, Ege University Medical Faculty Hospital, ?zmir, Turkey

3. Department of Emergency Medicine, Acibadem University School of Medicine Hospital, ?STANBUL, Turkey

4. Department of Emergency Medicine, Izmir Tepecik Training and Research Hospital, Emergency Service, ?zmir, Turkey

5. Department of Emergency Medicine, Akdeniz University Faculty of Medicine, Antalya, Turkey

Corresponding author: ygulbin@gmail.com

Keywords: Analgesia; cannulation; emergency medicine; pain; pain measurement

Objectives

The present study was undertaken to compare the pain of peripheral IV cannulation (IVC) using a 20-G peripheral biomaterial PEU-Vialon cannula or the 20-G compound FEP-Teflon cannula widely used in clinical practice.

Methods

A prospective, randomized, single-blinded, controlled trial was undertaken at the ED of University Hospital. Eighty-nine noncritically ill adult patients who were receiving an IV line as part of their care were enrolled. In each case cannulas were applied to the antecubital area. Participants rated their pain on a visual analog scale (VAS). The primary outcome was patients pain score, and the secondary outcome was the provider's perception of safety and satisfaction.

Results

The two treatment groups did not differ in age, gender or cannulation indication ($p > 0.05$). Mean VAS was 2.80 for PEU and 3.56 for FEP ($p = 0.061$). Mean provider safety scores were 4.84 (4 to 5) in the PEU group and 4.00 (2 to 5) in the FEP group ($p = 0.0001$). Mean provider satisfaction of application scores were 4.65 in the PEU group and 4.56 in the FEP group ($p > 0.05$).

Conclusions

Although provider safety perception is high, perception of pain has not reduced when inserting PEU-Vialon cannula compared with compound of FEP.

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Rez de Jardin poster area

PRE-HOSPITAL EMS COMPETITION AS EDUCATIONAL TOOL

Viliam Dobias (1), Dana Hlavackova (2), Jan Marsalek (3), Jiri Stana (3), Alena Dudekova (1), Juraj Hamsik (1)
1. Emergency Medicine, Slovak Medical University, Bratislava, Slovakia

2. Pre-Hospital, EMS Central Bohemia, Melnik, Czech Republic

3. EMS Competition, Rallye Rejviz, Brno, Czech Republic

Corresponding author: viliam.dobias@dobiasovci.sk

Keywords: simulation by competition, EMS training, teams comparison

Electronic training equipment is perfect, exact and even their subjective symptoms are objective. Try placing over 100 of training manikins in mud, water, flooded mine or fumous environment for 24 hours. Manikin will tell us objectively measurable data but no feelings. It will not complain about careless extraction and can only react to anticipated situations. EMS crews approach training manikins without the essential feeling for reality. They can not experience a 24 h marathon with 6-8 scenarios involving 2-4 players each and after dinner 2 night scenarios with 1-3 players each in laboratory setting with the use of electronic manikins.

Competition takes place in a small village and surrounding area of 25 km. Crews have to find the patient according to itinerary. Four competitions run simultaneously with equal scenarios and scoring. Paramedic and physician crews in international category, paramedic and physician crews in national category. Teams are assembled according to their national practice. In national category paramedic crews are competing together with Dispatchers. Day before that medical students compete after attending Emergency Medicine class and check players and judges in at least 2/3 of scenarios from the main competition. Exactly the same players, judges and scoring. Effectivity: In 24 hours 100 teams pass 12 real scenarios, each with a little catch. During the competition not only the competing learn but also cca 120 – 150 judges and about 150 players have the chance to experience their colleagues work on themselves. Assembly of 16 – 19 nationalities from 4 continents and many on-lookers create very demanding environment. Scoring is based on positive points, each correctly performed step gains points. In some ambiguous scenarios is the scoring based on two levels. To achieve all possible points for a step as stopping the bleeding or thoracic puncture it has to be done in a time limit. Scored are chosen parameters in areas: safety on site and co-operation with Integrated Rescue System (firefighters, police), case history, physical examination and measurement of chosen vital signs, management and pharmacotherapy, routing. Points are also awarded for empathic approach: no undressing in public, no stepping over the patient, leaving a small child in mother's hands. Player can award up to 100 points for communication close to advised approach. Part of the competition takes place outdoors regardless of weather, distracting factors are on-lookers, colleagues, bosses, co-workers and motivation to compete in a prestigious competition. Comparison of many similar methods and many differences around the world is inspirational to all participants. Pedagogues and mentors according to scores have the chance to see which area requires emphasis. Lecture contains photographic material.

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Rez de Jardin poster area

FLYING BLIND: EXPERIENCE, KNOWLEDGE AND ATTITUDES OF EMERGENCY MEDICINE RESIDENTS TOWARDS HOMEOPATHY

Aveh Bastani (1), Mithaq Vahedi (2), Melissa Barton (3), Patricia Nouhan (4), Adam Rosh (5), Blerina Shaqiri (1)

1. Emergency Department, Troy Beaumont Hospital, Troy, United States

2. Emergency Department, William Beaumont Hospital, Royal Oak, United States

3. Emergency Department, Sinai-Grace Hospital, Detroit, United States

4. Emergency Department, St John Hospital and Medical Center, Detroit, United States

5. Emergency Department, Detroit Receiving Hospital, Detroit, United States

Corresponding author: mithaqv@gmail.com

Keywords: Homeopathy, Complementary and Alternative Medicine, Emergency Medicine Residents

Background: According to The National Center for Complementary and Alternative Medicine (NCCAM), 83 million adults spend over \$33 billion dollars yearly on these therapies, of which over \$3.1 billion dollars were spent specifically on homeopathic remedies (HR). Despite its prevalence NCCAM goes on to state that, 'Several key concepts of homeopathy are inconsistent with fundamental concepts of chemistry and physics.' This clash with traditional science may manifest when patients taking/preferring HRs present to the ED. Emergency physicians experience with homeopathy has not previously been described.

Objectives: Our objective is to describe emergency physicians experience, knowledge, and attitudes towards homeopathy.

Methods: We conducted a pilot survey of EM residents at four different EM residencies in southeast Michigan between September 2012 and November 2012. An anonymous survey consisting of 30 questions to evaluate residents' personal and professional experience with, knowledge of and attitude towards HRs was distributed both in person and online. Our primary outcome was to describe EM residents' professional experiences with HRs. Our secondary outcomes were to describe their personal experience, knowledge base and attitudes towards homeopathy. The data was analyzed using descriptive statistics, 95% CI were calculated using the modified Wald method.

Results: A total of 116 surveys were completed across the four residencies. The respondents were 63.8 % male with an average age of 29.5 years. 63.8% [95% CI 54.7% - 72.0%] of EM residents state that a patient has asked them about prescribing a HR and 49.1% [95% CI 40.1% - 58.2%] of EM residents have noted that at least one patient has refused conventional treatment in favor of a HR. 31.9% [95% CI 24.1% - 40.9%] of EM residents reported personally using a HR of which 81% [95% CI 65.5% - 90.8%] felt that the remedy 'helped'. 75.9% [95% CI 63.0% - 85.5%] of EM residents reported no formal training in medical school or residency regarding homeopathy. Subsequently, EM residents answered only 41.3% [95% CI 38.6% - 44.1%] of the questions correctly regarding their factual knowledge about homeopathy.

Conclusion: Despite limited formal education and factual knowledge regarding HRs, EM residents report a wide variety of both personal and professional experiences with homeopathy.

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Rez de Jardin poster area

END OF LIFE AND PALLIATIVE CARE IN EMERGENCY MEDICINE : A FRENCH NATIONAL SURVEY OF PRACTICE.

Jean-Baptiste BICHAT (1), Christophe ROTHMANN (2), Josph BALLAND (1), Julie THISSE (1), Eliès ANDRE (2), HOFFMANN Matthieu(2), Khaled HABCHI (2), Kossar HOSSEINI (3).

1. *Service des Urgences, CHU de Nancy, France*

2. *Service des Urgences, CHR de Metz-Thionville, France*

3. *Service d'épidémiologie clinique, CHU de Nancy, France*

Corresponding author: jb.bichat@laposte.net

Keywords: medical ethic, palliative care, professional practice

Introduction: Noting the few references available for emergency practitioners about palliative care and the management of the « end of life » situations, the aim of this study is to establish a picture of the way to support the palliative care requesting patient admitted in a french emergency department (ED) in terms of knowledge, of management of the patient and about care provided.

Material and method: One hundred emergency practitioners working in a french ED have been asked by a telephone survey between November 2010 and March 2011.

Results: 87 practitioners have answered. 76% ignore the official definition of palliative care, 71% don't know the official recommendations edited by the HAS (the french high authority in health), 65% ignore the existence of the SFAP (the french society of accompaniment and palliative care) and 93% have never received any education in this area. Still, 74% consider that palliative care is part of their mission. 91% of their hospitals include a palliative care structure. The reason of consultation is as much about socio-environmental issue (exhaustion of the relatives, absence of the usual caregivers, impossible managing at home) as medical issue (unexpected acute medical problem, imminent death). The care realised indeed are mainly about comfort care [analgesia (99%), hydration (92%), tracheobronchial aspiration (95%), prevention and treatment of infectious event (91%)] and rarely about social or psycho-spiritual fields. An admission in a palliative care structure is considered in 64% of the cases, in a department of medicine in 89% and a return to home in 75%. 70% of the physicians declare that they feel at ease in taking care of these patients.

Discussion : This study shows the lack of education in palliative care medicine of the emergency practitioners despite the ordinariness of this situation. If a majority of physicians may have access to a referent, the practical care is left to their appreciation. Patients consult in majority for medico-social issues, contrasting with care mainly about comfort care and the lack of considering for social, psychological and spiritual issues. In one hand, there are patients with difficulties met in the managing at home and leading to an impossibility to stay at home and, in the other hand, the fact that only a part of these patients are admitted to hospital and return back to home is considered in 75% of the cases. From an ethical point of view, consulting in the ED is a real challenge for patients who need palliative care because of insufficient comfort care and the management of these patients could be improves. Nonetheless, a majority of physicians feel at ease in taking

care of such patients, contrasting with all the difficulties and paradoxes we note.

Conclusion : The care of these patients in the ED should be improved by reinforcing the medical education of the practitioners in palliative care and develop the ethical thinking.

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Rez de Jardin poster area

IS THE ESTABLISHMENT OF WEEKLY LECTURES A GOOD WAY TO IMPROVE PRACTICES IN AN EMERGENCY DEPARTMENT?

Grégoire Versmée, Guillaume Valdenaire, Caroline De La Rivière, Matthieu Yali, Pascale Leforestier, Mickaël Roux, Baptiste Vallé, Matthieu Biais

1. Service des Urgences Adultes, CHU Bordeaux - Hôpital Pellegrin, Bordeaux, France

Corresponding author: gregoire.versmee@gmail.com

Keywords: education, lectures, professional practices improvement

Aim: To evaluate the improvement of medical practices by implementing weekly presentations in the emergency department. **Materials and Methods:** The study was conducted in the emergency department at Bordeaux's hospital Pellegrin. We implemented, from January 2013, weekly lectures to senior doctors, interns and hospital students entitled "Thursday's meetings". The meeting lasts 30 minutes each Thursday morning from 08:30am to 09:00am. It includes a 20 minutes presentation by a senior physician or an intern, on a free theme of emergency medicine. 10 minutes are then devoted to audience's questions. An anonymous evaluation sheet was then completed by the participants and collected by the principal investigator. **Results:** Between January and March 2013, 128 sheets assessments were collected over 10 weeks. The median was 15 sheets per presentation. The median of senior doctors' participation was at 3 per week (interquartile range = 2-4), the median of junior doctors' participation at 4 per weeks (interquartile range = 3-5) and hospital students at 8 per week (interquartile range = 5-9). The turnout was excellent considering the theoretical number of physicians in the department at that moment of the day (3 senior doctors, 5 junior doctors, 9 hospital students). 76.6% of participants reported that they thought to change their practices in light of the informations provided by the presentation. 75.8% of participants reported having acquired at least one new knowledge during the presentation. 89.1% of participants reported having extensive knowledge at the end of the presentation. The problem most often encountered was schedule adherence because of transmissions in the morning. **Conclusion:** The implementation of weekly lectures in the emergency department is a good way to improve professional practices.

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Rez de Jardin poster area

ASSESSMENT EFFECT OF TRIAGE EDUCATION BASED ON EMERGENCY SERVITY INDEX (ESI) ON KNOWLEDGE AND PERFORMANCE OF NURSES AND IMPROVEMENT OF THE QUALITATIVE INDICES OF EMERGENCY DEPARTMENT IN VALI ASR HOSPITAL OF FASA UNIVERSITY OF MEDICAL SCIENCES, 2012

Azmoon Mahboobeh (1)

1. Anesthesiology, Fasa University of Medical Sciences, FASA, Iran, Islamic Republic of

Corresponding author: mahboob.azmoon@gmail.com

Keywords: Triage, performance, Nurse

Emergency department triage is a part of a process done by nurses. Therefore, it is essential for nurses to be aware of the triage process in order to properly identify, prioritize patients and to do the appropriate nursing services to patients in the shortest time needed. Triage is the first clinical stage of the patient care. The precision, accuracy, time of triage, decision making and analyzing of the results reflect the status and performance of each hospital's emergency department. The aim of this study was to explore the impact of education triage based on emergency servity index (ESI) on promoting the knowledge and performance of nurses and qualitative indices of emergency department in Vali ASR Hospital of Fasa University of Medical Sciences in the year 2012.

Method:

Present research is a quasi-interventional study. For this purpose, fifty members of staff including nurses and technicians of emergency medicine in the Emergency department with the inclusion criteria for participation were selected. Data collection instruments included a questionnaire consisting of two parts, (personal characteristics, and knowledge) and the performance assessment checklist was prepared. Content validity was used to determine the validity. To determine the reliability of the questionnaire, the test-retest method and quader-Richardson20 were applied. To determine the reliability of the performance checklist, interobserver reliability and the correlation between the two observers and imaging modalities were measured. The questionnaires and checklist were completed by participants before training, two days and six weeks after completion of the training. Workshop in two nine-hours sessions were provided with educational aids of lecture and questions and answers. Finally analysis of the data was performed by using descriptive and inferential statistical procedures in SPSS software ver.16.

Results:

The triage score before training increased from 10.7 ± 3.1 to 17.8 ± 1.6 , two days after training and 16.1 ± 2.3 , six weeks after training. Triage performance score from 48.9 ± 9.9 before training increased to 59.8 ± 7.6 , two days after training and 59.7 ± 8.1 , six weeks after it. (P- Value <0.001).

In addition to training the nurses on triage, the emergency department qualitative indices were impressively upgraded. Other results showed that there was no significant correlation between individual characteristics and personal knowledge of Triage score at six-week intervals after training. (p-value > .05) However, the significant correlation between nursing work experience, work experience in emergency ward and type of employment and performance scores were obtained six weeks after training. (P-value < .05).

Conclusion:

The results showed that triage education influences the practice and knowledge of nurses and improves the qualitative indices of emergency department. Therefore, the development of theoretical and practical training of triage for nurses in hospitals is recommended.

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Rez de Jardin poster area

ASSESSMENT EFFECT OF TRIAGE EDUCATION BASED ON EMERGENCY SERVICE INDEX (ESI) ON KNOWLEDGE AND PERFORMANCE OF NURSES AND IMPROVEMENT OF THE QUALITATIVE INDICES OF EMERGENCY DEPARTMENT IN VALI ASR HOSPITAL OF FASA UNIVERSITY OF MEDICAL SCIENCES, 2012

Azmoon Mahboobeh (1)

1. Anesthesiology, Fasa University of Medical Sciences, FASA, Iran, Islamic Republic of

Corresponding author: mahboob.azmoon@gmail.com

Keywords: Triage, performance, Nurse

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Conclusion:

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Rez de Jardin poster area

INITIAL MANAGEMENT AND PRIMARY HEALTH AID IN CASES WITH TRAUMATIC BRAIN INJURIES DURING SPORTS ACTIVITY

Syrmos Nikolaos (1,2), Kapoutzis Nikolaos (1), Televantos Andreas (1), Mylonas Argyrios (2)

1. Surgical Department, Goumenissa General Hospital, Greece.

2. Department of Anatomy, School of Sports Science, Aristotle University of Thessaloniki, Macedonia, Greece.

Corresponding author: milanako76@yahoo.gr

Keywords: traumatic brain injury, primary health aid, care

Aim of this study was to describe the initial management and the primary health aid in cases with traumatic brain injuries (TBI) during sports activity admitted to a rural district hospital during a 10 year period (2000-2010) . A retrospective analysis was performed in all of the case notes of consecutive cases of TBI injuries. 299 individuals (201 men , 98 women , median age 34 years) presented to the outpatient department and 71 were admitted . The

average length of stay was 9 days. Accurate initial support for TBI injury patients appears to be necessary .

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Rez de Jardin poster area

WEB-BASED ASYNCHRONOUS LEARNING IN AN EMERGENCY MEDICINE RESIDENCY CURRICULUM: EFFECT ON IN-SERVICE EXAM SCORES

Anthony James (1), Timothy Stallard (1), Dorian Drigalla (1), Douglas Patton (1), Hania Wehbe-Janek (2)

1. *Emergency Medicine, Scott and White Hospital, Temple, United States*

2. *Office of Medical Education, Scott and White Hospital, Temple, United States*

Corresponding author: anthonyjamesmd@yahoo.com

Keywords: In service examination, asynchronous learning, web based learning

Background: ACGME allows Emergency Medicine residency programs to exchange one hour of weekly didactics for one hour of online (asynchronous) learning. There are no clear data to support the effectiveness of this method on resident education. Currently, no consensus exists to recommend web-based education over classroom didactics. **Objectives:** The purpose of this study was to determine the effectiveness of asynchronous learning by comparing in-service exam scores before and after asynchronous learning was implemented.

Methods: ABEM In Service Examination performance data for our institution's Emergency Medicine Residents during the academic years 2009 and 2010 was compared to the years 2010 and 2011 after asynchronous learning began. Data included total score and topic scores. Data were analysed with an ANOVA model to compare the difference among scores in topic areas that were covered by asynchronous learning modules during the 2011 and 2012 years to performance in those topics during the years 2009 and-2010.

Results: Analysis of the data revealed no significant difference in overall test scores before and after implementation of asynchronous learning. A significant difference was found only in the following categories ($p < 0.05$): Signs Symptoms Presentation, Abdominal & GI, Cardiovascular, Cutaneous, Environmental, and Toxicologic. Overall scores, averaged together for all three PGY levels, were lower after implementation of asynchronous learning in the categories of Signs Symptoms Presentation, Environmental, and Toxicologic. The category Cutaneous had higher scores. The PGY1 class scored lower in the Signs Symptoms Presentation category after asynchronous learning and higher in the Cutaneous category. The PGY 2 class scored lower in the Abdominal/ GI category after asynchronous learning. The PGY 3 class scored lower in Cardiovascular and Toxicologic categories after asynchronous learning.

Conclusion: Resident participation in asynchronous learning did not result in higher overall scores on the ABEM In-Service exam. A few sub categories did reveal lower scores after implementation of asynchronous learning. One category, Cutaneous, had higher scores. The majority of the data revealed no significant differences between study groups. These data do not support asynchronous learning as a more effective teaching method than didactic based lectures.

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Rez de Jardin poster area

WHERE HAVE ALL THE MENTORS GONE?

Dane Michael Chapman (1)

1. *Emergency Medicine, Children's Hospital, University of Missouri-Columbia, Columbia, Missouri, United States*

Corresponding author: chapmandan@health.missouri.edu

Keywords: Mentoring, Research, Medical Education

Background: Effective mentorship is one of the most important determinants of a successful academic and research career. Emergency Medicine was founded by great leaders and mentors many of whom are now gone. What was so inspiring about those early mentors? What made their mentees successful?

Objectives: To identify traits of great mentors and mentees with an emphasis in medical education, research and the specialty of Emergency Medicine.

Methods: A descriptive, reflective (Qualitative) study of mentorship from 1972-2012. Traits of effective mentors and mentees were derived that were most useful in promoting a positive mentor-mentee relationship. Several negative traits were also identified that disrupted the relationship.

Results: A convenience sample of 30 mentors and 70 mentees were identified. Mentor traits leading to positive mentor-mentee relationships: Established experts, integrity, enthusiasm, love of their work, respect for mentee as a person, able to "paint the big picture", doers, mentee advocate, best interest of mentee in mind, happily take time out of their busy schedules or otherwise willing to sacrifice for mentee, great one-on-one teachers, able to ask the right question and design research to answer it, able to provide historical context for work, a sense of humor, fun to be around, inspiring, able to bring out the best in mentee, edifying, demonstrate interest in other aspects of mentee's life and values, recommend mentee highly. Negative mentor traits: use mentee as slave labor, more concerned with project than mentee growth, critical of mentee religion, do not believe mentee can be successful, list themselves as first author of research primarily conducted by mentee, do not acknowledge mentee for work performed, dishonest, mislead mentee by "bait and switch" or other technique. Positive mentee traits: self-starters, enthusiasm, happy, energetic, integrity, teachable, reliable, follow through on assignments, respectful,

trusting, not fearful of mentor, admit mistakes, desire to make a difference, motivated, keep project moving forward. Negative mentee traits: evasive, dishonest, heart not in the work, going through motions only, do minimal to get by.

Conclusion: Several mentor and mentee traits were identified that promote a positive mentor-mentee relationship. Likewise, pitfall traits were noted that disrupt the relationship.

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A SELF ASSESSMENT SURVEY OF PERCEIVED WELLNESS AMONG US EMERGENCY MEDICINE RESIDENTS

Gaby Buller (1), John Engle (1), Lisa Moreno-walton (1), Andrew Nakamoto (1)

1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, United States

Corresponding author: DoctorMoreno@gmail.com

Keywords: wellness, emergency medicine residents, survey study

BACKGROUND: The American College of Emergency Physicians policy statement says, "The Emergency Physician's well being is of fundamental importance to success and longevity in their field." The concept of physician wellness acknowledges that multiple stressors related to the practice of medicine threaten this balance. Our study gathers information from residents in certified EM programs in the United States (US) in order to determine how residents feel about their own wellness.

METHODS: A comprehensive survey consisting of 46 questions was developed based on current literature on resident well-being. Using Survey Monkey™, this survey was administered to current US EM residents as a convenience sample via email and in person. A total of 194 surveys were collected and autonomously entered into a data collection Excel spreadsheet by Survey Monkey Software.

RESULTS: 31.4% felt that patient care was compromised due to lack of sleep. 57.2% did not believe that decreasing work time would affect education. 34.0% need alcohol to relax. For those in significant relationships, 39.2% did not feel they had enough time to maintain the relationship and 48.4% feel the relationship has suffered. 71.3% know someone who was divorced due to being a resident. 61.0% of residents do not have time to maintain friendships. 58.9% of those with children do not have enough time to spend with them. An alarming 59.7% feel depressed and 52.1% are lonely.

CONCLUSIONS: Residency Review Committee requirements for resident work hours have been aimed at improving overall resident wellness which in turn should produce more productive, professional physicians. From the data collected, we can see that there remains work to be done for this goal to be realized. A larger study encompassing a

larger population of training emergency medicine physicians should be performed to determine if these trends are present in the overall resident population.

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Rez de Jardin poster area

RESIDENTS' EVALUATION IN AN EMERGENCY PROGRAM: HOW THE GENERAL COMPETENCIES COULD BE ASSESSED?

Hamid Reza Reihani, Elham Pishbin, Mohsen Ebrahimi
Emergency Department, Mashhad University Of Medical Sciences, Mashhad, Iran, Islamic Republic Of

Corresponding author: reihanihr@mums.ac.ir

Keywords: emergency medicine, residents' competency, evaluation

Objectives: The emergency medicine educational curriculum was designed to include the six general competencies

(GCs) addressed by Accreditation Council for Graduate Medical Education (ACGME). To ensure that these GCs are assessed in our residents in Mashad University of Medical Sciences (MUMS) emergency medicine residency program, the authors reviewed and revised the evaluation process.

The modified evaluation method includes 5 main components. The description of the evaluation plan is as follow.

A- Formative assessment. The residents are assessed daily at the end of each working shift by the attending staff. A form is completed that includes these 6 fields.

1. General considerations: the general appearance and behavior of the resident, for example, being on time, appropriate dressing, enough attention to patients, adherence to ethical principles, etc.

2. Documentation: complete recording of patient's conditions and information, progress notes, consults, dispositions

and discharge notes. Exact and clear ordering of the laboratory, imaging, other studies and therapies.

3. Patient management and clinical reasoning: patients' assessment, emergent interventions, resuscitation, diagnostic studies interpretation, therapeutic treatments, procedures.

4. Communication: effective communication with patient and his/her family, nursing staff, other physicians, demonstrate empathy and integrate family into patient care.

5. Education: participate in undergraduate and EMS personnel education. Patient education and giving enough discharge advices.

6. ED management: management of triage, patient transfer, resources allocations, ED crowding.

B- Electronic logbook: electronic registration of each resident activity.

1. Educational activities: participation in educational meetings and conferences, mortality and morbidity conferences, journal clubs, CPC, interdisciplinary meetings, scholarly activities, etc.
 2. Patient based practices: procedures done, diversity of disease and patient managed, follow ups, etc.
- C- Monthly written exams
D- Trimestrial written feedback
E- Semestrial OSCE

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Rez de Jardin poster area

CHARACTERIZING THE USE OF POINT OF CARE ULTRASOUND IN EMERGENCY MEDICINE RESIDENCY PROGRAMS IN MEDELLIN, COLOMBIA

David Beversluis (1), Christina Wilson (1), Patricia C. Henwood (1), Alissa Genthon (1), Alejandro Cardozo Ocampo (2), Melisa Villegas Zoluaga (3), Marcela Castro Boteo (4), Christian Arbelaez (1)

1. Department of Emergency Medicine, Brigham and Women's Hospital, Boston, United States
2. Department of Emergency Medicine, Clinica Las Vegas, Medellin, Colombia
3. Department of Emergency Medicine, Universidad de Antioquia, Medellin, Colombia
4. Department of Emergency Medicine, Universidad CES, Medellin, Colombia

Corresponding author: dbeversluis@gmail.com

Keywords: Ultrasound, Colombia Emergency Medicine, Residency Training

Introduction:

During the past decade, two prominent emergency medicine (EM) residency programs in Medellin have been instrumental in the growth of this emerging specialty in Colombia. As point of care (POC) ultrasound has become an important aspect of EM training globally, educators and residents in Colombia have begun to integrate this technology into their clinical practice to varying degrees. In this study we aim to understand the current use, training, and barriers to expansion of POC ultrasound in these residency programs.

Methods:

We performed a mixed methodology cross-sectional ultrasound needs assessment survey on a convenience sample of all available residents at the two emergency medicine residencies in Medellin, Universidad de Antioquia and Universidad CES. This survey assessed previous ultrasound experience, level of comfort with various applications, desire for further ultrasound training and perceived barriers to expanded use. Focus group sessions were also conducted at each program to gather additional qualitative data regarding each program's use of POC ultrasound. IRB-exemption was obtained for this research.

Results:

There were a total of 19 emergency medicine residents surveyed. This represents 86% of all current EM residents in Medellin, 8 from Antioquia and 11 from CES. Fifty-three percent of all residents indicated that they had previously used an ultrasound machine; 75% at Antioquia and 36% at CES. Among all residents who had used POC ultrasound, 80% reported they had performed fewer than 10 scans, whereas the remaining 20% had performed more than 40. The most common applications for POC ultrasound among those using it regularly, primarily at Antioquia, are trauma, vascular access and echocardiography. Only 26% of all respondents indicated they had received some formal ultrasound training, and all but one of these were from Antioquia. All respondents indicated a desire to learn more, although again a difference was noted between programs with the majority of residents at Antioquia selecting a 'high' level of interest and the majority at CES selecting 'medium' and 'low' interest. Respondents reported several residency-specific barriers to ultrasound use during focus group sessions. At CES, the most important is the absence of POC ultrasound in the curriculum, whereas at Antioquia it is relationships with radiologists who currently maintain control over imaging technology. Additional barriers identified among all respondents include lack of teachers (58%), limited time (53%), and absence of ultrasound machines (42%).

Conclusion:

Among EM residents in Medellin, POC ultrasound is used with some frequency, however there are significant differences in use and training between the two residency programs. The most significant difference between the two groups was their overall level of exposure to ultrasound. The majority of residents using ultrasound have done few individual scans and lack formal training. There is general interest in increased training, especially at Antioquia. Many challenges remain to the expanded use of POC ultrasound including few formally trained ultrasound educators, limited resources, interdepartmental relationships, and lack of a standardized educational curriculum and training program. Further work to understand and address these challenges will contribute toward making POC ultrasound an increasingly important aspect of EM practice in Colombia.

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POSITIONAL EFFECT ON THE QUALITY OF CHEST COMPRESSION: A SIMULATION STUDY

Jaiwoog Ko (1), Kyunguk Kim (2)

1. Emergency medicine, Kwandong university college of medicine, Incheon, Korea, (South) Republic of
2. Emergency medicine, Myongji hospital, Goyang, Korea, (South) Republic of

Corresponding author: jupitor.em@gmail.com

Keywords: cardiopulmonary resuscitation, quality, position

Background

High quality of chest compression is essential for arrest victims. In many facilities, training for cardiopulmonary resuscitation has been performed on the floor setting. Novice health care providers may encounter arrest victims in the bed, but it is uncertain whether their performance is optimal.

Methods

This research was performed during objective structured clinical examination (OSCE) for 6th grade medical students. Students completed the course of basic life support for health care providers provided by American heart association, and participated in the exam at least 3 months later after the course. In the OSCE, we prepared 2 scenarios for the test of cardiopulmonary resuscitation (CPR) skill; an arrest victim on the floor or in the bed. Students were randomly assigned. The test time was 5 minutes per each student, and we anticipated students performed CPR including 5 cycles of compressions and ventilations in the test period. CPR skill was assessed with use of the checklist developed previously by OSCE committee in our school, and recorded each student's skill with use of skillreporter system (Laerdal Medical, Stavanger, Norway). We investigated some variables for comparison of basic characteristics between two groups; age, sex, body mass index, and the written exam & clinical practice score of emergency medicine. Also, for quality of chest compressions, correct compression rate, correct compression depth rate, correct relaxation rate, correct hand position rate, and hands off time were measured. Student t test and chi square test with IBM® SPSS® Statistics 19.0 (SPSS INC, Chicago, IL) were used for analysis. Significance level was 0.05.

Results

47 students were included for analysis among 59 students enrolled. Students were divided into two groups; on the floor or in the bed. There were no significant difference in basic characteristics between two groups. Also, the CPR skill scores and the quality of chest compression were not different.

Conclusion

Medical students could provide similar quality of cardiopulmonary resuscitation in standing position compared to the quality on the floor setting.

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EFFECTIVENESS OF SONOGRAPHIC TRAINING IN MEDICAL SCHOOL EDUCATION

Doo-jung Jun (1), Seungchul Lee (1)

1. Emergency medicine, Dongguk university Ilsan hospital, Goyang-si, Korea, (South) Republic of

Corresponding author: bluelune@naver.com

Keywords: Sonographic education, Medical school education, FAST

Introduction

In many emergency situations ultrasonographic evaluation provides essential information in decision making. Unfortunately, in current medical school education, the ability to perform and read ultrasonography is not included. This study was designed to find out the possibility of whether sonographic training would be effective in medical school curriculum.

Method

44 students in their 5th year at Medical school, who have no training in ultrasonography, were included as subjects. An average of 4 hours was used as education time, training including 18 different views. After that time, each subject was tested on the appropriateness of the image, time it took for that image, subjective level of difficulty, confidence in performing sonography in the field, and adeptness in using the sonography.

Result

The average success rate on 17 items, excluding the B-lines was 95.9%. The median time required per item was 25 seconds. Most of the students answered 'easy' for the majority of questions on the subjective level of difficulty, confidence in performing sonography in the field, and adeptness in using the sonography

Conclusion

A brief 4 hours of education enabled sonographic novices to evaluate a patient using a limited form of FAST. This study shows that through developing an effective curriculum and educating the students in a systemical manner, sonographic education in various fields will be made possible.

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EDUCATION AND TRAINING OF PREHOSPITAL PERSONEL USING INTERNAL COMPANY COMPETITION

Stefan Trenkler (1,2), Jozef Karas (1), Monika Paulikova (1,3), Eva Havlikova (1), Adriana Kilianova (1,2), Martina Vitkova (1), Vladimir Hosa (1)

1. Educational and training centre, Falck Zachranna a.s., Kosice, Slovakia

2. P.J.Safarik University, Kosice, Slovakia

3. Oncological Institute, Kosice, Slovakia

Corresponding author: trenkler@falck-zachranna.sk

Keywords: Education, Internal competition, Quality

Falck Zachranna (FZ) is the largest prehospital emergency medical service (EMS) provider in Slovakia with 91 ambulances and more than 1000 paramedics and medical doctors. EMS stations are spread throughout the country and grouped into regions. There are 14 regions within the FZ organizational structure with 5 to 7 stations in each one. The company strives for the highest quality of service which can be assured only by high standard continuous education. The Educational and Training Centre (ETC) of FZ employs various forms of training and education. In accordance with

Miller's educational pyramid, clinical competence can be best achieved and evaluated if performance is integrated into practice ("he/she does"). The supervisors of the ETC visit each station once every month for educational and training purposes. Besides lecturing, training on simple models, testing and other basic educational methods they simulate real intervention using scenarios of model situation. To extend this mode of teaching we introduced in 2009 an internal competition for ambulance staff. Each region organizes its own competition appointing one team from every station composed of the paramedic and the driver/paramedic. There is also a final round of the 14 regional winners bringing together the best ambulance staff.

The competition tasks include a written test, CPR 2010 skills and the complex management of 4 simulated patients involving acute coronary syndrome, polytrauma, respiratory failure and coma (stroke). The staff are expected to behave as in a real intervention including communication with the dispatch centre, conversation with the patient, management of the relatives, team management, employing technical skills such as insertion of a laryngeal tube and/or intraosseous needle and final patient transfer. Each task is watched and evaluated on a special sheet by a medical supervisor (judge). Because this is a near real situation with trained simulated patients, non-technical skills such as team management, leadership and clinical decision making can be demonstrated and evaluated. It is a competition but with the motto "let us play". The most important part is immediate subsequent debriefing which includes focused analysis and correction of any deficiencies revealed in theoretical knowledge and practical task completion.

Internal competition allows us to see at work every year around 210 (nearly one quarter) of all the paramedics. At the end a summary evaluation and analysis of strong and weak factors is prepared with recommendations for future training. Practices are also compared with the requirements of the ERC 2010 guidelines and official protocols of the Ministry of Health for the management of myocardial infarction and ischaemic stroke for audit and quality of care assessments in Falck Zachranna. These data, in addition to the Utstein protocol for cardiac arrest, are now evaluated in every intervention (136,000 yearly) and our company is the first one in Slovakia to collect, analyse and present such quality data.

The internal competition has received positive feedback and has become a motivational tool for further education and training. It also reflects the effectiveness of the previous educational and training activity of the instructors – supervisors of the ETC FZ. Furthermore the competition offers the means to expand experience in educational and training activity in order effectively to prepare future simulated patients, judges (referees) and organizers.

In the presentation, pictures from the internal competition in Falck Zachranna will be shown.

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EVALUATION OF THE CONTRIBUTION OF EDUCATIONAL MEDICAL SIMULATION IN THE FORMATION OF EMERGENCY MEDICINE

Pierre Coffin (1), Frederico Nunes (2), Olivier Tilak (3), Emmanuel Cluis (4), Nathalie Assez (4), Eric Wiel (4)

1. 59, Hopital de Cambrai, Lille, France

2. 59, CHRU Lille, Lille, France

3. 59, Hospital de Douai, Douai, France

4. 59, SAMU 59, Lille, France

Corresponding author: pierrecoffin83@gmail.com

Keywords: realistic simulation, ventricular fibrillation, anaphylaxis

Objectives: The realistic simulation is an educational tool taking an ever more important, particularly in emergency medicine. It is complementary to traditional teachings. We evaluated in this study the interest of providing a realistic simulation session prior to an assessment in two emergencies in internal training courses in DESC Emergency Medicine.

Materials and Methods: A prospective study, performed in single-center residents enrolled in 1st year DESC our emergency medicine faculty. The promotion was, by lot, split into two: one group to attend the training on anaphylaxis (CA) grade III (group 1) and the other on the ventricular fibrillation (VF) (group 2). At first all internal mail received by the recommendations of management of CA and VF asking them to be read before being summoned to a meeting realistic simulation of the high-fidelity simulator HPS METI[®]. Internal assigned to one group realized a simulation only on the CA, in group 2 only on the VF. The validity of items in the grid was carried out by a Cronbach. Then the two groups of candidates were invited to attend six weeks after an evaluation session realistic simulation on the same simulator but on two scenarios CA and VF. Grids validation were recorded on 29 points (CA) and 18 points (VF). We compared the impact of prior simulator training between the two groups. The results are expressed as mean \pm standard deviation. Statistical tests used the Fisher exact test.

Results: All internal promotion (n = 18) participated. When evaluating 6 weeks simulator for scenario C, the score was 26.2 ± 2.5 (group 1 who received a simulation session prior to the CA) vs. 10.7 ± 3.7 (group 2 did not receive pre-session on CA) ($p < 0.001$). For the scenario of VF, the score was 9.1 ± 5.7 (group 1 who have not received prior to the meeting FV) vs. 17.4 ± 1.1 (group 2 who received prior to the meeting VF) ($p < 0.001$).

Conclusion: This study showed a significant improvement in the management of these two emergencies that are CA and VF when a session prior simulation was performed.

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EMERGENCY SERVICES FIRST-DEGREE RELATIVES OF PATIENTS ADMITTED FOR ACUTE CORONARY

SYNDROME HEART DISEASE RECOGNITION LEVELS: QUESTIONNAIRE STUDY

Tarık Ocak (1), Arif Duran (1), Serkan Öztürk (2), Ümit Yaşar Tekelioğlu (3), Alim Erdem (2), S. Selim Ayhan (2)
1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
2. Department of Cardiology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
3. Department of Anesthesiology and Reanimation, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Acute Coronary Syndrome, Patients' relatives, Level of Consciousness

Aim: In this study, aimed to investigate the level of knowledge and approaches of the general population outside the health sector on the recognition of myocardial infarction and first intervention.

Materials and Methods: A questionnaire was created by researcher showing the first treatment should be done in patients with MI. Questionnaire was completed by 250 volunteers. Volunteers were particularly selected from outside the health sector. The participating individuals had no history of MI or met with in their immediate vicinity care was given to a patient with MI. Those who are illiterate were excluded.

Results: The mean age of respondents to the questionnaire were 36.09 ± 12.09 . The participants of 52.8% were women ($n = 132$) and 47.2% were male ($n = 128$). These people 30.8% of primary school ($n = 77$), 28.4% of high school ($n = 71$), 40.8% percent of the university graduates ($n = 102$). Percent of 56.6% participants described themselves middle-income group. Who expressed had no knowledge 78.9% of the primary school, while 21.1% were high school graduates.

Conclusions: About typical symptoms of MI other than chest pain concluded that the findings is not known enough. The normal population encounters with MI have not enough information on what to do other than call the emergency services have been discovered. Constitute the most important part of the diagnosis, and early intervention in acute myocardial infarction and it is necessary to consider that the implementation of community-wide education programs.

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EVALUATING CENTRAL LINE PROCEDURAL COMPETENCY IN EMERGENCY MEDICINE RESIDENTS

Laura Shih (1), Richard Shih (2)
1. Emergency Department, Somerset Medical Center, Somerville, United States
2. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: shih100@yahoo.com

Keywords: residency, procedures, competency

Background: Assessing specific procedural competencies were highlighted when Core Competencies were introduced by the ACGME. With the proposed New Accreditation System, this has become an even more prominent issue with specific milestones that have been proposed. Few of the tools used to evaluate procedural competencies have been validated. The objective of this study was to assess the use of a bedside evaluation of Central Line Procedural Competency

Methods: A retrospective review of the evaluation form designed to specifically assess central line procedural competency. Residents graduating in the past 3 consecutive years were included in this study. The forms are designed as closed questions assessing the site, type and side of central line placement and aspects of the procedure (i.e. proper positioning, understanding indications and complications, etc...). In addition, information on past central line experience, whether ultrasound was utilized and other comments regarding line placement performance. **Results:** 23 emergency medicine residents were included in the study. 142 central lines evaluations were reviewed. The lines were placed during EM1, EM2 and EM3 years with equal frequency. 140 of 142 (98.6%) were judged to be performed competently. There were no differences in EM1 year placement versus EM2 or EM3 years. In the two judged not to be placed competently one was due to the needle being aimed at an improper angle and the other involved the line being placed too slowly in a code situation. **Conclusions:** An EM central line procedural competency assessment tool has been utilized. The vast majority of evaluations report no problems and procedural competency despite level of EM education. It is unclear if this evaluation tool discriminates competency versus need for additional procedural training. Further research into evaluation tools for procedural competency are needed.

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PATIENT SAFETY CULTURE PERCEPTION AMONG EMERGENCY MEDICINE RESIDENTS

Hassan Barzegari (1), Mohammad Ali Fahimi (2), Neda Fahimi (3), Arash Forouzan (4), Javad Mozafari (1)
1. Emergency medicine department of Ahvaz, Jundishapur university of medical sciences, Golestan hospital, Ahvaz, Iran, Islamic Republic of
2. Emergency medicine department of Ahvaz, Jundishapur university of medical sciences, Ahvaz imam Khomeini hospital, Ahvaz, Iran, Islamic Republic of
3. Sosan-tarashok center-izeh, Ahvaz, Jundishapur university of medical sciences, Ahvaz, Iran, Islamic Republic of
4. Emergency medicine department of Ahvaz, Jundishapur university of medical sciences, Ahvaz emam hospital, Ahvaz, Iran, Islamic Republic of

Corresponding author: Fahimi76@yahoo.com

Keywords: safety culture, perception, emergency medicine resident

Introduction: Patient safety is considered as a core component of quality in health care services. Accordingly, in this study the perception of residents of emergency medicine field about patient safety was evaluated.

Methods and materials: This cross-sectional study was conducted to assess the culture of patient safety among 29 consecutive subjects including medical residents in emergency medicine field in Ahvaz (Jundishapur) University of Medical Sciences, Southwestern Iran. Data was collected by Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire designed by the Agency for Healthcare Research and Quality (AHRQ).

Results: The overall percentage of positive responses was 75.9%. The percentage of positive responses was highest for 'management support for patient safety' (89.7%) and 'communication openness' (75.9%) and lowest for 'non-punitive responses to the error' (13.8%) and 'frequency of events reported' (24.1%).

Conclusions: Totally, according to the obtained results, it may be concluded that the patients' safety perception is in a relatively good level among medical residents in the field of emergency medicine.

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CURRENT OPTIONS FOR ENGLISH SPEAKING POST-GRADUATE TRAINING IN PAEDIATRIC EMERGENCY MEDICINE

Paul Dhillon (1), Inge Roggen (2), Weng Hoe Ho (3), Frank Leader (4), Gerlant Van Berlaer (5)

1. Academic Family Medicine, University of Saskatchewan, Regina, Canada

2. Emergency Department, Universitair Ziekenhuis Brussel, Brussels, Belgium

3. Emergency Department, National University Hospital Singapore, Singapore, Singapore

4. Emergency Department, Waikato Hospital, Hamilton, New Zealand

5. Department of Emergency Medicine; Research Group on Emergency and Disaster Medicine, Faculty of Medicine and Pharmacy, Vrije Universiteit Brussel, Universitair Ziekenhuis Brussel, Brussels, Belgium

Corresponding author: paul.dhillon@gmail.com

Keywords: Paediatric, Training, Emergency Medicine

Paediatric Emergency Medicine (PEM) is a growing sub-speciality within the realm of Emergency Medicine. A number of formalized residency training programs are available in this field. However, entrance into training programs and the differing lengths of training programs have not been compared previously in the English speaking world.

A targeted internet based search was completed in 2013 that examined the current training options in the United

States of America, Canada, Republic of Ireland, United Kingdom, South Africa, New Zealand, Australia and Singapore. Emergency Medicine governing organizations and Royal College websites were reviewed for information and options for Paediatric Emergency Medicine training. In order to provide a full picture of options available, educational institutions websites that provide Masters and above level training in the speciality were reviewed in order to fully elucidate the many post-graduate training options currently available.

Of the countries examined, both Canada and the United States of America have formal 1-3 year training fellowship programs in Paediatric Emergency Medicine that can be entered by physicians after completion of their initial post-graduate categorical Emergency Medicine or Paediatric Medicine specialities. The content, scope, and length of training program differ from fellowship to fellowship.

Ireland currently has no official training program leading to certification in PEM, however fellowships can be done abroad.

South Africa does not currently have a formal recognized training stream in Paediatric Emergency Medicine but similar to Ireland, fellowships can be done overseas.

Training in PEM in the United Kingdom is through a formalized 2 year training program which includes 12 months in a PEM training ED, 6 months of surgery/orthopaedics, and 6 months in a Paediatric Intensive Care Unit. Upon completion trainees receive sub-speciality recognition in PEM and must have successfully completed prior training in Paediatrics or Emergency Medicine.

Both New Zealand and Australia PEM training programs fall under the Australasian College of Emergency Medicine and have a prescribed path to certification. This includes a minimum of 36 months of training after the initial Australasian College of Emergency Medicine examinations are completed and training in Emergency Medicine is successful. Another path exists where candidates can complete specialization in Paediatric Medicine before commencing the PEM training.

At the current time the Ministry of Health in Singapore does not recognize PEM as a speciality or sub-speciality. However, during Paediatric Medicine residency training, resident can tailor their training to include more PEM. Other options include further Paediatric Medicine training for Emergency Medicine trained physicians.

The University of Edinburgh offers a Masters in Paediatric Emergency Medicine that is available through distance education over a 3 year course. A number of other options for academic education in Paediatric Emergency Medicine are becoming available.

There is a multitude of paths to sub-speciality certification and training in Paediatric Emergency Medicine internationally in English speaking countries. While comparing the final pathway that leads to recognition of training in this field it is noted that not all programs are accredited and certification in the field is not easily transferable across all national boundaries.

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THE CHANGES OF TRIAL WILL & ACCURACY OF CHEST COMPRESSION AROUND CPR TRAINING

Park Seung Min

Emergency department, Hallym University Medical Center, Anyangsi, Korea, (South) Republic of

Corresponding author: aukawa1@naver.com

Keywords: Cardiopulmonary resuscitation, Education, Attitude

Purpose : To investigate the changes of chest compression trial will, self-confidence and accuracy of chest compression around CPR training to public.

Methods : We enrolled the 166 people who applied the training course basic life support for public voluntarily between January 2011 and September 2012. We investigated the changes of trial will of chest compression with 5-point Likert scale, and changes of confidence of chest compression with visual analogue scale from 0 to 10 points. The subjects performed chest compression for 2minutes to practical training mannequin (Resusci Anne Skill Reporter™). We measured the accuracy of chest compression objectively through chest compression evaluation program.

Results : Trial will of chest compression changed when they see collapsed person ($p < 0.001$). Self-confidence in respect of the technique of chest compression increased from 2.12 ± 1.55 to 8.35 ± 1.20 points ($p < 0.001$). And the accuracy of chest compression increased from 14.07% to 61.98% ($p < 0.001$).

Conclusion : Aggressive CPR training and public relations to public should be performed to make rapid emergent medical system that include immediate EMS activation and performing CPR when people see collapsed person.

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IMPACT OF EMERGENCY MEDICINE INTEREST GROUPS IN THE DOMINICAN REPUBLIC

Sara Acosta (1), Pablo Smester (2), Armenia Mordan (3)

1. Medical Student, INTEC University, Santo Domingo, Dominican Republic

2. Emergency Department, Hospital Plaza de La Salud, Santo Domingo, Dominican Republic

3. Medical Student (IV year), INTEC University, Santo Domingo, Dominican Republic

Corresponding author: armenia_m19@hotmail.com

Keywords: Medical Students, International Emergency Medicine, Dominican Republic

Worldwide, Emergency Medicine (EM) is an important aspect of health care. Developed countries became pioneers of EM and instituted protocols for high quality

emergency care. Emergency Departments (ED) in many undeveloped countries, are still managed by general practitioners, often without adequate training, the latest technology, prehospital care or ambulance services. In the Dominican Republic, the treatment for life threatening conditions is not a priority. In order to improve attention provided to patients suffering from time-sensitive injuries or illnesses, strategies for public health should be applied. The Emergency Medicine Interest Group of the Instituto Tecnológico de Santo Domingo (EMIG INTEC), as a thematic extracurricular alternative for medical students, has helped to modify the reality of emergency medicine. Increasing the awareness of the specialty among practitioners, reinforcement of scientific knowledge and the education of the community have been target since its foundation.

Keywords: Medical Students, Emergency Medicine, Dominican Republic.

The fundamental functions of a health system are to improve the health of the population and respond to people's expectations (1). Unfortunately, in undeveloped countries, health care attention is often focused on advanced presentations of pathologies and their complications (2). Primary prevention and emergencies are often neglected.

The first EM residency in Dominican Republic, started in the year 2000, when there were already 125 EM residency programs in the US(3). This gap between both countries, underscores the deficiencies of emergency care in the Dominican Republic, where Emergency Departments are still coordinated by general physicians in most cases, even in tertiary-care centers.

In order for EM residency program model to gain traction in the DR, the need to include this specialty in the curricular program for physicians in training also grows. In the universities where EM classes do not exist, Emergency Medicine Interests Groups (EMIGs) represent a relevant and important link between students and EM formation. EMIG INTEC Santo Domingo is a student run organization oriented to strengthen student's knowledge and skills in emergency medicine. Resources like health care provider courses, CPR training day and emergency drills have been available for students interested in developing skills to participate in emergency situations.

EMIG INTEC has performed two drills on the campus with students instructed in trauma life-support by EM specialists, in case of motorcycle accident and a fire.

EMIG INTEC has developed venues for medical discussion such as journal clubs, case presentations and movie forums, all oriented to share scientific interests and promote the specialty. EMIG Olympics, our newest project of the group, focuses on important aspects of emergency care. Students have a topic to study and must demonstrate their knowledge in order to win 'the EMIG gold medal'. In-campus blood drives are a new initiative that could be an important source of volunteer donors. EMIG has also allowed members to be certified in American Heart Association's health provider's courses and simulation-based medicine.

Community service, both within the DR and internationally, is another priority for EMIGs. Members of the group have

traveled to rural areas in the DR and to Haiti, with programs of primary health care for underserved populations. As a result of the opportunities offered by the EMIGs, students initially unaware of the specialty, are now considering joining an EMIG and later an EM residency. In a country where most of the population has its first contact with medical services at the Emergency Room, the impact of EMIG's work is unlimited. The outcomes of the creation of Emergency Medicine Interest Groups in the DR could be a motivation for other third world countries to improve emergency medicine development.

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POSTGRADUATE TRAINING LEVEL IMPACTS RESIDENT SELF-ASSESSMENT OF ELECTRONIC CHARTING QUALITY

Abdulaziz Alhomod (1), G. Bobby Kapur (1), Frank Peacock (1), Gil Shlamovitz (1), Veronica Tucci (1), Amer Zahralliyali (1)

1. Ben Taub Emergency Center, Baylor College of Medicine, Houston, United States

Corresponding author: Vtuccimd@gmail.com

Keywords: Documentation, Electronic Medical Record, Residency Communication

STUDY OBJECTIVES

Review resident self-assessment of documentation and charting practices and determine any self-identified areas for improvement for targeted curricular development.

METHODS

Design: We conducted a survey to gauge emergency medicine residents' self-perceived performance in documentation practices in their patients' electronic medical records as part of a quality improvement initiative. The tool assessed resident comfort with charting in ten (10) areas including overall quality, quality with respect to history of present illness, review of systems, physical examination, differential diagnosis, treatment plan and patient response to intervention. The tool also evaluated resident perceptions of their admitted and discharged patient charting as well as procedural documentation. Each item was graded using a Likert scale of 1-5 with 1 representing substandard, 2 low standard, 3 standard, 4 high standard and 5 superior.

Setting: Urban teaching hospital, level 1 trauma center, >100,000 ED visits a year with a PGY 1-3 Emergency Medicine Residency Program

Participants: 29 out of 34 (85.29% completion rate) residents completed a self-assessment tool.

RESULTS

There were 288 survey items, among a total of 29 participants, of which there were 12 (41%) females, with a mean age of 30.4. The average self-assessment score for all residents was 3.38, with a range of 2.8-3.72. The lowest reported ratings involved differential diagnosis with an average of 2.83 and the highest reported ratings involved history of present illness 3.72. First year residents rate their mean (sd) charting performance scores (3.22 ±0.74) as lower compared to the 2nd year cohort (3.52±0.70, 95% CI - 0.516 to -0.084) and 3rd year cohort (3.46±0.76, 95% CI - 0.426 to -0.054). There was no differences in the self-rating scores between the 2nd and 3rd year residents (95% CI - 0.146 to 0.266).

CONCLUSION

We found that residents in the first year of their postgraduate clinical training endorsed self-perceived weaknesses with respect to charting in the electronic medical record as compared to their senior counterparts. Additionally, residents across all levels of training reported a comparative weakness in charting their differential diagnosis for patient complaints.

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WILDERNESS MEDICINE; CREATING AND DEVELOPING AN ELECTIVE CURRICULUM IN YOUR MEDICAL SCHOOL

Julio De Pena (1), Laura Sosa (2)

1. Emergency Medicine, University of Miami, Miami, United States

2. Emergency Medicine, Hospital General Plaza de la Salud, Santo Domingo, Dominican Republic

Corresponding author: jmdepena@gmail.com

Keywords: Wilderness Medicine education, Medical student education, Wilderness Medicine Elective

Wilderness Medicine has been growing over the last few years as a response to an ever increasing population of travelers, outdoor enthusiasts, and overall expanding population of weekend warriors looking for alternative recreational activities.

In some cases this activities will play in very remote areas, injuries are bound to occur and the need to provide care until help arrive will prove an invaluable benefit for the injured.

There are a number of available opportunities to acquire the knowledge necessary to provide care in a wilderness and remote environment, from daylong workshops, weekend courses to one or two year fellowships sponsored by very well recognized institutions.

An elective course in Wilderness Medicine offered as part of the regular academic curriculum would enrich the experience of medical student during their basic years of training, promoting not only the knowledge but camaraderie as well. Promoting and developing character and joy among the student body providing every young physician an invaluable tool for his formation and growth. One study found that as much as 40% of participants of any given course reported it was the best course in medical school.

As medical schools try to expand the variety of experiences available for their students and exposures to as many areas of medical care and interest, a Wilderness Medicine Elective would provide an excellent and alternative opportunity for medical students to gain hands on experience providing care in a very different and unconventional situations. Leadership, teamwork, self-confidence and goal directed actions could be among the by-product of this experience that would most definitely help the student enhance his practice of medicine in the future.

Emergency Medicine Interest Groups (EMIG's) are a vehicle to promote congregation, discussion and interaction for students interested in Emergency Medicine, this gatherings can be a niche for the integration of Wilderness Medicine Interest Groups (WMIG's)

An elective in Wilderness Medicine will train and expose the medical student to a different path to critical thinking, where reacting to the ever limited resources and changing environment, planning, performing medical care in a remote environment and be able to prepare and execute an evacuation plan, will translate in an enhanced performance in regular clinical scenarios.

Creation of didactic materials and simulated cases; combining lectures, small group practice sessions, case scenarios, a local 2-3 day overnight trip (as optional or mandatory) will be the basis for a two week elective that will be in conjunction with many other electives available and will offer no disruption for regular more traditional classes.

A series of case scenarios and pre and post-test would be the final stage to evaluate and assess learned concepts and practical applications.

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EMERGENCY MEDICINE, FROM NECESSITY TO PHILOSOPHY, THROUGHOUT HISTORY

Mihai Botea (1), Zsolt Beres (1), Ioan Magyar (1), Mircea Sandor (2)

1. *Emergency Department, Oradea County Clinic Emergency Hospital, Oradea, Romania*

2. *Medicine and Pharmacy Faculty, University of Oradea, Oradea, Romania*

Corresponding author: drmob78@yahoo.com

Keywords: history, philosophy, concept

This scientific paper starts by presenting pictures pointing out historical moments of simple first aid maneuvers and is ending with a complex description of the emergency medicine as concept.

The ancient Egyptians, Greeks and Romans had a system of medicine that was very advanced for its time and influenced later medical traditions. The Greek Galen was one of the greatest surgeons of the ancient world and performed many audacious operations—including brain and eye surgeries— that were not tried again for almost two millennia.

The instances of recorded first aid were provided by religious knights, such as the Knights Hospitaller, formed in the 11th century, providing care to pilgrims and knights, and training other knights in how to treat common battlefield injuries. The practice of first aid fell largely into disuse during the High Middle Ages, and organized societies were not seen again until in 1859, when Jean-Henri Dunant organized local villagers to help victims of the Battle of Solferino, including the provision of first aid. Four years later, four nations met in Geneva and formed the organization which has grown into the Red Cross, with a key stated aim of "aid to sick and wounded soldiers in the field".

During the French Revolution, after seeing the speed with which the carriages of the French flying artillery maneuvered across the battlefields, French military surgeon Dominique Jean Larrey applied the idea of ambulances, or "flying carriages", for rapid transport of wounded soldiers to a central place where medical care was more accessible and effective. Larrey manned ambulances with trained crews of drivers, corpsmen and litter-bearers and had them bring the wounded to centralized field hospitals, effectively creating a forerunner of the modern MASH units. Dominique Jean Larrey is sometimes called the father of emergency medicine for his strategies during the French wars.

This was followed by the formation of St. John Ambulance in 1877, based on the principles of the Knights Hospitaller, to teach first aid, and numerous other organization joined them with the term first aid first coined in 1878 as civilian ambulance services spread as a combination of "first treatment" and "national aid" in large railway centers and mining districts as well as with police forces. Many developments in first aid and many other medical techniques have been driven by wars, such as in the case of the American Civil War.

The modern history of emergency medicine essentially began in the 1960s. In 1960, there was no emergency medicine as a defined academic specialty. Typical hospital emergency rooms staffing patterns used resident, intern, other hospital staff physicians, or rotating on-call duty of all specialties including those such as psychiatry and even pathology. There was neither coordination of hospital care nor organized pre-hospital care. At least half of all ambulance services run by morticians or funeral directors because they had vehicles that could transport people horizontally, often using untrained staff.

Nowadays everybody understands what emergency medicine is dealing with but some of us don't know that

emergency medicine requires other strengths as: a lot of dedication, spirit of sacrifice, a large feature of humanity and empathy or skills to work with limited resources like disaster management.

The emergency physician must be committed to responsibility, continuous learning and developing leadership by immersing in an intellectually stimulating, culturally fulfilling and compassionate environment.

Not only the knowledge and procedure skill base but the "spirit and mind set" of the emergency physician can only be learned from seniors doctors which must be examples to follow as Jean Jaures said „We do not teach what we know or what we think we know: we will teach only what we really are.”

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Rez de Jardin poster area

CARDIAC PULMONARY RESUSCITATION EDUCATION FOR SCHOOL CHILDREN: STIMULATION, FACILITATION OR OBLIGATION?

Chris Boone (1), Ingrid Dillen (1), Pierre Mols (2), Jan Stroobants (1), Tim Van Raemdonck (1), Pierre Vander Borgh (1)

1. Emergency department, ZNA Middelheim Antwerp, Antwerp, Belgium

2. Emergency department, CHU Saint-Pierre Bruxelles, Brussels, Belgium

Corresponding author: jan.stroobants@zna.be

Keywords: CPR, Children, Education

Background.

The number of bystanders performing Cardiac Pulmonary Resuscitation (CPR) is a major problem in Belgium (approximately 30 % would perform CPR). The knowledge of a good technique of cardiac massage is as low as 11 – 17%.

During the school year 2012-2013, we tried to find out whether the distribution of knowledge, and as a result stimulating bystanders to perform CPR, could be increased on a voluntary basis through the education of school children, after mass sensitization and unlimited facilitation of a learning program in schools in an urban region.

Materials and methods.

The city authorities, as well as the schools, classes and parents of all the 8,000 12-year old children of the city of Antwerp, were informed about the importance of bystander CPR and the goals of the study, using all available modern communication tools. Schools that registered for the education program received an individual package for each 12-year old child, containing, a personal training manikin, an instruction DVD and additional information. A link towards a motivational instruction film, featuring a youth idol was also provided. Additional professional training instructors were provided at the request of the class teacher if they felt uncomfortable about teaching the right instructions of cardiac massage themselves. The

children were asked to take their personal package home and instruct their relatives. An extra motivation for the children to teach their relatives, was provided by rewarding a grant of 500 € to the 2 classes with the most instructed relatives. Participation was registered using a web application, accessible to all candidates at the level of each school, each class, and each individual child.

Results.

The commitment of all Antwerp school organizations, to participate in the campaign before the start of the study, was 100%. At the start of the study 72 schools registered to participate which led to the distribution of 4012 individual education packages (50% of the target population). Only 55 classes, (=822 pupils) were finally registered by their teacher for the education program (10% of the initial target population). Feedback regarding the teaching of the relatives came from only 33 classes (66 % of the instructed classes or 7% of the target population). The highest participation rate (more than 3 instructed relatives per child) was achieved in the 9 classes in which the teacher himself requested the optional additional assistance by a health professional.

Conclusions.

Mass sensitization and unlimited facilitation are no guarantee for successful distribution of knowledge of CPR by school children unless it forms a compulsory part of the curriculum. Although, motivated class teachers can have a positive effect on attitude. The obligation, together with facilitation of a teaching program for CPR in schools is probably the most efficient approach.

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Rez de Jardin poster area

STILL PREPARING TO FAIL BY FAILING TO PREPARE? SURVEY OF TRAINEES' EXPERIENCE OF, AND TRAINING IN, INTERHOSPITAL TRANSFERS

Neil Howie (1), Lia Paton (2), Jim Ruddy (2), Jude Stenhouse (1)

1. Emergency Department, Monklands Hospital, Airdrie, United Kingdom

2. Intensive Care Unit, Monklands Hospital, Airdrie, United Kingdom

Corresponding author: nhowie@nhs.net

Keywords: Education and training, patient transfer, critical care

Introduction

The transfer of critically ill patients is regarded by many as an inevitable part of Emergency Department practice¹. This task is frequently delegated to doctors in training². However, these individuals must be appropriately trained if the risks associated with transfer are to be minimised and the safety of both patient and staff maintained³⁻⁴. The current UK Emergency Medicine curriculum does not mandate competence in transfer medicine⁵.

Objectives

As part of a wider survey including Anaesthesia trainees, we surveyed Scottish Emergency Medicine trainees to gauge their experience of and training in interhospital transfers.

Methods

Doctors in training were invited to complete a web-based questionnaire during April 2013. Responses in the form of ticked boxes or free text were collated and analysed for trends.

Results

Eighty three Emergency Medicine doctors replied, yielding a response rate of 69.2%. All levels of training from Core Trainee 1 to Specialist Trainee 6 were represented. Forty percent of respondents were in the last two years of training. Forty two (50.6%) had performed an interhospital transfer; 80% of those within their last two years of training had no interhospital transfer experience. There was a range of experience amongst those whom have undertaken a transfer with 40% having completed less than three transfers and 5% having completed more than 20. Patient groups mirrored those of their Anaesthetic colleagues and included neurosurgical, cardiac, burns and vascular transfers. However, Emergency Medicine trainees more often transfer paediatric level 2 patients, whose clinical condition may be less predictable than that of an intubated ventilated adult. A further concern is that five doctors reported transferring paediatric ICU patients when only three had PICU transfer team experience.

Almost two thirds (64%) had performed their first solo interhospital transfer before CT3 with one having done so during Foundation training, which breaches the standards advocated by the UK Anaesthetics curriculum⁶. One in six trainees reported experiencing a critical incident during transfer, including unanticipated loss of a patients airway, running out of oxygen and refractory hypotension despite inotropes.

Twenty per cent had received no training prior to their first solo interhospital transfer. Seventeen percent had previously conducted an interhospital transfer with a senior colleague and few had attended a transfer medicine course (5%).

More than a quarter (26%) had felt uncomfortable transferring a patient because their experience in this area was inadequate and 80.7% rated their transfer training as deficient or absent. Almost all (98.8%) felt there was a place for more formal tuition in transfer medicine.

Conclusions

Our results demonstrate that we are failing to prepare doctors in training and future Consultants, for the challenges of transfer and retrieval. As services continue to be centralised, the transfer of critically ill patients will increase. Addressing the training deficit is essential. Safe transfer is fundamental to the premise of critical care as a concept rather than a location.

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Rez de Jardin poster area

ATTITUDES TO END OF LIFE CARE DISCUSSIONS IN EMERGENCY DEPARTMENT DOCTORS

Natalie Nobar, Katherine Henderson

St Thomas' Emergency Department, Guy's & St Thomas' NHS Foundation Trust, London, United Kingdom

Corresponding author: natalie.nobar@gmail.com

Keywords: terminal care, advance care planning, resuscitation orders

Background: The nature of the Emergency Department (ED) means that doctors are predominantly geared towards saving and prolonging life. However, ED attendances where the primary need is End of Life (EoL) care are likely to increase, given the ageing population and that 60% of deaths in the UK already occur in hospital. Analysis of a group of oncology patients who died within 14 days of attending our ED showed that most had no EoL care discussions documented. The College of Emergency Medicine recommends setting a ceiling of care for patients if appropriate, yet a confidential enquiry noted no decision at all was made in an overwhelming majority of cases.

Aim: To assess ED doctors' personal and professional attitudes to EoL care.

Methods: 34 ED doctors ranging from Foundation Year 2 (second year post-qualification) to consultant voluntarily completed an anonymous online survey. The results were fed back to all doctors working in the department.

Results: Most doctors had considered their own organ donor status and Do Not Attempt Resuscitation orders. However, less than a third (29%) had thought about where they wished to die and whom they wished to be present at their death. Only around a third (32%) said they felt

confident initiating EoL care discussions in the ED. Reasons for not having these discussions included: inappropriate environment e.g. lack of privacy; inappropriate timing e.g. patient is acutely unwell; being too busy; a fear of upsetting the patient's family. The majority of responders said that they would like further training on how to initiate EoL care discussions.

Discussion: ED doctors of all grades described lacking confidence in initiating EoL care discussions. For some individuals a lack of confidence in initiating EoL care discussions was directly linked to recent negative publicity in the UK about the Liverpool Care Pathway. Other reasons related to the ED environment itself. Doctors may find it difficult to have EoL care discussions with patients because they have not considered their own EoL care.

Conclusion: There is a clear need and demand to increase ED doctors' confidence in discussing EoL care. The way in which doctors' own attitudes influence their approach to what is an emotionally challenging interaction with patients and those close to them needs to be addressed in order to ensure the best outcome for patients presenting to the ED needing EoL care.

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Rez de Jardin poster area

DEVELOPMENT OF A STANDARDIZED NATIONAL TRAINING AND ASSESSMENT PROGRAM FOR EMERGENCY PHYSICIANS IN THE NETHERLANDS TO ASSURE SAFE PROCEDURAL SEDATION AND ANALGESIA

Christian Heringhaus (1), Aniek Schmidt (2), Maarten F. Kok (3), Gael J.p. Smits (4), Menno I. Gaakeer (5)

1. Emergency Department, Leiden University Medical Center, Leiden, Netherlands
2. Emergency Department, St. Antonius Hospital Nieuwegein, Nieuwegein, Netherlands
3. Emergency Department, Rode Kruis Ziekenhuis, Beverwijk, Netherlands
4. Emergency Department, Catharina Hospital Eindhoven, Eindhoven, Netherlands
5. Emergency Department, University Medical Center Utrecht, Utrecht, Netherlands

Corresponding author: c.heringhaus@lumc.nl

Keywords: Procedural sedation, National training program, Safety and quality

Objective:

Since the introduction of emergency physicians (EPs) in Dutch emergency departments there is a growing number of procedural sedation and analgesia (PSA) in emergency departments (ED) performed by EP's. To establish quality and safety of PSA performed by non-anesthesiologists the Dutch Institute for Healthcare Improvement (CBO) developed a multidisciplinary guideline for PSA outside the operating room. The final guideline was published in 2012 and requires amongst other things sufficient education related to PSA. PSA-related adverse events are common

and the outcome of these events is mainly related to knowledge and skills of the doctors performing the PSA. To assure the reliability and safety of PSA performed by Dutch emergency physicians the Netherlands Society of Emergency Physicians (NVSHA) developed a national training and assessment program. This abstract reports on the development, implementation, and evaluation of this training program.

Methods:

Based on the multidisciplinary guideline for safe PSA outside the operating room, the NVSHA developed a standardized national training and assessment program for Dutch EP's. The process was composed of 4 components:

- Assembling an experienced teaching faculty
- Development of a curriculum and learning materials
- Development of a continuous assessment and final examination process to assure certification of the participants
- Development of the 2 day national course program

Results:

The teaching faculty was formed from 17 EP's trained and experienced in performing PSA. The faculty developed a learning curriculum and learning materials to assure the knowledge, skills and performance that should be demonstrated by individuals in order to administer safe PSA. In November 2012 the NVSHA organized a 'Teach the Teacher'-course to maintain the uniformity and quality of the teaching faculty. In March and April 2013 the NVSHA organized the first two national training and assessment courses.

32 Dutch EP's attended these first successful two-day national training courses. The curriculum included lectures, skillstraining (with the main focus on airway management), tabletop exercise cases and simulation based scenarios cases with acted patients, (computer) simulated vital signs and (adverse) events related to PSA.

The participant's progress and performance was assessed throughout the course by continuous assessment of all skills en scenario based workstations and at the end of the course by a final evaluation. The final evaluation consisted of a multiple-choice test and a patient simulation case.

After completing the course, participants evaluated the course with regard to organization, content and applicability of the course. The results of the evaluation were positive on all items.

Conclusion:

Based on the Dutch multidisciplinary guideline for safe PSA the NVSHA developed and successfully implemented a standardized national training and assessment program to assure the quality and safety of PSA performed by EP's in the Netherlands. Participants who successfully passed the course showed that they have the knowledge, skills and performance necessary to prepare and perform safe PSA and to treat common (adverse) events associated with PSA. With this initiative the NVSHA can assure the reliability and safety of PSA performed by Dutch emergency physicians. Other countries that want to establish a comparable program can use this course as an example.

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A COURSE FOR NON TECHNICAL SKILLS IMPROVEMENT IN THE EMERGENCY DEPARTMENT

Massimo Zannoni (1), Giorgio Ricci (1), Paola Perfetti (1), Manuela Carmen Bonito (1), Francesco Pratico (1), Rosalia Codogni (2)

1. *Emergency Department, Azienda Ospedaliera Universitaria Integrata Verona, Italy*

2. *Postgraduate School of Emergency Medicine, University of Verona, Italy*

Corresponding author: massimo.zannoni@ospedaleuniverona.it

Keywords: Non technical skills, Emergency Department, Education

People who work closely in high risk situations are likely to get in the condition of handle potential errors with serious consequences. Recent studies showed that almost 50% of medical errors are due a lack on Non Technical Skills (NTSs). NTSs are 'the cognitive, social and personal resource skills that complement technical skills and contribute to safe and efficient task performance (management, teamwork, situation awareness and leadership). In this regard, even in the health sector, it is increasing the need of training programs for developing NTSs in order to increase reliability and safety levels. In fact lack of NTSs is increasingly recognized as an important underlying cause of adverse events in healthcare. Until now, the medical areas that demonstrate a strong attention to these issues that are mainly surgery and anesthesia. More recently analysis of adverse events in the Emergency Department reveals that factors contributing usually relate to a lack of NTSs such situational awareness, decision making, communication and teamwork, and leadership. In order to improve task management of the Emergency Department of the Azienda Ospedaliera Universitaria Integrata in Verona (Italy), we developed a 30 hours course for improving physicians' and nurses' NTSs. Our experience our experience is inspired by what has been done in recent years in the aviation sector particularly the Crew Resource Management (CRM). The course, divided in three parts, involves 5 physicians and 5 nurses and active learning plays a pivotal role. In the first part the student learns the role and importance of the NTSs and their components: decision making, situation awareness, decision making, communication and team working, leadership. In this part of the course are also analyzed threats and error management. The following step is the analysis of evaluation grids in medical fields and the NOTECHS grid. In the aftermath an evaluation grid for NTSs in the emergency department is developed. The role playing with interactive simulating dummy constitutes the final part of the course. The purpose is to strengthen the assessment capacity of the learner. In fact, by the end of the course each student has to be able to evaluate NTSs of Emergency Department components in order to achieve improvement of their NTSs. In the Italian context, this type of training, is still struggling to take off. The topics related to clinical risk and, in particular, the non-technical skills continue to remain on the sidelines of the institutionalized training courses and are a benefit of a few. The importance

of these components in mostly evident in emergency situations, like the Emergency Department is, with high interaction with the patient. The impact of NTSs is crucial not only for the patient – physician interaction but also in the relationships between colleagues and with others units, as they facilitate the establishment of a fluid relationship that improve operational quality and the results to be achieved. Emergency, especially in overcrowded setting, is an unforeseeable event, characterized by a strong emotional impact, and timeliness of actions for which it is essential that everyone knows who does what, how, when and why. We believe that improving NTSs is important for the specific characteristics of the Emergency Department, different from other hospital units. Health activities are not programmable in any way, but are carried out mostly just-in-time mostly at the moment and respecting the needs of urgency. The emergency room personnel, in fact, work in unusual situations in which the health of the individual patient, threatened by an acute event, must be protected in a race against time and against the difficulties caused by the continuous influx of other users. The operator does not know the patient who will visit, information available are lacking or incomplete with respect to the patient's medical history. As highlighted in previous studies, the peculiar context of the emergence increases the possibility of error. Our challenge lies in the ability to identify solutions, strategies or tools that facilitate overcoming these risk factors. These solutions can be at individual level, through the adoption of techniques limiting the problems related to decision making and attention to the collection of information. The acquisition of skills related to teamwork and communication and leadership will improve the group working of the Emergency Department.

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Rez de Jardin poster area

ABSTRACT-TO-PUBLICATION RATIO FOR PAPERS PRESENTED AT ITALIAN EMERGENCY MEDICINE MEETING: A RETROSPECTIVE STUDY

Vincenzo Menditto (1), Silvia Tedesco (2), Giovanni Pomponio (3), Armando Gabrielli (3)

1. *Emergency department, Hospital "Ospedali Riuniti di Ancona", ancona, Italy*

2. *Internal Medicine, Hospital "Ospedali Riuniti di Ancona", ancona, Italy*

3. *Internal Medicine, Hospital "Ospedali Riuniti di Ancona", ancona, Italy*

Corresponding author: vincenzomenditto74@yahoo.it

Keywords: Abstract, Emergency Medicine, Scientific meetings

Background: To determine the publication rate of abstracts presented by Italian emergency physicians at major emergency medicine meeting, and to identify the site of publication of papers.

Methods: All abstracts presented to the annual scientific meeting of the Italian Society of Emergency Medicine in

2008 were identified retrospectively from conference programme. To identify whether the work relating to the abstract had been published in a peer-reviewed journal, the Medline database was searched using the first and last authors as well as key words from the abstract. A series of evidence based recommendations were used in order to verify the methodological quality of unpublished abstracts. Results: Of the 298 abstracts identified, 41 (14%) had been published as full articles. For abstracts presented in the oral sessions, 15 (22%) resulted in publication. Positive predictive factors of future publication of the presented abstracts were type of the study, both RCT (RR=11.76; 95% CI 2.69 to 51.31) and basic research (RR=9.79; 95% CI 4.30 to 22.27) and a study population > 100 patients (RR=0.19; 95% CI 0.06 to 0.64). The majority of the unpublished abstracts were of poor methodological quality. Conclusions: The abstract-to-publication ratio for Italian emergency medicine is lower than for other countries.

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Rez de Jardin poster area

MEDICAL SIMULATION: DETECTION OF AREAS OF TRAINING IN THE MANAGEMENT OF CARDIAC ARREST DUE OF MYOCARDIAL INFARCTION

Antonio J. Casal Sanchez (1), J. Antonio Iglesias Vazquez (2), Luis Sanchez Santos (2), Antonio Rodriguez Nuñez (3), Laura Calviño Pereira (4), Jose Flores Arias (2)

1. Emergency department, F.P.U.S. 061 de Galicia, Vigo, Spain

2. Emergency department, F.P.U.S. 061 de Galicia, santiago de compostela, Spain

3. Pediatric Emergency and Critical Care Division, Department of Pediatrics, Hospital Clínico Universitario de Santiago de Compostela,, Complejo hospitalario Universitario de Santiago, Santiago de Compostela,, Spain

4. CMA, Complejo hospitalario de Pontevedra, Pontevedra, Spain

Corresponding author: antonio.casal.sanchez@sergas.es

Keywords: Medical simulation, Myocardial infarction, Professionals training

BACKGROUND

To train the healthcare providers by means of advanced Medical simulation is one of the most effective tools, especially in emergencies.

Myocardial infarction (MI) due to coronary artery disease is a leading cause of death in the High-income countries. The risk of serious arrhythmias is greatest in the first hour. Arrhythmia is higher with an ST-elevation myocardial infarction (STEMI). So the precocious recognition and the adequate treatment in this period are essentials.

OBJECTIVES

Main objective was to assess the knowledge, skills and attitudes (KSAs) of the primary healthcare physicians to recognize the critical condition of a simulated patient complaining of thoracic pain, with hemodynamic instability dues to an STEMI, to provide the initial treatment and to activate the emergency system as well.

METHODS

A simulated clinical scenario of a STEMI based in a real patient, was designed and performed throughout the Laerdal SimMan 3G high fidelity human simulator system.

Forty two (42) emergency teams (crew: 3-4) developed the STEMI scenario. Their performance was registered and recorded in audio and video throughout the Laerdal Advanced Video System. Once the period of the studio was completed all the scenarios were assessed by means of systematic reviewing of audio and video recordings of scenarios

RESULTS:

EKG was made in the 100% of scenarios in the first 5 minutes.100% identifies clinically the Acute coronary syndrome, Identified localization of STEMI at 89, 47%. 90 % contact by phone with emergency medicine service to transfer the patient in 5 minutes, and the 42% raises a reperfusion strategy, preferably ICP

100% of shockable or non- shockable rhythms were recognized as such. Mean time to rhythm recognition: 9, 6 sec. First shock delay: 1 minute and 3 seconds. Time between shocks: 2 minutes and 10 seconds. Median Joules dosage was 200, and the number of shocks until ROSC 1, 7. Time to start of chest compressions: 30 seconds, 37,9% early (< 12 seconds). 30/2 sequence: 83.3%.Compression depth: 35, 72 mm, rate per minute: 108, 64, hands on: 76%, change reanimator: 85%. Secuence of drugs (0-1-2 score) based on ERC recommendations was: 1.46. Only 4% attempted tracheal intubation, that was successful in 55, 5%, rest of teams used bag valve mask or supraglottic devices.

Troubles in Defibrillator management: 9.6% team safety. 41% little pressure to paddles. 6.5% oxygen management. 41, 9% technical/acknowledge of defibrillator.

CONCLUSIONS:

To improve the prognosis of sudden cardiac death, the critical issues are precocious recognition, precocious defibrillation as well as to provide a high-quality cardiopulmonary resuscitation (CPR). The professional population involved, instead they provide an immediate recognition (mean time 9,6 seconds), showed an important lack of ability to provide precocious defibrillation (mean time 63 seconds), and a high-quality CPR.

Our data evidences to detect lack of clinical abilities of our professionals, and suggest specific training programs to improve their KSAs in this area.. Main learning objectives must be mainly addressed to provide precocious defibrillation and early and high-quality chest compressions as well. Both team and patient safety must be reinforced choosing the most secure and effective techniques.

Advanced medical simulation appears to be useful to detect the improvement areas and the weaknesses of this professional population.

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Rez de Jardin poster area

ONCE YOU GO MAC YOU WILL NEVER GO BACK: MEDICAL INFORMATICS PRIMER FOR RESEARCH IN DISASTER AND EMERGENCY MEDICINE

Michael S Molloy (1,2,3), Zane Sherif (4), Noel Reilly (5), Conan Reilly (6), Gregory R Ciotto (2)

1. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT), Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland

2. Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA

3. Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland

4. Radiology Department, Gold Coast University Hospital, Southport, Australia

5. Emergency Department, Our Lady of Lourdes Hospital, Drogheda, Ireland

6. Beaumont Hospital, Dublin, Ireland

Corresponding author: mickmolloy@mac.com

Keywords: Medical Informatics, Research Tools, Disaster Medicine

Introduction

Research and synthesising knowledge through evidence-supported practice are vital for the relatively new discipline of disaster medicine. Sackett outlined how this requires integration of best research evidence with clinical expertise and patient values in the context of evidence based medicine in general. There are few journals or textbooks specifically aimed at the interested or practitioner of disaster medicine. Much of the evidence is to be found in the wider emergency medicine, internal medicine, humanitarian, public health and trauma literature and more recently on websites or in social media. There are thousands of new articles being published and added to the research repository daily.

Many undergraduate curricula now include formalised teaching in Medical informatics. Established practitioners may not have benefitted from that experience and will more likely work in a medical environment where the Windows platform is dominant. As a result the medical researcher is faced with challenges when looking for technical help with regard to finding evidence, access to data, data management and cross platform integration.

Apple has been recognised as an innovator and leader in terms of technology development in the last decade. The integration of services from laptops, personal computing, iPods, iPads and iPhones to the recent innovations in cloud storage and local backup technology allied to the myriad of newly designed software packages provide the medical researcher with tools to enhance their productivity and knowledge however this requires education.

Project management is the key to successfully completing a topic. A number of specific tools are available to assist in project management that will integrate with calendar functions on computers/tablets and iPhones allowing for maximum integration of timelines and reminders.

Finding the evidence to support a change in practice can be a lengthy if impossible process if done manually. There are a number of software products available which will search the medical data repositories such as the National Library of Medicine online to retrieve individual references or groups of references with their metafield data. Some of the newer products allow for integration with your hospital or

libraries on line servers to allow retrieval and cataloguing of articles in portable document format (pdf).

Research Data management is an integral component of medical research. When work is presented at frequent intervals it requires graphical references to be reconstituted frequently and unnecessarily as the tools exist to allow for updating of charts/graphs automatically when the source data itself is updated.

Writing a research paper can be a lengthy process involving multiple edits. If this is done without using an electronic reference manager package the time to successful project completion will be considerably delayed.

Conclusion

I propose to give a brief oral primer on the software and hardware tools used in the Apple environment to manage a research project from initiation to completion for the benefit of individual practitioners and teams involved in group research.

*****NOTE FOR reviewer

The submission does not allow for images, this is a graphical presentation while it can be done on poster more would be represented and explained in an oral talk

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Rez de Jardin poster area

REVISING MEDICAL EDUCATION – TEACHING UNIT VERSUS LEARNING UNIT IN DIFFERENT TEACHING MODALITIES AND THEIR ROLE IN THE MEDICAL CURRICULUM BY THEORY AND STUDENTS CONSIDERATION.

Ulf Martin Schilling (1)

1. Emergency department, University hospital Linköping, Linköping, Sweden

Corresponding author: ulf.martin.schilling@gmail.com

Keywords: Teaching unit, Learning unit, teaching modalities

This manuscript aims to evaluate the different teaching modalities problem based learning (PBL), seminar, lecture, scenario training and clinical training and their potential advantages and disadvantages during the course of medical education.

Background: Current medical education is organized in the form of teaching units, i.e. amount of knowledge assumed to be transferred in a defined amount of time. However, learning at different ages and different levels of education varies at group and individual level due to experiential learning which is one of the reasons for the propagation of student-centered learning approaches. A learning unit is – in contrary to the teaching unit (content x time) - defined by content solely. Thus, the LU might define the progress of the student in the acquisition of knowledge more accurate than the TU. The TU might be helpful in defining the process of learning itself, as well as the potential use of different educational techniques. In this paper, we introduce the concept of LU and relate it to the different modalities of teaching in medical education. Further, we

reveal advantages and disadvantages of problem-based learning, seminar, lecture, clinical practice and scenario-teaching/simulation, as well as the students' acceptance of those.

Method: Survey among medical students (year 1, 4-5, and last year) regarding the attitude towards different teaching modalities. Review of the current literature.

Results: 38 surveys were recollected, 13 year 1, 10 year 4+5, 15 last year. A shift in preferred teaching modality was observed from clinical practice (8/13), PBL (7/13) and lecturing (3/13) to clinical practice (8/10) and scenario training (4/10), to clinical practice (10/15), scenario (10/15) and lecturing (8/15).

Discussion:

PBL is a highly interactive form of teaching facilitating deep understanding. It is based on theoretical solutions on a group level, training interactive skills are highly appreciated by junior students. Lecturing is a classical form of teaching with limited potential of interaction, and limited amount of knowledge can be transferred usually to surface understanding, whilst students might be stimulated to further learning. Scenario teaching is a highly interactive form of teaching on minor group or individual level, and clinical training is rather individual with high stimulation of deep learning. During medical education, the development of competence according to the concept of Hesse results in a shift in attitude towards different learning modalities, which seems not to be reflected in the current curriculum.

Conclusion: During medical education, the medical student will undergo personal and professional development. With a time of study of 5.5 years at the university and further 1.5 years as AT, he will change his habits of learning during this course. Progressing in accordance with the ladder of legitimacy towards level 2 or 3, the students' preferences of teaching modalities will change from clinical teaching, PBL and lecture to clinical training and scenario-teaching. Before final graduation, the students will accept clinical lectures as beneficial again, potentially related to the experienced pressure of leaving the protected environment of the university. Both in early and late education, different forms of group-work are preferred by our students, whilst mid-grade medical students prefer individual teaching.

Due to the implications of the LU for student-centered teaching, it might be wise to adopt a concept of teaching modalities as by PBL, seminar and lecturing during the preclinical years, to proceed to clinical teaching, scenario teaching and completing lectures and seminar in early clinical terms, and to conclude with clinical teaching, scenario teaching and lecturing before final graduation. With exception of the preclinical level, this seems to be in concordance with the medical students' preferences.

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PATIENT'S COMPLAINT: ¿A GOOD TOOL?

Ana Isabel Condon Abanto (1), Sara Visiedo Sanchez (1), Teresa Escolar Martínez-berganza (1), María Peña

Lopez Galindo (1), Jose Luis Del Rio Aisa (1), Miguel Rivas Jiménez (1)

1. Emergency department, HCU Lozano Blesa, Zaragoza, Spain

Corresponding author: anusketa_85@hotmail.com

Keywords: Security, Adverse events, Patient's Complaints

It seems the difficulty to implement reliable systems reporting of adverse events (AEs) in our health systems.

We observed that the careful study of patient's complaints to the emergency department can be a useful source to detect security clinical problems.

Objectives: To detect problems related with clinical safety with serious consequences on a hospital emergency department) after studying complaints from patients.

Patients, materials and methods: A retrospective observational study of patient's complaints treated in a university hospital(870 beds), during the period from January 1, 2010 and October 31, 2012.

Sources of information: official sheet claims, medical record and official answer sheet. For collecting data designed a study based chip EVADUR. Data were analyzed using SPSS 18.

Results: During the reported period 150 complaints were received. Their study found 22 cases of AEs, of which 6 were rated with severe. The average waiting time for first care was 5.3 (± 10.25) minutes with hospital time of 7.2 (± 1.63) hours. 66.7% were male with a middle-age of 54 (± 4.88) years old. 66.6% of these patients had a risk factor to develop an EA, of which 75% was independent of the patient. The 68.2% they had been seen by internal doctor. They qualify one of them as an incident, and the rest (5) as EA. In 66.7% of the cases involved health action failure. Were detected 4 cases of exitus. In cases 1 EA was related with the procedure, in 4 in relation with cares and one hospital infection. In 90% the patients required hospitalization. In 70% of cases had a moderate probability that the assistance was the cause of the injury and on the factors and conditions related latent AEs, 46% were related with the professional.

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Rez de Jardin poster area

MEDICAL SIMULATION: MEASURING LEADERSHIP AND TEAMWORK AMONG EMERGENCY MEDICAL PERSONNEL TO DEVELOP A TRAINING PROGRAM

Antonio J. Casal Sanchez (1), Luis Sanchez Santos (2), Laura Calviño Pereira (3), J. Antonio Iglesias Vazquez (2), Antonio Rodriguez Nuñez (4), Jose Manuel Aguilera Luque (1)

1. Emergency department, F.P.U.S. 061 de Galicia, Vigo, Spain

2. Emergency department, F.P.U.S. 061 de Galicia, Santiago de Compostela, Spain

3. CMA, Complejo hospitalario de Pontevedra, Pontevedra, Spain

4. Pediatric Emergency and Critical Care Division, Department of Pediatrics, Hospital Clínico Universitario de Santiago de

Compostela,, Complejo hospitalario Universitario de Santiago, Santiago de Compostela,, Spain

Corresponding author: antonio.casal.sanchez@sergas.es

Keywords: medical simulation, leadership, teamwork

Leadership and Teamwork skills are a key point in emergency medicine. Medical education largely ignores leadership and teamwork skills.

To train the healthcare providers by means of advanced Medical simulation, is one of the most has emerged as an effective tool.

Objectives:

Main objective was to measure the leadership and teamwork, and evaluating interventions. Identify areas for improvement to provide our professionals, the skills and knowledge to establishing and maintaining a team and managing the tasks in crisis management.

Methods

A simulated clinical scenario of a STEMI complicated with a cardiac arrest, was designed and performed throughout the Laerdal Simman 3G high fidelity human simulator system.

Forty two (42) emergency teams (crew: 3-4) developed the STEMI scenario. Their performance was registered and recorded in audio and video throughout the Laerdal Advanced Video System.

We administered a score after the intervention one for the leadership, based in "Behaviors of Team Leader for Effective ACLS" and "leader behavior description questionnaire" –with the evaluation of 12 items, score was from 0="not done", 1="done inconsistently" to 2=" done consistently".

Teamwork was measured with the "Mayo high performance teamwork scale", evaluates 16 items. 8 are mandatory, and the other may be marked "NA" not applicable if not situations occurred. The scale was from 0="never or rarely", 1="inconsistently" to 2=" consistently".

Results

Leadership: 100% identified self as a team Leader. Acts as leader (0-2): 1.51. Verifies code status 95,1%, Speaks loudly and clearly:69.1%. Delegate tasks to individuals (0-2):1.36. Used closed-loop communication: 29.6%. Demonstrate knowledge of protocols (0-2): 1.29. Appropriately positions in the room: (0-2): 1.21. Motivate: 29%. Identifies and respond to errors: (0-2): 0.9. Effectively summarizes and reevaluate:26%. Good communication with the patient:85.3%

We try to assess the overall setting a punctuation of 10 with an average value for leadership: 6.16

Teamwork: scale (0="never or rarely", 1="inconsistently" to 2=" consistently".)

Averages: Leader clearly recognized for team members: 1.55. Leader assures maintenance between command and team members participation: 1.2. Team members (TM) demonstrate understanding of his/her role: 1.47. Team prompts each other to attend to all significant clinical indicators: 1.10. Verbalize their activities when are actively involved with patient: 0.8. TM repeats back or paraphrase to indicate that they heard them correctly: 0.57. TM refresh

to protocols and checklist: 77.5. All members are involved and participate: 1.77.

Disagreements/conflicts among TM are addressed without a loss of situation awareness: 1.2, 35% NA. Roles are shifted appropriately to address emergent events: 1; NA 4.7%. TM acknowledge their lack of understanding and ask for clarifications:0.82; NA:26%. TM acknowledges (positive manner) statements directed at avoiding or containing errors or seeking clarification: 1; NA: 14.24%. TM call attention to actions that they feel could cause errors:1.02; NA:11.9%. Statements directed at avoiding or containing errors do not elicit a response to avoid or containing the error, TM persists in seeking a response: 0.77; NA: 35.7%. Team members ask each other for assistance prior or during periods of task overload: 1.025; NA: 2.3%.

CONCLUSIONS

Optimal leadership and the teamwork ensure best practices and patient safety, avoiding adverse events causing harm to patients. We detect weaknesses in the area of communication, in both the leader and the functioning of the team.

We must strengthen horizontal and assertive leadership, able to motivate the team and constantly reassess. And encourage the use of closed-loop communication as a factor of patient safety.

Teamwork weaknesses are also in the field of communication, verbalize their activities, paraphrases to ensure that they heard them correctly, and the actions and the actions that are taking place. and everything that has to do with the communication of errors, incompression of orders, etc. in a positive manner, without a loss of situation awareness.

Advanced medical simulation appears to be useful to detect the improvement areas and the weaknesses of this professional population, and definitely develop a training program to ensure effective communication as a member or leader of a resuscitation team and recognize the impact of team dynamics on overall team performance.

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Rez de Jardin poster area

BACKING UP YOUR RESEARCH WHAT OPTIONS ARE AVAILABLE AND HOW TO PREVENT RESEARCH MELTDOWN

Michael S Molloy (1,2,3), Zane Sherif (4) , Conan Reilly (6) , Noel Reilly (5) , Gregory R Ciottone (2)

1. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPOT) Department of Emergency Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland
2. Harvard Affiliated Disaster Medicine/Emergency Management Fellowship, Department of Emergency Medicine, Beth Israel Deaconess Medical Centre, Boston, MA, USA
3. Emergency Department Connolly Hospital, Blanchardstown, Dublin 15, Dublin, Ireland
4. Radiology Department, Gold Coast University Hospital, Southport, Australia
5. Emergency Department, Our Lady of Lourdes Hospital, Drogheda, Ireland
6. Beaumont Hospital, Dublin, Ireland

Corresponding author: mickmolloy@mac.com

Keywords: Medical Informatics, Research Tools, Disaster Medicine

Introduction

Many undergraduate curricula now include formalised teaching in Medical informatics. Established practitioners may not have benefitted from that experience and will more likely work in a medical environment where the Windows platform is dominant. As a result the medical researcher is faced with challenges when looking for technical help with regard to backing up their data securely locally, portably and in the cloud.

Apple has been recognised as an innovator and leader in terms of technology development in the last decade. The integration of services from laptops, personal computing, iPods, iPads and iPhones to the recent innovations in cloud storage and local backup technology allied to the myriad of newly designed software packages provide the medical researcher with tools to enhance their productivity and knowledge however this requires education.

Appropriate project management ensures that projects are completed on time to the correct specification. Password protection of data ensures that it should be difficult for those not involved with research to access the data. No protection is however ultimate but a combination of techniques will make your data as secure as it can possibly be.

When the researcher works on a number of devices in a number of locations ensuring they are using the current version of documents and data is vital to the projects integrity.

Conclusion

I propose to give a brief oral primer on the innovative software and hardware tools used in the Apple environment to back up a research project for the benefit of individual practitioners and teams involved in group research.

*****NOTE FOR reviewer

The submission does not allow for images, this is a graphical presentation while it can be done on poster more would be represented in an oral talk

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Rez de Jardin poster area

A CHILD'S ADVENTURE IN A+E - A GUIDEBOOK TO THE CHILDREN'S EMERGENCY DEPARTMENT WRITTEN FOR CHILDREN BY CHILDREN

Heidi Edmundson (1), Diane Samuels (2)

1. Emergency Medicine, Whittington Hospital, London, United Kingdom

2. xx, Grafton Primary School, London, United Kingdom

Corresponding author: heidi.edmundson@nhs.net

Keywords: children, guidebook, emergency department

I am an emergency medicine consultant based in an inner city hospital which sees approximately 16 000 children/yr.

Most children's experience of hospital is either of or involves the Emergency Department.

We have a general assumption that children may find these visits stressful. However I felt that it would be interesting to explore what they really thought and felt about the department and to explore what their hopes, fears and expectations were.

Also, due to its nature, visiting an emergency department is unplanned and unpredictable. We decided to create a guide to prepare both children and their parents for what they might expect or encounter.

I worked with children from Grafton primary school, their writer in residence Diane Samuels and artist in residence Tessa Garland.

Diane and I had sessions with the children during which they asked me anything they wanted to know and they also visited the department. They each selected an accident which they acted out in their drama class. Following this they attended and we role played the management they would receive including waiting.

Throughout they were encouraged to write about everything. From this large body of 'raw work' they selected what they wanted to tell other children. They wanted a booklet which had a magazine/comic feel to it.

They worked with artist Tessa Garland on the illustrations and also selected the layout design, font type etc with graphic designer Alex Anthony.

The result, A Child's Adventure in A + E, is a guide book written for children by children.

During their time with us they became experts in the department having experienced it in a very real way. They noticed a variety of things which had previously escaped myself and other staff members or saw things from a whole different perspective. All of which has been captured in a 'Child's Adventure in A+E'.

I feel that this project gave us a very interesting insight into the experience of the department from a child's perspective. Similarly in producing the booklet the children have captured this information in a fun format which will appeal to other children and improve their experience of the hospital.

Also most children's experience of hospital is via the emergency department which, by its nature, is unplanned. Very little information/literature exists to prepare children for this experience.

We are currently looking into the possibility of having a similar project, involving adults, in which Diane would act as a writer in residence and work with adult patients in the waiting room.

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Hall Accueil Expo poster area

TRIAJE MODIFIED MANCHESTER GIVES H XATIVA BEFORE HYPOGLYCEMIAS IN OUR HOSPITAL IN 2012

Soria Millan Soria (1), Juan Carlos Montalva Barra (2), Angel Torregrosa Sanchis (3), Marina Valiente (4)

1. urgences, H. lluis alcanys, xativa, Spain
2. urgencies, h lluis alcanys, xativa, Spain
3. XATIVA, H LLUIS ALCANYS, XATIVA, Spain
4. urgences, h lluis alcanys, xativa, Spain

Corresponding author: jucar46680@gmail.com

Keywords: hypoglycemia, triaje manchester, urgences endocrine

TRIAJE'S SYSTEM MANCHESTER MODIFIED IN H. LLUIS XATIVA'S ALCANYS IS REALIZED BY THE INFIRMARY OF THE SERVICE OF URGENCIES FOLLOWING A FEW ARTICLE AND A FEW PRIORITIES THAT THE DERIVATION TRIES TO DO AND ACTION TO MEDICATE AS IMMEDIATE AS POSSIBLE ACCORDING TO THE ABOVE MENTIONED PRIORITIES AND TO LOCATE THE PATIENTS IN 3 CERTAIN ZONES IN ORDER THAT THE ABOVE MENTIONED ACTION IS THE MOST EFFECTIVE METHOD: ON THEM NEAR 58000 URGENCIES REPRESENTED IN 2012

I KNOW THEY ATTENDED TO 28 URGENCIES FOR HYPOGLYCEMIA THAT WAS LOCATED IN 3 AREAS: RESUSCITATION, OBSERVATION AND TAKEN CARE INTENSIVE. AFTER TREATMENT INICIAL I KNOW RESULTS: GIVE 19 URGENCIES FOR HYPOGLYCEMIA 4 PASSED TO RESUSCITATION, 2 TO TAKEN CARE INTENSIVE, 3 TO OBSERVATION. THE DESTINATION OF THE ABOVE MENTIONED PATIENTS WENT GIVE 8 HOSPITALIZED ONES WITH AN AVERAGE OF TIME OF STAY IN URGENCIES GIVE 12 H. 15 WERE GIVEN OF ALTA WITH LESS GIVE 7 H OF STAY AND 2 I KNOW THEY SENT TO ELEGANT INTENSIVE CONCLUSIONS: 1-THE TRIAJE OF XATIVA'S MANCHESTER OBJETIVIZA GRAVITY AND PRIORITY IN MEDICAL ATTENTION IMPROVING AND AVOIDING COMPLICATIONS 2-I KNOW IT DISCRIMINATES OF MORE EFFICIENT FORM AND ACTIVATES THE USE OF AREAS OF URGENCIES MOBILIZING TO THE PERSONNEL TO OPTIMIZE THE MEANS 3-THIS TRIAJE IT ALLOWS TO REDUCE THE TIMES AND MEDICATION AS THE STAY GIVES YOU CHANGE SHARP PATHOLOGIES IMPROVING THE COSTE-BENEFICIO-EFICIENCIA OF THE MEDICAL ACT 4-THIS TRIAJE'S SYSTEM IS TOTALLY EXTRAPOLABLE TO THE REST OF REGIONAL HOSPITALS AND OF REFERENCE OF THE REST OF THE SPANISH CONDITION

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CONTRIBUTION OF PROCALCITONIN IN DIABETIC KETOACIDOSIS

Mariem Ezzaoui Rahali (1), Khalid Khaleq (1), Mohammed Moussaoui (1), Morad Nafaa (1)

1. Emergency departement, University Hospital Ibn Rochd Casablanca, Casablanca, Morocco

Corresponding author: Rimovtsh@hotmail.fr

Keywords: diabetic ketoacidosis, procalcitonin, infection

INTRODUCTION: Diabetic ketoacidosis (DKA) is a very serious complication frequently encountered in diabetic

subjects. Infection is the factor of decompensation most incriminated but remained difficult to diagnose. In this context we focus on procalcitonin.

PURPOSE OF JOB: To assess the value of procalcitonin in detecting infection in diabetic decompensation.

MATERIALS AND METHODS: A prospective study monocentric spread over 12 months, including patients admitted for diabetic ketoacidosis for more than 48 hours. The variables studied were clinical, biological, therapeutic and evolutionary order comparing survivors and died with significant validated 0.05 threshold.

RESULTS: 70 patients were identified, including 42 women and 28 men. The average age was 45.8 years. The type 2 diabetes was the most affected (45%). Digestive and neurological signs were the most frequent reasons for hospitalization in respectively 65.7% and 44.3% of cases. Fever was present in 44.3% of cases. The electrolytic hydro balance showed a metabolic acidosis in 85.7% of cases. Blood count objectifying leukocytosis in 71%. The PCT achieved in 31.4% of cases. The urinalysis performed in 15% of patients. The chest radiograph performed in 77.2% of patients. Abdominal ultrasound was performed in 70% of cases. The infection was present in 68.6% of cases. Sites were found in 35.4% of respiratory and urinary case in 22.9% of cases. Other sites represented 42.7% of cases. Mortality is estimated at 14.3% of cases.

CONCLUSION: Infections remain the leading cause of diabetic metabolic decompensation. The determination of PCT contributes to improving the management of infected patients and reduces mortality.

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BIG'S COMPLICATIONS IN URGENCIES THERE HAVE BEEN STUDIED 100 INTRAGASTRICS BALLS

Juan Carlos Montalvá Barra (1), Juan Enrique Perez (2), Juana Deltell (2), Vicente Cervera (3), Lourdes Codina (2)

1. Coordinator in Obesity (POSE- BIG), Corporacion Dermoestetica Clinical, Spain

2. Medical Director Clinic, Corporacion Dermoestetica Clinical, Spain

3. Endoscopic Medicin, Corporacion Dermoestetica Clinical, Spain

Corresponding author: jucar46680@gmail.com

Keywords: OBESITY, BALON INTRAGASTRIC, MORBIDE

INTRAGASTRICOS AND HIS COMPLICATIONS REPRESENTED IN URGENCIES DURING 2012 I STUDY. PRECOCIOUS COMPLICATIONS AND FAST OF INTRODUCTION OF BALL INTRAGASTRICO IN ORDER TO HELP THE OBESE MORBID ONE IN REACHING DECREASES OF WEIGHT OF 80 STUDIED PATIENTS IS OBSERVED: PRECOCIOUS COMPLICATIONS (IN LESS THERE GIVES 72 H) THE VOMITS (65 %) AND PAIN EPIGASTRICO (45 %) THEY ARE DOMINERING, 1 I MARRY OF DEHYDRATION I WEIGHED ANCHOR AND 1 I MARRY OF HEMOPTISIS LIMITED BY ENDOSCOPIO LATE

COMPLICACIONES: INTOLERANCE TO OCCURRED AND EPIGASTRALGIA IN 18 % AND ALTERATIONS OF INTESTINAL TRANSITORY TRAFFIC IN 12 %

CONCLUSIONS: THE PLACEMENT OF METHOD BIG IN OBESITY LOST PEERMITE OF WEIGHT SUPERIOR TO DIET ONLY AND THE HOSPITABLE COMPLICATIONS ARE BANAL IN 99 % GIVE THE CASES

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Hall Accueil Expo poster area

COLD AND CONFUSED

Karin Eggink (1), Maurice Vroegop (1)

1. Emergency department, UMC st Radboud, Nijmegen, Netherlands

Corresponding author: k.eggink@seh.umcn.nl

Keywords: Poikilothermia, Hypothermia, Hyponatremia

Case-Report: Cold and Confused

KM Eggink MD, M Vroegop MD

University Medical Centre St. Radboud, Nijmegen

Introduction

Human beings are homeotherm and regulate their body temperature in accordance to surrounding temperature by peripheral vasodilatation, sweating, shivering and vasoconstriction. These mechanisms are regulated by the hypothalamus and are called thermal homeostasis. When the hypothalamus fails poikilothermia develops. Poikilothermia is defined as the variation of body temperature with the surrounding temperature.

Case:

We describe the presentation of a 59-year old woman, with agitation, confusion and hypothermia in the emergency room. After not been seen for a couple of days by her neighbour the patient was found in a confused and agitated state, unable to tell what happened. Prehospital a temperature reading was not possible with a normal thermometer. The patient had a history of hypothalamic-pituitary insufficiency, with complete dysfunction of the pituitary gland, poikilothermia and central diabetes insipidus, treated with hormone supplements.

In the Emergency Room the patient showed GCS13, BP 125/80, pulse 90 bpm in which an ECG showed atrial fibrillation and saturation 100% without oxygen. Temperature measured with deep rectal probe was 31.5°C. No apparent injuries, signs of infection or neurological problems were present. Laboratory results are shown in table1.

A chest X-ray showed no signs of pneumonia.

Table 1: Laboratory Results

Sodium	Potassium	GFR	WBC	CRP
Art gas:	pH	pO2	pCO2	HCO3-
BE				

Urine:

Osmolality

Sodium	156		
4.5	50	3.5	15
7.32	9.0	7.9	29.5
1.7			
159			
39			

The differential diagnosis was hypothermia based on infection with the history of poikilothermia. Combined with hyponatremia based on decreased fluid intake and decreased mental state in central diabetes insipidus.

Patient was treated with intravenous antibiotics, hydrocortisone, desmopressin, warm glucose5% fluids and a bearhugger.

After 6 hours the sodium levels had decreased to 147 and the glucose5% was switched to normal saline, temperature had risen to 35.6°C. The second ECG showed sinusbradycardia with no signs of ischemia. Despite increased temperature and decreased sodium levels, the patient turned from agitated and confused to lethargic and variably responsive, GCS3-5-1. No other neurological symptoms were found.

A cerebral CT and MRI were performed which excluded brain edema and other intracranial acute pathologies, and showed no signs of encephalopathy. Little pituitary tissue was seen with no anomalies in the hypothalamus. (fig.1)

In the following days temperature and sodium levels stabilized with environmental temperature control, saline infusions, antibiotics, hydrocortisone and desmopressin. The neurological status improved but she did develop delirium with hallucinations, which was treated symptomatically.

Fig. 1 Cerebral MRI with significant loss of pituitary tissue.

Conclusion:

The hyponatremia and hypothermia in this patient were associated with her pre-existent hypothalamic-pituitary insufficiency with central diabetes insipidus. She probably developed a metabolic encephalopathy as a result of a secondary Addisonian crisis, derailed diabetes insipidus or overly fast correction of the hyponatremia.

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SYSTEMATIC LOW DOSE UNENHANCED COMPUTED TOMOGRAPHY FOR SUSPECTED RENAL COLIC IN THE EMERGENCY DEPARTMENT: A PROSPECTIVE STUDY

Julie Pernet (1), Sandra Abergel (2), Amine Ayed (3), Jerome Parra (4), Tostivint Isabelle (5), Marc-olivier Bitker (4), Bruno Riou (6), Yonathan Freund (1)

1. Emergency Department, Hopital Pitie-Salpetriere, Paris, France
2. Emergency Department, Hopital Pitié-Salpêtrière, Paris, France
3. radiology Department, Hopital Pitié-Salpêtrière, Paris, France
4. Service d'urologie, Hopital Pitié-Salpêtrière, Paris, France
5. Nephrology Department, Hopital Pitié-Salpêtrière, Paris, France
6. Emergency Department, Hopital Pitie-Salpetriere, Paris, France

Corresponding author: yonatman@gmail.com

Keywords: renal colic, CT, imaging

Objectives: Unenhanced Computed Tomography (UCT) has become the standard imaging study for uncomplicated renal colic. However, modality and timing of imaging has not been established, with most guidelines recommending a time frame that varies from one to seven days. The primary objective of this study was to determine the rate of alternative diagnosis in patients suspected of having uncomplicated renal colic with systematic Unenhanced Computed Tomography (UCT) in the ED.

Methods: This was a prospective monocentre study in a large tertiary university hospital ED. For a 6 month period, all patients with suspected renal colic that were to be discharged underwent low dose UCT in the ED, interpreted by two radiologists. Women with suspicion of pregnancy and patients that had already undergone diagnostic imaging were excluded. Primary endpoint was the rate of alternative diagnosis. Univariate analysis was performed to assess factors associated with the primary endpoint.

Results: 178 patients were screened in the 6 month period, of which 155 had an UCT in the ED. Mean age was 42 years, 69% were male. 118 (76%) had a confirmed uncomplicated renal colic and 27 (17%) had an inconclusive CT. Overall, 10 patients (6%, 95% confident interval [3% to 10%]) had an alternative diagnosis, of which 5 patients were subsequently hospitalised.

Conclusion: Systematic low dose UCT in the ED changed the diagnosis in 6% (95% CI 3% to 10%) of patients. These prospective findings could be an argument for a systematic imaging in the ED for suspected renal colic.

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AGE DIFFERENCE OF RENAL RESISTIVE INDEX IN PATIENTS WITH UNILATERAL URINARY STONE DISEASE

Jeonghyeon Yi (1), Chang Hwan Sohn (1), Bum Jin Oh (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: Renal resistive index, Urinary stone disease, Age difference

Background: The reviving interests bring the spotlight back onto the renal resistive index (RI) because of insufficient hemodynamic monitoring tools in critical ill patients. However RI is influenced by systemic and renal hemodynamic changes, interstitial pressure, and also arterial stiffness of kidney. Even, there is no established reference range of RI values yet. We studied the range of RI values according to age groups in acute unilateral urinary stone disease patients. **Methods:** Our study consisted of 155 adult patients, with 310 kidneys, who presented with unilateral acute urinary stone disease documented with

radiologic studies. All patients underwent Doppler ultrasonography for determination of the resistive index (RI). **Results:** There was no difference in RI between right and left kidney with/without ureteral obstruction ($p=0.772$ and 0.382 , respectively). In ureteral obstruction, kidneys with urinary tract stone ($n=50$) had a mean RI of 0.703 ± 0.009 , contralateral normal kidneys ($n=50$) had a mean RI of 0.630 ± 0.007 , a significant difference ($p<0.01$). Similarly, in no ureteral obstruction, kidneys with urinary obstruction ($n=105$) had a mean RI of 0.676 ± 0.006 , contralateral normal kidneys ($n=105$) had a mean RI of 0.630 ± 0.006 , a significant difference ($p<0.01$). RI showed a trend of elevation according to aging (table 1). In old patients, RI value was higher than the value of kidney with urinary obstruction in young patients. However, we could not find statistical value because of the limited number of patient. **Conclusion:** RI is significantly higher in the kidney with urinary tract stone than contralateral normal kidney regardless of ureteral obstruction. However, considering age of patients, RI could be higher in normal kidney in old age than pathologic kidney in young patients.

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INFLUENCE OF INTRAVENOUS FUROSEMIDE ON RENAL RESISTIVE INDEX IN UNILATERAL URINARY STONE DISEASE

Sung Ho Kim (1), Chang Hwan Sohn (1), Bum Jin Oh (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: Renal resistive index, Urinary stone disease, Diuretics

Background: The renal resistive index (RI) because of insufficient hemodynamic monitoring tools in critical ill patients. RI is influenced by systemic and renal hemodynamic changes, interstitial pressure, and also arterial stiffness of kidney. In cases with acute kidney injury, the chance of diuretic administration is increased but its effect on RI was not revealed. We studied the effect of diuretic on RI values in acute unilateral urinary stone disease patients. **Methods:** Our study consisted of 42 adult patients, with 84 kidneys, who presented with unilateral acute urinary stone disease documented with radiologic studies. All patients underwent Doppler ultrasonography for determination of the RI pre and post furosemide administration. **Results:** There was no difference in RI between right and left kidney with/without ureteral obstruction (pathologic site 0.625 ± 0.047 and nonpathologic site 0.618 ± 0.042 , $p=0.247$). In ureteral obstruction, kidneys with urinary tract stone ($n=11$) had a mean RI of 0.631 ± 0.057 , contralateral normal kidneys ($n=11$) had a mean RI of 0.616 ± 0.040 , a nonsignificant difference ($p=0.300$). Similarly, in no ureteral obstruction, kidneys with urinary obstruction ($n=31$) had a mean RI of

0.623+/-0.044, contralateral normal kidneys (n=31) had a mean RI of 0.619+/-0.043, a significant difference (p=0.540). The change of RI after furosemide infusion showed a trend of initial elevation but had significance only in non-obstructed normal kidney side (table 1). RI value was not significantly changed after intravenous furosemide administration. However, the most RI values were low and the number of cases was too small to make a statistical significance. Conclusion: RI was not significantly changed after furosemide administration in the kidney with urinary tract stone or contralateral normal kidney regardless of ureteral obstruction. However more large size study would be needed.

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UNFUSED CROSSED RENAL ECTOPIA WITH NEPHROLITHIASIS

Mehmet Akcimen (1), Tuba Cimilli Ozturk (2), Halil Al?skan (3), Ozge Ecmel Onur (1), Hasan Demir (1)

1. Emergency Department, Istanbul Fatih Sultan Mehmet Education and Research Hospital, Istanbul, Turkey

2. Emergency Medicine, Istanbul Fatih Sultan Mehmet Education and Research Hospital, Istanbul, Turkey

3. Emergency Department, Istanbul Fatih Sultan Mehmet Education and Research Hospital, Istanbul, Turkey

Corresponding author: tcimilliozturk@gmail.com

Keywords: ectopic kidney, nephrolithiasis, unfused crossed renal ectopia

Introduction:

Crossed renal ectopia is the second most common fusion anomaly of the kidney after horseshoe kidney. The incidence of both fused and unfused cases is 1 in 7000 in autopsies. Bhistkul estimates its occurrence at 1 in 1000 livebirths. The unfused crossed renal ectopia is much rare with an incidence of 1/75000 in autopsies. It consists of transposition of a kidney generally with left-to right crossover. The ureter of the ectopic kidney inserts into its normal position in the bladder at the contralateral side. The mechanism of the normal embryological ascent of the kidneys is not well understood. Therefore the reason of failure of ascent and complete rotation is also not clear. Poor development of a kidneybud, a defect in the kidney tissue responsible for prompting the kidney to move to its usual position, genetic anomalies and exposure of the mother to drugs, chemicals, or infections during the pregnancy are thought to be the cause of this anomaly. The anomaly is generally diagnosed at pediatric age group during the investigation of accompanying malformations. Guand Alton reported 33 cases with associated congenital anomaly. But incidentally detected cases are not rare (20-30%). Because an ectopic kidney may function normally people may remain a symptomatic for years. The possible complications are listed as infection, kidney damage due to reflux of urine, trauma and nephrolithiasis. Here we are presenting a right sided unfused crossed renal ectopia case

with associated nephrolithiasis and contralateral costovertebral angle tenderness.

Case:

A 64 year old male presented to emergency room with left sided flank pain. He described sudden onset colic pain. He also complained of dysuria with associated nausea and vomiting. Past medical history reveals nothing special. The vital signs were normal. On physical examination there was left costovertebral angle tenderness. There was also mild left sided abdominal tenderness on palpation. The physical examination was otherwise normal. The urine analysis was normal. The renal function tests were also normal. Computed tomography scan revealed crossed renal ectopia. The ectopic kidney was located below the right kidney. Both kidneys were located separately and the ureter of the ectopic kidney was inserted into the bladder at the contralateral site. Both kidneys were in normal size. There was 4mm nephrolithiasis at renal pelvis of the ectopic kidney. Hydronephrosis was not observed. There was not any other anomaly or pathological finding on the CT scan. He was pain free after narcotic analgesic.

Discussion:

During fetal development, the urinary bladder enters the metanephric blastema adjacent to the anlage of the lumbosacral spine. During the next 4 weeks, the developing kidney comes to lie at the level of the L1-L3 vertebrae. The mechanism of the normal embryological ascent of the kidneys is not well understood. Therefore the reason of failure of ascent and complete rotation is also not clear. Renal ectopia is frequently associated with congenital abnormalities of other organ systems. It may not cause any symptom and may function normally. In other cases, an ectopic kidney may cause abdominal pain or urinary problems.

Because the visceral afferents follow a segmental distribution, visceral pain can be localized by the sensory cortex to an approximate spinal cord level determined by the embryologic origin of the organ involved. Stimuli from visceral fibers of the kidneys enter the spinal cord at about T10-12 and stimuli from visceral fibers of the ureters enter at about L1-2. Pain perception is localized on the related cutaneous dermatomes. Here in our case the patient was complaining about a colicky pain at the opposite site. We thought that this might be related with contralateral innervation of the ectopic kidney.

Today antenatal diagnostic methods are constantly evolving, therefore organ anomalies are recognized before birth. Infants are taken for follow-up for possible complications. As we know in adults it may remain asymptomatic for years. With more frequent use of radiologic imaging in emergency department, the likelihood of physicians to come across with these type of rare anomalies is increasing. This may provide to search for accompanying congenital anomalies in this group of patients.

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FALLS IN THE ELDERLY: THE TRINIDAD AND TOBAGO EXPERIENCE

Rebekah Rachna Yogi (1), Ian Sammy (2), Joanne Paul (2), Paula Nunes (2)

1. Emergency Department, San Fernando General Hospital, San Fernando, Trinidad & Tobago

2. Faculty of Medical Sciences, The University of the West Indies, St Augustine, St Augustine, Trinidad & Tobago

Corresponding author: ian.a.sammy@gmail.com

Keywords: Elderly, Falls, Trauma

Background and Objectives:

The elderly population in Trinidad and Tobago is a rapidly growing segment of the population. previous unpublished work suggests that falls are the commonest mechanism of injury in patients over 65 years presenting to the emergency department in Trinidad. No published research exists into the risk factors for falls in this age group, or the patterns of injury resulting from falls.

The primary aims of this study were to determine the injury patterns and injury severity resulting from falls in the elderly in Trinidad, and to identify risk factors for falls in this age group.

Methodology

This study was a prospective surveillance study to determine the patterns, mechanisms, severity and outcome in adult fall – related trauma and to identify the risk factors contributing to the falls in the elderly presenting to the ED at SFGH over a period of 4 months period from 28th of March 2010 to 28th of July 2010.

Results

During the study period, 10436 trauma patients were registered, of which 1651 had sustained falls. 78.49% of patients with falls were young adults (18 to 65 years) and 21.51% were 65 years and over. In the 65 years and over age group more females sustained fall related trauma as compared to those in < 65 years. The most common mechanism of fall – related trauma were due to slip or trip in both the 65 and over and the below 65 age groups, followed by assault and fall from a height respectively. Head injury was the commonest site of injury in both age groups followed by hip and thigh injury in older age group and ankle and foot injury in the < 65 years age group. More severe injuries (level II and III) were sustained by the elderly fallers compared to the non – elderly; they also had a higher percentage of admission rate (34.17% versus 16.76%). In the elderly, the identified risk factors were diabetes, hypertension, ischaemic heart disease, gait and balance problems, cognitive disorder and polypharmacy.

Conclusions

Falls are the most common mechanism of injury in elderly patients presenting to the Emergency Department in Trinidad and Tobago. Elderly patients who have fallen are more likely to suffer more severe injuries than younger patients. The risk factors associated with falls in this study were comorbid conditions, dysmobility and polypharmacy.

Po-400

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THE RELATIONSHIP BETWEEN BONE MINERAL DENSITY AND BODY MASS INDEX IN OLD MEN

Yakup Aksoy (1), Yusuf Emrah Eyi (2), Mehmet Ilkin Naharci (3), Kadir Ozturk (4)

1. department of ophthalmology, gulhane school of medicine, Ankara, Turkey

2. department of emergency medicine, gulhane school of medicine, Ankara, Turkey

3. department of geriatry, gulhane school of medicine, Ankara, Turkey

4. department of gastroenterology, gulhane school of medicine, Ankara, Turkey

Corresponding author: kadirozturk3041@gmail.com

Keywords: bone mineral density, body mass index, old man

Introduction: Today, with the extension of life expectancy, osteoporosis become a major health problem in older men as well as women. Rates of morbidity and mortality after osteoporotic fractures in older men is more than women. In women, relationship between the body weight and bone mineral density (BMD) is known, but there is limited data in the literature about men. This study is designed to examine the relationship between the body weight and bone mineral density in elderly men.

Material and Method: Over 65 years old 231 male patients who were admitted Gulhane Military Medical Academy geriatry polyclinic were included in the study. DEXA (Dual Energy X-Ray Absorptiometry) method was used for BMD measurements. Cases were divided into 2 groups according to DEXA values as normal and low BMD (osteopenia or osteoporosis). Subsequently, each group were divided into 3 groups according to body mass index (BMI) values (18-25 kg / m²; 25-30 kg / m²; 30-40 kg / m²). The results of the study assessed using the SPSS 15.0 package program in Windows.

Results: The average age of patients with low BMD was 77.13 ± 6.27 and those with normal BMD was 75.23 ± 4.64. The rate of the patients who exercise was %49.2 in those with low BMD and %66.1 in those with normal BMD. Cases with low BMD were significantly older than those with normal BMD and doing less exercise (p = 0.02 and p = 0.05). Alcohol and cigarette consumption were not significantly different between the two groups (p = 0.166 and p = 0.237). BMD was increasing significantly with increasing weight in patients with low BMD (p = 0.001). There was not a significant correlation between weight gain and BMD in normal BMD group (p = 0.360). There wasn't a significant difference in BMD between patients with normal, low and high BMI in patients with lower BMD after equalization of age and exercise parameters in all cases (P = 0.001). There wasn't a statistically significant difference between slightly overweighted and obese cases (p = 1.000). **Discussion- Conclusion:** It's shown In this study that, in osteopenic and osteoporotic older men to have higher than normal weight is a protective factor for BMI. However, there isn't a significant contribution to be overweighted according to slight weighted. According to the results of this

study, its' thought that the opinion that the peripheral adipose tissue is protective for women may be valid for men too.

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INVESTIGATION OF THE RELATIONSHIP BETWEEN THYROID HORMONE LEVELS AND MORTALITY IN OLD PATIENTS HOSPITALISED IN AN INTERNAL MEDICINE INTENSIVE CARE UNIT FROM THE EMERGENCY SERVICE

Yagmur Topal (1), Ahmet Sebe (2), Mehmet Oguzhan Ay (3), Ayca Acikalin (2), Meryem Genc Karanlik (4), Metin Topal (3), Muge Gulen (3)

1. Emergency Department, Osmaniye State Hospital, Osmaniye, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
4. Emergency Department, Kilis State Hospital, Kilis, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Thyroid hormones, mortality, intensive Care Unit

Aim: In our study, our purpose was to determine the relationship between thyroid hormones, serum albumin and mortality of the patients over the age of 55 hospitalised to intensive care unit from emergency service.

Material and Methods: This study was planned as a prospective, randomized study and the patients hospitalized to intensive care unit from emergency medicine department were enrolled in this study following ethics committee approval. Standard data collection form was formed to collect the data in a standard way. After the confirmation of the patients and their relatives, we included 48 (% 65,8) male, 25 (% 34,2) woman and totally 73 patients to our study. Blood samples were taken from each patient, thyroid hormones and albumin levels were studied in our laboratory. "SPSS for Windows version 18" package program was used for statistical analysis of the data. Chi square test was used to compare categorical measures between the groups. Mann-Whitney U test and T-test were used to compare quantitative measurements between the groups. The Log-Rank test was performed under Kaplan-Meier Survival Analysis to determine the relationship between the estimated life time and the free T3 (fT3)-free T4 (fT4)-thyroid stimulating hormone (TSH).

Findings: There was no statistically significant difference in mean ages and genders of patients who died and survived. Mean duration of hospitalization in died patient group was lesser than survived patients group but there was no statistically significant difference between groups. There was a statistically significant association between mortality and the low albumin. According to the Kaplan-Meier Survival Analysis of the patients with low or high levels of fT3 were found to be shorter median life expectancy.

No significant relationship was found between mortality and fT4,TSH.

Conclusion: According to the low albumin levels and the Kaplan-Meier Survival Analysis of the patients with low or high levels of fT3 were found to be shorter median life expectancy. Albumin and free T3 measurements were determined to be used in the mortality estimation of the patients hospitalised to intensive care unit.

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THE RELATIONSHIP BETWEEN INFLAMMATORY REAGENTS AND MORTALITY IN PATIENTS OVER THE AGE OF 55 HOSPITALISED IN THE INTERNAL MEDICINE INTENSIVE CARE UNIT FROM THE EMERGENCY SERVICE

Hasim Onur Uluoz (1), Ahmet Sebe (2), Mehmet Oguzhan Ay (3), Yagmur Topal (1), Ayca Acikalin (2), Muge Gulen (3), Selen Acehan (3)

1. Emergency Department, Osmaniye State Hospital, Osmaniye, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Intensive care, Inflammatory reagents, Mortality

Aim: In this study, we tried to determine the relationship between inflammatory reagents, acute phase reactants, GKS, APACHE-II, SAPS-II scores and mortality of old patients hospitalised to internal medicine intensive care unit.

Material and Methods: This study was planned as a prospective, randomized study and the patients hospitalized to intensive care unit from emergency medicine department were enrolled in this study following ethics committee approval. Standard data collection form was formed to collect the data in a standard way. 48 (% 65,8) male, 25 (% 34,2) woman and a total 73 patients was including to our study. Blood samples were taken from each patient and WBC (white blood cell), hemoglobin, CRP (c-reactive protein), IL-1 (IL-1), IL-6 (interleukin-6), IL-10 (interleukin-10), TNF-alpha (tumor necrosis factor-alpha), PTZ (prothrombin time), aPTT (activated partial thromboplastin time), albumin, ferritin levels were studied in our laboratory. Glasgow Coma Scale, SAPS-II and APACHE-II scores were calculated for each patient. "SPSS for Windows version 18" package program was used for statistical analysis of the data. Chi square test was used to compare categorical measures between the groups. Mann-Whitney U test and T-test were used to compare quantitative measurements between the groups.

Results: Among patients who died and survived did not have a statistically significant difference in mean age. Mean duration of hospitalization in died patient group was lesser than survived patients group but there was no statistically

significant difference between groups. A significant relationship was found between mortality and the highness of ferritin, aPTT, SAPS-II and the lowness of albumin, GCS. No significant relationship was found between mortality and leukocyte count, haemoglobin, PTZ, CRP, TNF-alpha, IL-1, IL-6, IL-10, APACHE-II score.

Conclusion: SAPS-II, GCS, ferritin, albumin, aPTT measurements were determined to be used in the mortality estimation of the patients hospitalised to intensive care unit.

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THE LITTLE OLD LADY'S HERNIA: OBTURATOR HERNIA

Mingtse Tsai (1), Kuangchau Tsai (1)

1. Emergency Department, Far Eastern Memorial Hospital, New Taipei City, Taiwan

Corresponding author: kakaitsai@gmail.com

Keywords: hernia, geriatrics, ultrasound

This 87 year-old lady was brought to the emergency department due to right hip pain and vomiting for 1 day. Physical examination revealed a lump in her right inguinal area. A bowel loop was identified by further ultrasonographic study. Obturator hernia was suspected. Computed tomography presented a right trans-obturator bowel loop. She received the operation immediately. A segment of small intestine was incarcerated at right obturator foramen and therefore reduced smoothly. She made an uneventful recovery and was discharged after 2 days. Obturator hernia is a rare variety of abdominal hernia that nonetheless is a significant cause of morbidity and mortality. It occurs most frequently in emaciated patients aged between 70 and 90 years, and hence its nickname, "little old lady's hernia". Early diagnosis and prompt surgical intervention are the keys to reduce the associated morbidity and mortality. Ultrasonography provides a quick and reliable tool for first-line physicians to identify this disease.

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PATIENTS AGED 80 AND MORE HOSPITALISED IN MEDICAL INTENSIVE CARE UNIT : A 10 MONTHS PROSPECTIVE STUDY

Cécile Kernaléguen (1), Gaëlle Mourissoux (2), Adrienne Reix (1), Olivier Guisset (2), Fabrice Camou (2), Claude Gabinski (2)

1. Emergency department, Hôpital Saint-André, Bordeaux, France
2. Intensive care department, Hôpital Saint-André, Bordeaux, France

Corresponding author: cecile.kerna@gmail.com

Keywords: intensive care, elderly, outcome

Introduction. The aging population has increased the number of patients 80 years and older admitted to the intensive care unit (ICU). The characteristics of these patients and their outcome remains little known. The objective of this study is to analyze the characteristics of patients 80 years and older hospitalized in intensive care and study their outcome in terms of mortality and dependence at three months.

Materials and methods. All patients 80 years and older hospitalized in medical intensive care between 1 July 2011 and 25 April 2012 in Saint-André Hospital of Bordeaux University Hospital were included. Their characteristics have been recorded : where they live, their comorbidities assessed using the Charlson score and Mac Cabe, functional status assessed using the Katz score, their origin, their diagnosis admission, their severity of illness at admission according to IGS2 score, their length of stay, a decision to withhold or withdraw therapy. The outcome in terms of mortality and functional status was followed three months assessed using the Katz score.

Résultats. 101 patients 80 years and older were included in this period. They retained autonomy and lived at home for 91.5% of them. Acute respiratory failure was the diagnosis the most frequent. 26% of patients were intubated. A decision to withhold treatment was taken for 55% of these patients. 24% died in the ICU. At three months, 13% of survivors died. Autonomy decreased with an average score of Katz lower than before hospitalization (4.4 against 5.3).

Conclusion. These results confirm that elderly patients admitted to the ICU are autonomous and have few comorbidities reflecting a selection of patients before admission. Death occurs in the first days of hospitalization with 60% of survivors at three months. Those survivors still have a good functional status and the majority still live at home. These results encourage the admission of patients aged 80 and over in the ICU.

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EVALUATION OF ELDERLY PATIENTS MANIFESTING DECREASED GENERAL CONDITION IN COUNTY HOSPITAL EMERGENCY

Veli-pekka Harjola (1), Juho Mattila (1), Jukka Tolonen (2), Kirsti Tolonen (3)

1. Department of Medicine Division of Emergency, Helsinki University Central Hospital, Helsinki, Finland

2. Department of Medicine, Helsinki University Central Hospital, Helsinki, Finland

3. Geriatric rehabilitation, Oulunkylä Rehabilitation Hospital, Helsinki, Finland

Corresponding author: jutolonen@gmail.com

Keywords: Elderly patients, Emergency, Processes in ER

Background. Degreased general condition is common reason for elderly patients admitting emergency. There are numerous different diagnosis observed behind it.

Materials and methods. We have analyzed all elderly patients (> 65 years) from Jorvi hospital emergency database 2012. Elderly patients were divided in three age groups; 65-74 yrs, 75-84 yrs and 85- yrs. Only patients with ICPC2 code decreased general condition were taken for furtheranalyses. We used SPSS for statistical analysis. Lentgh of stay (LOS) was compared between age groups by Student T-test. The point of statistical significance was set at p<0.05.

Results. During 2012 1289 elderly patients with decreased general condition made 1758 visits in Jorvi hospital emergency. Visits were observed constantly in different weekdays. Three patients deceased in ER. One (80 yrs) was due to bacterial infection, one (78 yrs) due to malignant pleural disease and the third one (101 yrs) was not diagnosed specifically in ER. Most of the elderly with decreased general condition were in age group 75-84 years. The most common diagnosis made in ER in this patient population were unspecified decreased general condition (n=281), bacterial pneumonia (n=103), pye-lonephritis (n=95), cystitis (n=78), vertigo (n=62) and gastroenteritis (n=41). Critically ill patients were also diagnosed, unspecified bacteraemia (n=33), sepsis (n=3), acute myocardial infarction (n=15), ventricular fibrillation (n=3), ventricular tachycardia (n=2), pulmonary embolism (n=1) and intracranial haemorrhage (n=5). Discharge place from ER were different in age groups. Most of the patients in age group 65-74 were admitted to the hospital ward or discharged to home. The older the patient the greater amount was discharged to primary care ward. In age group 85- most of the patients were discharged to primary care ward. Older patients stayed in ER significantly longer than younger ones (Figure).

Discussion and conclusions. Decreased general condition was also in Jorvi hospital emergency co-mon reason for admission. Beside common non-critical diagnosis patients may suffer from acute life threatening disease. Only less than quarter of the oldest patients (85- yrs) was able to discharge to home from ER. The older the patient the longer was ER visit, which should be explored more specifically. Partly this may be due to different discharge pattern for the oldest age group.

We conclude that decreased general condition in elderly patient should be taken seriously by ER staff, and life threatening situations should also be taken in to account.

Figure.

Length of stay (LOS) in ER in different age groups. Note the statistical significance between groups(65-74=1, 75-84=2, 85-=3

Age group	1	2	3
LOS(hours,)	8.5	9.7	11.4
Group comparison 1-2	p=0.11		
	2-3 p<0.001		
	1-3 p<0.001		

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GERIATRIC EMERGENCY MEDICINE: PARTICULARITIES OF THE THE PRESENTATION AND ADMISSION RATE IN A ROMANIAN EMERGENCY DEPARTMENT

Diana Cimpoesu (1), Constantin Andrei (2), Andrei Hancu (2), Ovidiu Popa (1)

1. Emergency Medicine, UMF "Gr.T.Popa", Iasi, Romania

2. Emergency Department, Clinical Emergency County Hospital "Sf.Spiridon", Iasi, Romania

Corresponding author: dcimpoesu@yahoo.com

Keywords: geriatrics, emergency department, hospital admission

Background Geriatric medicine is mainly concerned with people over the age of 65, although many 'geriatric' patients are much older. The clinical problems and needs of older patients are often different from those of the younger patients. Many old patients are admitted with acute or sub-acute medical illness, which often presents in non-specific manner, and may be accompanied by cognitive or functional deterioration. In Emergency Department (ED) it could be seen that many older patients have multiple co-morbidities, polypharmacy and complex social care needs, Romania being a country with a reduced number of nursing homes, especially in the rural areas.

Objectives: To evaluate the frequency of geriatric patients presented in ED, to assess the profile of the old patients and the hospital admission rate from ED for this category.

Method: retrospective study performed in the ED of Emergency Hospital Sf. Spiridon (1150 beds) during 2012 including the patients above 65 years and a subgroup above 80 years. Statistic analysis of the data was performed.

Results: the 14 568 patients above 65 years presented in the ED during 2012 represented 25,65% of the total number of patients presented in the ED. Of them, 26,37% were above 80 years. The average age was 73,84 +/- 5.96, and the extremes were 65 and 98 years. By gender, 57.77% were females aged between 65 and 79 years and 58,94% aged above 80 years. Hospital admission percentage was 44,02% (65 and 79) and 50% above 80 years compared to 29 % general rate of admission in ED. Admissions in the medical clinics predominated (internal medicine, cardiology, gastroenterology, diabetes and nutritional diseases) - 69.76% as compared to surgical clinics -30, 24%. In patients over 65 years admitted to surgical clinics the highest percentage was shown by the patients admitted to orthopedic clinic: 45.5% and, respectively, 48,9% of those above 80 years. 19.29% of the geriatric patients were referred to geriatric hospital wards outside the neurology, neurosurgery, pulmonology, nephrology and psychiatry hospitals. 49 of the geriatric patients presented in the ED in critical condition had a negative evolution, passing away despite resuscitation. None of them had previously signed a DNR order. For 28,07% of the patients above 65 years the primary symptom at presentation in the ED was the pain.

Conclusions: The population over 65 years is a growing population in Iasi County, which resulted in a significant proportion of ED presentations in 2012. Hospital admission

rate exceeds 15-20% overall rate of admission of patients in ED, the age constituting an important criterion in the admission decision. Predominant hospitalizations were those for cardiac pathology and internal medicine, followed by those for traumatic pathology that required hospitalization in the orthopedic ward.

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Rez de Jardin poster area

AN UNUSUAL CASE OF NECROTISING FASCITIS PRESENTING TO THE EMERGENCY DEPARTMENT

Omar Ghazanfar (1), Nick Jenkins (1)

1. Emergency Department, Wexham Park Hospital, Slough, United Kingdom

Corresponding author: oghazanfar@nhs.net

Keywords: Sepsis, Metabolic acidosis, Intensive care admission

A 35 year old presented to the Emergency Department with a 24hr history of swelling over the sternum. He was systemically unwell with high temperature and rigors. The swelling was over the anterior aspect of the sternum and extending to the neck but not extending to the submental region. The swelling was warm to touch and erythematous. An initial provisional diagnosis of thyroiditis was made with a differential of cellulitis/abscess. A nasoendoscopy done by the ENT registrar showed no cord involvement.

A CT chest was performed which showed an area of collection anterior to the sternum with subcutaneous air. Blood test showed gross neutrophil leukocytosis and broad spectrum antibiotics were started.

The patient continued to deteriorate and a blood gas showed a persistent metabolic acidosis and a transfer to intensive care was organised. A plastic surgical review raised the suspicion of necrotising fasciitis and multiple surgical debridements were performed and the patient continued to be on the intensive care unit. Eventually after a 3 week stay in hospital the patient was discharged.

This was a very interesting case of necrotising fasciitis which was initially not diagnosed due to the unusual location and presentation

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Rez de Jardin poster area

URINARY TRACT INFECTIONS ADMITTED FROM HOSPITAL EMERGENCY DEPARTMENT. SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF PATIENTS AND ALTERNATIVES TO CONVENTIONAL HOSPITALIZATION.

Urko Aguirre Larracochea (1), Juana Maria Amigo Angulo (2), Maria Soledad Gallardo Rebollal (2),

Susana García Gutiérrez (1), Esther Pulido Herrero (2), Miguel Sanchez Fernandez (2)

1. Research Unit, Hospital Galdakao-Usansolo, Galdakao, Spain
2. Emergency department, Hospital Galdakao-Usansolo, Galdakao, Spain

Corresponding

MARIASOLEAD.GALLARDOREBOLLAL@osakidetza.net

author:

Keywords: Urinary infections Emergency Department, Alternatives to conventional hospitalization., Acute pyelonephritis Complications

INTRODUCTION.

The upper urinary tract infection or pyelonephritis is one of the most common infectious processes treated in emergency departments. The evolution is generally favorable but can sometimes involve significant malaise and severe symptoms that is poorly controlled with oral treatment and require intravenous therapy. There are risk of adverse outcomes for local complications requiring urologic intervention, severe sepsis and even exitus. Urinary tract infections are the most common cause of bacteremia and septic shock in the elderly.

This condition requires, therefore, an appropriate diagnostic and therapeutic management to distinguish cases most at risk of poor outcomes that must enter and define who can continue treatment at home. The units of observation or short stay in emergency departments and hospital at home has proven to be an alternative to conventional hospitalization, provides good control of symptoms and resolution of infection with greater patient satisfaction and reduced costs.

OBJECTIVES.

Know the sociodemographic and clinical characteristics of the population attended in hospital emergency with acute pyelonephritis, analyze reasons for admission and criteria for diagnostic tests, explore factors that influence the evolution and find the type of candidates for alternatives to conventional hospitalization.

METHODOLOGY.

The design is an observational retrospective study of patients diagnosed with acute pyelonephritis and admitted to hospital emergency Galdakao-Usansolo during 2009. This work is a pilot study of a larger project funded by the Department of Health of the Basque Government. Variables were collected epidemiological, clinical and laboratory, radiological and treatment. The outcome variables are evolution and admission decision. Continuous variables were described as mean and standard deviation and categorical variables with absolute values and percentages. The association between variables was performed using t-test for continuous variables and chi-square or Fisher exact test for categorical variables. The level of significance was $p < 0.05$. The analysis was performed with SAS software.

RESULTS.

Of the 206 patients with pyelonephritis, 132 cases (63.77%) were admitted and the rest were discharged with or without previous observation in hospital emergency. Of those admitted 81 (61%) had risk factors for multiresistant pathogens. Were <65 years 92 (69.7%) and 92 women

(99.7%). Comorbidities had 49 (37.12%) and oral intolerance 28 (21.21%). ECO or CT were performed in 123 (93.18%). Had criteria for sepsis 75 (56.82%) and severe sepsis 5 (3.79%). Developed local complications 39 (31.71%) and one patient died. In the hospitalized group compared the results bad / good performance with varying epidemiological, clinical and laboratory no significant differences except PCR analytical parameter. The poor performance was more common in > 65 years and women. Analysis of total patients admitted higher, also showed no differences. The result was analyzed admission / discharge with epidemiological, clinical, laboratory and radiological tests and showed differences in age, oral intolerance, CRP, creatinine, urea and leukocytosis.

CONCLUSIONS.

There is great heterogeneity in the acute pyelonephritis care with a different criteria for hospital admission, diagnostic tests and treatment guidelines. The number of patients with poor outcome was small and not detected predictors of poor outcome. The admission decision is based on the patient's general condition, intolerance to oral feeding, age and impaired analytical but these factors are not related to poor outcome. There are alternatives to the conventional hospitalization after ruling out severe sepsis and local complications. We conclude that a large group acute pyelonephritis can be treated in short stay units and observation units to improve the general condition and symptoms and then follow oral treatment at home with care in ambulatory health care centers. Patients at risk of antibiotic resistance requiring intravenous treatment may be candidates for home hospitalization if patient consent and family support and after ruling out severe sepsis and local complications with radiological and laboratory diagnostic tests.

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THE HEPATOPROTECTIVE EFFECTS OF CARNOSINE IN EXPERIMENTAL SEPTIC SHOCK MODEL IN RATS

Sabiha Sahin (1), Serdar Oter (2), Emine Sutken (3), Dilek Burukoglu (4)

1. Pediatric Emergency Department, ESOGUMF, Eskisehir, Turkey
2. General Surgery Department, ESOGUMF, Eskisehir, Turkey
3. Biochemistry Department, ESOGUMF, Eskisehir, Turkey
4. Histological Department, Eskisehir Osmangazi University, Eskisehir, Turkey

Corresponding author: sabiha.sahin@mynet.com

Keywords: carnosine, septic shock, liver

Introduction: In order to examine the effect of carnosine on the liver function and histological findings in experimental septic shock model, 24 Sprague Dawley rats were used. Material and Methods: Rats were examined into 3 groups of 8 rats for each including control group, septic shock group and septic shock group treated with carnosine.

Femoral vein and artery catheterization was applied in all rats. Rats in control group underwent laparotomy and catheterization. The other two groups with septic shock underwent laparotomy, cecal ligation-perforation, catheterization and bladder cannulation. Rats in treatment group received intraperitoneal (IP) injection of 250 mg/kg carnosine at 60 min after cecal ligation-perforation. Rats were monitored for blood pressure, heart rate and fever to assess the postoperative septic responses and extensive fluid replacement was introduced. At the end of 24 hours, rats were sacrificed and liver samples were collected.

Results: As conclusion, statistically significant improvements were observed on liver functions, tissue and serum MDA levels and histological findings in group treated with carnosine compared to the other sepsis group.

Discussion: We concluded that carnosine may be effective on oxidative damage due to liver tissue perfusion defect in septic shock.

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Rez de Jardin poster area

ASSESSING THE IMPACT OF BEING OFFERED VOLUNTARY HIV TESTING AT THE NURSE TRIAGE STATION IN AN URBAN HOSPITAL EMERGENCY DEPARTMENT

Yvette Calderon (1), Ethan Cowan (1), Jason Leider (2), John Y. Rhee (1)

1. Emergency Medicine, Jacobi Medical Center, Bronx, United States
2. Internal Medicine, Jacobi Medical Center, Bronx, United States

Corresponding author: yvette.calderon@nbhn.net

Keywords: HIV, triage, prevention

BACKGROUND: In June 2010, the New York State governor signed into law mandating that all medical facilities offer HIV testing to patients that walk into the emergency department (ED) or a primary care facility with the intention of increasing HIV testing rates. In accordance with the law, EDs must now document all offers for HIV tests.

OBJECTIVES: To evaluate implementing the HIV testing offer at the nurse triage station (NTS) to be in compliance with the law, and to assess the Public Health Advocate (PHA)'s role in engaging patients to test for HIV.

METHODS: A cross-sectional study was conducted on a convenience sample of ER patients offered an HIV test at an urban hospital in the Bronx. Data were collected on demographic variables, ESI levels, chief complaints, nurse triage responses, administration of rapid oral HIV tests, Western Blot orders, and PHA re-engagement. Data on number of HIV tests ordered were compared to data before implementation of the offer at triage.

RESULTS: A total of 56,316 patients were offered testing and recorded at the NTS over a time period from October 1, 2011 to June 30, 2012. Out of all the patients offered an HIV test at triage, the average age was 42.7 ± 17.4 years old, less than half were male (46.2%; 26,018/56,316), and

5.2% (2,813/54,286) of patients had an ESI level of 1 or 2. PHAs were able to engage 8,454 patients during this time period. Over a quarter (27.9%; 2,360/8,454) initially refused testing at triage but when the PHA approached them for testing, they changed their minds and agreed to test. Acceptance rate to HIV testing at triage was 16.3% (8,864/54,300) compared to historical acceptance rates of 90% when PHAs directly recruited patients for HIV testing. There were 23 confirmed HIV positive patients. Median CD4 cell count was 500 and median viral load was 24,891. HIV testing numbers did not change after implementation of offering the HIV test at NTS (7,055 before NTS vs. 6,722 after NTS).

CONCLUSIONS: The findings suggest that offering HIV tests at NTS does not increase HIV testing rates. Having PHAs testing in the ED provides the opportunity to reach individuals who are otherwise not tested for HIV and educate patients on the importance of HIV testing.

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Rez de Jardin poster area

EVOLUTION AFTER HOSPITAL DISCHARGE OF THE ACUTE PYELONEPHRITIS ADMITTED FROM THE EMERGENCY DEPARTMENT IN HOSPITAL AT HOME AND CONVENTIONAL HOSPITALIZATION. HOSPITAL REVISITS AND RECURRENCE THE INFECTION.

Urko Aguirre Larracochea (1), Juana Maria Amigo Angulo (2), Maria Soledad Gallardo Rebollal (2), Susana García Gutiérrez (1), Esther Pulido Herrero (2), Miguel Sanchez Fernandez (2)

1. Research Unit, Hospital Galdakao-Usansolo, Galdakao, Spain

2. Emergency department, Hospital Galdakao-Usansolo, Galdakao, Spain

Corresponding

MARIA SOLEDAD.GALLARDO REBOLLAL@osakidetza.net

author:

Keywords: Acute pyelonephritis, Evolution after hospital discharge, Hospital at home

INTRODUCTION:

The acute pyelonephritis (AP) are one of the most common infectious processes treated in hospital emergency departments. Sometimes requires hospitalization due to the discomfort of the patient, the severity of symptoms, associated comorbidity or development of severe sepsis, urinary tract obstruction or local abscesses requiring surgery. Although there is a risk of poor outcome, even death, most patients recover favorably during hospitalization. After discharge may appear other complications such as hospital revisits and recurrence of infection.

OBJECTIVES:

An objective of our study is to describe the sociodemographic datas and comorbidity of patients with urinary tract infections admitted from emergency

department to conventional hospitalization or to hospital at home.

The main objective is know the hospital revisits and recurrence of infection within two weeks after hospital discharge and compare the evolution in the two healthcare modality.

METHODOLOGY:

The design is an observational prospective cohort multicenter study in 3 hospitals (Galdakao-Usansolo, Txagorritxu and Alto Deba) which are collected PNFA patients treated in emergency department of these centers for one year from March 2012 to March 2013. This study is part of a larger project funded by the Department of Health of the Basque Government.

Variables were collected epidemiological, clinical and laboratory, radiological and destination from ER. The outcome variable is the comorbidity PNFA patients treated in the ER.

Continuous variables were described as mean and standard deviation and categorical variables with absolute values and percentages. The association between variables was performed using t-test for continuous variables and chi-square or Fisher exact test for categorical variables. The level of significance was $p < 0.05$. The analysis was performed with SAS software.

RESULTS:

Of the total of 193 patients were <65 years 115 (66.29%) and women were 129 (66.84%). Were admitted to conventional hospitalization 91 patients and 102 in hospital at home. No associated chronic pathology 125 (64.77%). Developed local complications such as abscesses and urinary tract obstruction in 8 patients (4.26%), of these 8 (9.41%) in home hospitalization 20 (20.20%) in conventional hospitalization. No patients with severe sepsis or death.

After discharge returned to emergency department 28 patients (15.22%). The revisits were after hospital care 20 patients (20.20%), after home hospitalization 8 (9.41%).

The reasons for new emergency visits were fever and pain. Fever in 6 cases (21.43% of revisits), after home treatment HD 12.50% and 25% after hospitalization. Pain in 8 (29.63% of revisits) and renal complications in 1 case who was discharged from the hospital. Recurrence of infection was higher in those admitted to the hospital but was not significant: 8.24% in hospital at home and 11.22% and hospital care.

CONCLUSIONS:

In patients with urinary tract infections admitted to home hospitalization the clinical evolution is good and serious complications are rare. In our study no case developed sepsis or death and few cases with local complications requiring urologic intervention.

After discharge recurrence of infection and revisits were less frequent r in home care. The most common reasons for new emergency visits were pain and fever.

An optimization of the treatment for control of symptoms and adequate choice of antibiotics, contribute to reducing revisits.

Data from our study show that the admission criteria in hospital at home seem appropriate and is a safe healthcare modality.

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SOLUBLE CD25 IS INCREASED IN PATIENTS WITH SEPTIC ACUTE KIDNEY INJURY

So-young Lee (1), Sewon Oh (2)

1. Nephrology, Eulji University Hospital, Seoul, Korea, (South Republic of

2. nephrology, Eulji university hospital, Seoul, Korea, (South Republic of

Corresponding author: steve77@unitel.co.kr

Keywords: acute kidney injury, CD25, sepsis

Purpose :Sepsis has been shown to induce the expansion of suppressive CD25+CD4+ regulatory T cells (Tregs) and this paradoxical immune suppression has also been suggested to be closely associated with the development of sepsis induced organ dysfunction. The purpose of this study was to investigate the possible link between immune suppression and the development of septic AKI.

Methods: We prospectively enrolled patients older than 18 years with the diagnosis of sepsis with or without AKI and also patients with non-septic AKI from Jan 2010 to Dec 2011. AKI was diagnosed according to RIFLE criteria, and serum and urine were collected to measure NGAL, cytokines, and soluble CD25 (sCD25).

Results :Of 82 patients enrolled, 44, 18 and 20 patients were classified into septic AKI, sepsis-no AKI and non-septic AKI. There was no difference in baseline characteristics including age, sex, and the prevalence of chronic kidney disease among these groups. The severity of AKI was also not different between septic and non-septic AKI. Patients with septic or non-septic AKI had significantly higher APACHE II score and FeNa compared to patients with sepsis-no AKI. Serum levels of proinflammatory cytokine IL-6, IL-1 β , and serum and urine NGAL levels were significantly elevated in patients with septic AKI compared to those with sepsis-no AKI or non-septic AKI. Finally, the level of serum sCD25, the marker of suppressive Tregs, was significantly increased in patients with septic AKI (18.8 \pm 14.4 vs. 11.2 \pm 10.1 vs. 8.3 \pm 6.1 ng/ml, septic AKI vs. non-septic AKI vs. sepsis-no AKI, p<0.05), suggesting the possible association of paradoxical immune suppression and the development of septic AKI.

Conclusion :These results might suggest that immune suppression in sepsis is closely linked to the development of AKI and can also propose that sCD25 might be useful for a novel biomarker of septic AKI.

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Rez de Jardin poster area

HOW ACCURATE IS ED DIAGNOSIS OF "SEPSIS"?

Juliana Poh (1), Beiqi Xie (1)

1. Emergency Medicine, Singapore General Hospital, Singapore, Singapore

Corresponding author: poh.juliana@gmail.com

Keywords: Sepsis, Systemic Inflammatory Response Syndrome, antibiotics

Accurate diagnosis guides treatment and reduces length of admission. Emergency department doctors are pressured to clinch a diagnosis quickly. Are ED doctors using the term "sepsis" too loosely? What is the impact of over-diagnosing sepsis? Is there an outcome difference between young and old? A retrospective review of all patients seen in the ED, Singapore General Hospital, in February 2012 with the diagnosis of "sepsis", through electronic medical records was performed. Records were reviewed for demographics, diagnostic criteria of Systemic Inflammatory Response Syndrome, whether an infection was suspected, whether antibiotics were given in the ED, pre-existing illnesses and outcome of admission, and compared between young and old patients.

128 records were obtained; 61(34 female, 27 male) were less than 65 years old (mean49.9) and 67 (35 female, 32 male) were more than 65 years (mean 77.4). In the young group, 29(47.5%) did not fulfil SIRS criteria, similar to 32 (47.8%) in the older group. 36 in all (28%) met "sepsis" criteria. 18(62%) young patients with no SIRS had antibiotics. Of these, 8 (44%) had no SIRS, no suspected source, no organ dysfunction. All 8 had pre-existing illnesses. Of these 8, only 1 had final ward diagnosis of sepsis i.e. 7 patients had unnecessary antibiotics. In the older group, 24(75%) had no SIRS but had antibiotics. All but one had pre-existing illnesses; that patient was bedbound. Of these, 6 (25%) had neither suspected source nor organ dysfunction but had antibiotics. Of these 6, only 2 had final diagnosis of sepsis i.e. 4 had unnecessary antibiotics. The young group had 3 deaths (0.05% of all admissions in this group); all had pre-existing illnesses, were given antibiotics in ED and satisfied sepsis criteria. Mean time to death was 2 days. In the older group, 4 patients died (0.06%). All had pre-existing illnesses. 3 had suspected infection and were given antibiotics; they died of pneumonia, the fourth had carcinoma of the pancreas. He was diagnosed with "sepsis" but did not have an infective source. Mean time to death was 14 days.

"Sepsis" is used too loosely by ED doctors. Mislabeling occurs regardless of age. Antibiotics are given unnecessarily, adding to cost and risk of adverse reactions. Death rate of patients admitted with this label is low; all patients who died had pre-existing illnesses.

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Rez de Jardin poster area

CAN WE REDUCE USE OF THIRD-GENERATION CEPHALOSPORINS AND FLUOROQUINOLONES IN LOWER RESPIRATORY TRACT INFECTIONS IN THE EMERGENCY DEPARTMENT ?

Tao Xiang Lim (1), Emmanuel Montassier (2), Nicolas Goffinet (2), Philippe Le Conte (2), Eric Batard (2)

1. Emergency department, Hôpital de Challans, Challans, France
2. Emergency department, Centre Hospitalier Universitaire de Nantes, Nantes, France

Corresponding author: eric.batard@univ-nantes.fr

Keywords: cephalosporins, fluoroquinolones, lower respiratory tract infections

Objective : To assess the frequency of prescription of 3rd generation cephalosporins (3GC) and fluoroquinolones in lower respiratory tract infections treated in the Emergency Department, and the avoidable part of these prescriptions.
Methods : Retrospective series of 88 adult cases of community-acquired pneumonia and acute exacerbation of COPD treated in the Emergency Department of Nantes University Hospital in January 2010. Compliance with national guidelines were assessed. Furthermore, prescriptions that complied with guidelines were deemed justified if at least one criterium was present : allergy or intolerance to penicillins, failure of penicillin, penicillin therapy in the previous month, suspected urinary tract infection, admission in ICU, and only for quinolones, suspected legionellosis. Avoidable prescriptions included prescriptions that did not comply with national guidelines and prescriptions that complied with guidelines but were not justified. Avoidable prescriptions of 3GC and fluoroquinolones may be replaced by amoxicillin/clavulanate. Proportions are showed with 95% CI.
Results : Median (IQR) age was 79 (65-84) years. Diagnoses were pneumonia (n=72) and acute exacerbation of COPD (n=16). Thirty-two (36% [27%-47%]) and 10 patients (11% [6%-20%]) were treated respectively by 3GC and fluoroquinolone. The majority of prescriptions of fluoroquinolones (86% [47%-99%]) and 3GCs (93% [77%-99%]) complied with national guidelines. However, 52% [34%-69%] of 3GC prescriptions and 57% [25%-84%] of quinolone prescriptions were avoidable.
Conclusion : Third-generation cephalosporins and fluoroquinolones are frequently prescribed for lower respiratory tract infections in the ED. Half of these prescriptions may be avoided.

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ANTIBIOTICS FOR MRSA SKIN AND SOFT TISSUE INFECTIONS: THE CHALLENGE OF OUTPATIENT THERAPY

Dahlia Eid, Md (1), Getaw Worku Hassen, Md,phd (1), Hossein Kalantari, Md,mph (1), Omer Nazeer, Md (1), Amy Pate, Md (1)

1. Emergency Department, Metropolitan Hospital, New York, United States

Corresponding author: contactdahlia@hotmail.com

Keywords: MRSA, antibiotics, outpatient therapy

Objectives: Methicillin-resistant Staphylococcus aureus (MRSA) infections are becoming increasingly prevalent in both community and hospital settings. Certain strains are notorious for causing skin and soft tissue infections in patients with no established risk factors. In this article, we report our findings on the dynamic antibiotic resistance pattern of MRSA within our community.

Methods: We conducted a retrospective chart-review of 1,876 patients evaluated in the emergency department of a busy 363-bed urban community hospital from 2003-2012. Data regarding culture isolates and associated antimicrobial resistance, antibiotic treatment (given within seven days of specimen collection, site of specimen collection, diabetic status, age, race, and gender were collected and analyzed.

Results: A total of 2,193 isolates were identified. In some cases, a single specimen yielded polymicrobial growth. Staphylococcus aureus represented 996 isolates; 463 were methicillin-susceptible (46.5%) and 533 (53.5%) were methicillin-resistant. 60 patients with MRSA (11.3%) had a diagnosis of diabetes mellitus at the time of specimen collection. Treatment most often consisted of trimethoprim/sulfamethoxazole (TMP/SMX), cephalexin, and clindamycin, prescribed either singly or in combination. Anti-microbial resistance analysis indicated that MRSA became increasingly resistant to the aforementioned antibiotics over time: 10% and 6% in 2012 vs. 3.5% and 3.4% in 2007 for clindamycin and TMP/SMX, respectively. MRSA appeared to be highly resistant (100%-91.4%) to cephalexin during 2004-2007, though the antibiotic was removed from routine susceptibility analysis in 2008.

Conclusion: MRSA is a particularly virulent, rapidly adaptive pathogen that is becoming increasingly difficult to combat with existing antibiotic formulations. Care must be taken to ensure appropriate treatment and follow-up of patients with known MRSA infections.

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Rez de Jardin poster area

EVALUATION OF THE MANAGEMENT OF SEPSIS IN EMERGENCY DEPARTMENT. RETROSPECTIVE STUDY ON 150 PATIENTS ADMITTED IN 2011.

Mélanie Pierre (1), Lucie Teyssier (1), Frédéric Chapalain (2), Joséphine Cagnon-chapalain (3), Nicolas Paris (2), Jacques Asdrubal (2), Marc Freysz (4)

1. Emergency department, Hôpital Les Chanoux, MACON, France
2. Emergency department, Hôpital les Chanoux, MACON, France
3. Infectious Diseases Unit, Hôpital les Chanoux, MACON, France
4. Emergency department, Hôpital le Bocage, DIJON, France

Corresponding author: melaniepierre1@hotmail.com

Keywords: sepsis, management, protocol

Introduction : The objective of this study is to evaluate the quality of care for sepsis in the Emergency Department and

confront the practical recommendations of the "Surviving Sepsis Campaign" for early identification and therapeutic care quality sepsis.

Materials and Methods : This is a single-center retrospective study from January 1 to December 31, 2011 in Emergency Department including 150 adults with sepsis at admission as currently defined. Different parameters are evaluated to determine the predictors of mortality.

Results : The mean age of patients studied was 74 years. The average time medical care is 53 minutes, the average residence time in the Emergency Department is more than 4 hours. Among the criteria that define a Systemic Inflammatory Response Syndrome : temperature, blood pressure and heart rate were documented in 98% of cases. In contrast, the respiratory rate is measured only in 29% of cases. The proportion of severe sepsis on admission to the Emergency Department is 76%. Venous lactate are present in 47% of cases, but not measured in 29% of patients died. Procalcitonin is only required in 31% of cases. Vascular filling is practiced in 77% of patients, but only 38% received more than 1 liter volume. Blood cultures, urinalysis, urinary soluble antigens are performed respectively in 91%, 63% and 6% of cases. Antibiotic treatment is initiated in the Emergency Department for 54% of patients. The death rate at 90 days was 25%.

Discussion : The results show a time management too long. This period may be related to the difficulty of identifying the early signs of sepsis with gravity. Lactates, organic reflection of a trend towards severe sepsis, are measured when there are already signs of hemodynamic failure. Antibiotics are too rarely initiated within three hours.

Conclusion : The "Surviving Sepsis Campaign" has laid the foundation for optimizing the management of sepsis. The assessment practices highlighted areas for improvement and allowed the realization of a protocol of care that will be reassessed.

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HEPATITIS B, HEPATITIS C AND HIV PREVELANCE IN CRITICALLY ILL EMERGENCY DEPARTMENT PATIENTS IN ISTANBUL, TURKEY

Tuba Cimilli Ozturk (1), Ozlem Guneyssel (2), Adem Tali (2), Ezgi Yildirim (2)

1. *Emergency Medicine, Istanbul Fatih Sultan Mehmet Education and Research Hospital, Istanbul, Turkey*

2. *Emergency Medicine, Umraniye Education and Research Hospital, Istanbul, Turkey*

Corresponding author: tcimilliozturk@gmail.com

Keywords: Hepatitis, HIV, emergency department

Introduction: Health care workers especially the emergency medicine staff are working at risk of blood-borne infections during their daily practice. The risk of transmission is higher when dealing with critically ill patients in resuscitation room. Because it is generally hard to obtain a true history

from these group of patients and multiple invasive procedures are applied. The aim of this study is to obtain the prevalence of Hepatitis B (HBV), Hepatitis C, and Human Immunodeficiency Virus (HIV), in critically ill red-coded emergency department patients in a tertiary hospital in Istanbul, Turkey.

Methods: The study was carried out prospectively between September 2012 and February 2013 in a tertiary inner city hospital emergency department in Istanbul, Turkey in which the number of emergency department visits per month is approximately 40.000. Data collection was stopped when reaching the number of 1000 patients. Red triage coded pediatric patients with trauma and adult patients with or without trauma were enrolled. Non-traumatic pediatric patients had been evaluated in a separate area, therefore not included in the study. Besides the demographical data, prior history of blood transfusion, homosexuality, intravenous drug abuse, the awareness of being carriers of the disease, and the presence of HBV immunization were assessed.

Results: The number of female and male patients were equal coincidentally. 50 (5%) patients were HBV positive, and 18 (1.8%) patients were HCV positive. Only 2 patients had both HBV and HCV. HIV were not recorded during the study period. 4 patients or their relatives were aware of their HCV positivity, and 18 patients or their relatives were aware of their HBV positivity. Total HBV immunization ratio is 7.4%. There were 41 (4.1%) trauma patients and 39 (3.9%) had external injury. 2 of the trauma patients with external injury were seropositive. 22.6% of the patients were unconscious or uncooperative. None of the patients were homosexual as they expressed. Prior blood transfusion history were present in 9.2% of the patients and among them 11 had HBV and 3 had HCV. Intravenous drug abuse incidence was 0.6%.

Conclusion: In this prospectively designed cross-sectional study we found totally %6.8 seropositive patients. There was not HIV positive patient in the study group. This result support the low HIV infection ratios among Turkish population when compared to other countries. Turkey population was of about 80 million by the year 2012, while the total number of reported HIV cases was 5,224. One of the important data obtained with this research, is that patients or their relatives were not aware of their seropositivity. And also the HBV immunization ratios were low. Because we did not test the Anti HBs antibody in the study, this ratio may not reflect the real number. The study group was specifically chosen because red coded emergency patients are the ones who has to be treated before getting an exact medical history. Because health care workers in the emergency department are much prone to transmissible infections universal precautions must strictly be applied by the staff.

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MANAGEMENT OF AN OUTBREAK OF SALMONELLA IN AN EMERGENCY

Maria Dolores Pascual Muñoz (1), Lucia Pardo Romera (1), María Dolores Gambin Ruíz (1), Daniela Rosillo Castro (2)

1. Emergency department, Hospital General Universitario Reina Sofía, Murcia, Spain

2. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: salmonella, gastroenteritis, protocol

OBJECTIVES: the purpose of the study is to determine the incidence and protocol for an outbreak of Salmonella typhoid in our emergency department after reporting a significant increase of cases of acute gastroenteritis food poisoning.

METHODOLOGY: Selected to study the days between 15 and 28 August 2012, as the 15th was an increase in the incidence of gastrointestinal pathology. All patients diagnosed with salmonellosis recounted having eaten in the same establishment. We performed a retrospective review of medical records of all patients seen these days with gastrointestinal symptoms. The variables were: age, sex, history of renal insufficiency, chief complaint, symptoms presented at admission, treatment received in the emergency, abnormal laboratory values, discharge destination and treatment prescribed at discharge.

RESULTS: During the outbreak period attended our emergency department in 95 patients, of whom 60.4% were female and 39.6% male, the number of queries 106, 10.37% consulted on several occasions. By age 17.9% were under 18 years, 65.1% over 40 years and 8.4% over the 70 years, resulting in an average age of 36.22 + / - 18.40 years. Of these 0.9% had a history of renal insufficiency. According to the complaint, 87.7% had abdominal pain, diarrhea 86.8%, 57.5% vomiting and fever by the same percentage, 7.5% 12.3% had nausea and other symptoms. In analytical underwent ER (hematology and biochemistry) in 98 patients (92.5%), of which 36.72% had leukocytosis, the 21.42% rise in creatinine and 9.1% of urea. Also collected stool to 30.5%. Emergency Treatment consisted administered in 0.9% saline (79%), glucose 5% (7.6%), paracetamol (47.6%), metamizole (22.9%), Dexketoprofen (17.1%), omeprazole (34.3%), metoclopramide hydrochloride (30.5%), Ranitidine (12.4%), hyoscine N-butylbromide (6.7%) and ciprofloxacin (13.3%). The destinations of the patient at discharge were: home (85.7%), emergency observation area (9.5%), Short Stay Unit (2.9%), internal medicine (1.9%), and the total percentage of 4.8% hospitalization. As prescribed treatment at home are: Hydration (70.5%), delivery sheet Acute Gastroenteritis recommendations (49%), paracetamol (70.5%), metamizole (6.3%), Dexketoprofen (5.3%), metoclopramide hydrochloride (46.3%), omeprazole (14.7%), hyoscine N-butylbromide (6.3%), ranitidine (5.3%), other (probiotics) (14.7%) and ciprofloxacin (17.9%).

CONCLUSIONS: There was a higher incidence in women and for age older than 40 years. The most frequent reasons for consultation are abdominal pain, diarrhea and vomiting. The disturbance incidence was more analytical leukocytosis with a stool collection of 30.5%. As for treatment in the ER

as saline administered was 0.9%, paracetamol, metoclopramide hydrochloride, omeprazole and beginning antibiotic treatment with ciprofloxacin (13.3%). The most common discharge destination was home, with a low level of hospitalization and 10.37% of patients who consulted several times. In the directions to there similarity of the emergency treatment including dietary recommendations sheet, continued administration of antibiotics and probiotics.

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Rez de Jardin poster area

OPTIMIZATION OF THE USE OF ANTIBIOTICS IN EMERGENCY DEPARTMENT TO THE REALITY EPIDEMIOLOGICAL PERTINI HOSPITAL OF ROME- PRELIMINARY RESULTS

Donatella Livoli (1), Antonio Simone (2), Alessandra Revello (2), Piergiorgio Bertucci (3), Shakib Ziyada (4), Maria Teresa Traversa (5), Francesco Rocco Pugliese Pugliese (4)

1. Pronto Soccorso, Ospedale Sandro Pertini, Roma, Italy

2. Pronto Soccorso, ospedale Sandro Pertini, Roma, Italy

3. Emergency department, Civic Hospital, Chivasso, Italy

4. Emergency department, Ospedale Sandro Pertini, Roma, Italy

5. Emergency department, ospedale Sandro Pertini, Roma, Italy

Corresponding author: donalivoli@yahoo.it

Keywords: Guidelines coded according to the epidemiological reality and a study of the rational empirical therapy, handbook of empirical anti-infective therapy for diseases most frequently encountered, The use Handbook led to uniform in the sense optimal care for the patient relative to chemotherapy empirical anti-infective and at the same time to an improvement of the cost / benefit ratio

INTRODUCTION. Guidelines coded according to the epidemiological reality and a study of the rational empirical therapy used to manage adequately the empirical anti-infective therapy from access to the emergency department.

OBJECTIVE. Objective of this work is to demonstrate how the administration of antibiotics in the first few hours of treatment in the ED, according to guidelines of empiric antimicrobial therapy, not only improves the health service, but leads to a reduction in spending on individual drugs, through the use of those with the best cost / benefit ratio.

MATERIALS AND METHODS. It was decided to draw up a handbook of empirical anti-infective therapy for diseases most frequently encountered and those that require a therapeutic intervention as early as possible, updated based on microbiological data and therefore relative to our specific epidemiological reality.

RESULTS. The use Handbook led to uniform in the sense optimal care for the patient relative to chemotherapy empirical anti-infective and at the same time to an improvement of the cost / benefit ratio, proving a tool ductile and malleable, able to adapt to changing conditions epidemiological studies.

CONCLUSIONS. There is a need to know the epidemiological reality in which we act and adapt. A constant update on the most appropriate empiric therapy also exposed to specialists in other fields helps to improve the care we provide to patients, as well as allowing us to grow professionally.

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OPTIMIZATION OF CLINICAL MANAGEMENT/WELFARE OF POTENTIALLY INFECTED PATIENT IN HOSPITAL EMERGENCY SANDRO PERTINI OF ROME

Donatella Livoli (1), Antonio Simone (2), Alessandra Revello (2), Piergiorgio Bertucci (3), Maria Teresa Proietti (4), Hashi Alasow (5), Francesco Rocco Pugliese Pugliese (6), Cinzia Cancrini (7)

1. Pronto Soccorso, Ospedale Sandro Pertini, Roma, Italy
2. Pronto Soccorso, ospedale Sandro Pertini, Roma, Italy
3. Emergency department, Civic Hospital, Chivasso, Italy
4. Pronto Soccorso, Ospedale Sandro Pertini, Roma, Italy
5. Emergency department, Ospedale Sandro Pertini, Roma, Italy
6. Emergency department, Ospedale Sandro Pertini, Roma, Italy
7. Emergency Department, Hospital Sandro Pertini, Rome, Italy

Corresponding author: donalivoli@yahoo.it

Keywords: Modality and times of isolation of the patient in hold of diagnostic definition and of the subsequent and possible displacement in the specialistic department of Infectious Illnesses., a standardization of the management of the patient infectious diseases already in the emergency department resulted in an improvement of care, Optimization of the patient's handling through the correct use of an empiric and critical therapy of antibiotics, both in terms of clinic outcome (considering the local epidemiologic reality and the relating antibiotic resistance), both in terms of econ

INTRODUCTION. The infectious illnesses represent a remarkable part of the several illnesses that are observed at the Emergency Department. it's vital to place the potentially contagious patient in an appropriate isolation, as well as to apply an appropriate and well-timed therapy.

THE OBJECTIVE OF THE WORK. The present work aims to demonstrate that a standardization of the management of the patient infectious diseases already in the emergency department resulted in an improvement of care, through some steps:

- 1) Definition of the standards of appropriateness for the displacement in OBI, where is provided a room of isolation.
- 2) Modality and times of isolation of the patient in hold of diagnostic definition and of the subsequent and possible displacement in the specialistic department of Infectious Illnesses.
- 3) Optimization of the patient's handling through the correct use of an empiric and critical therapy of antibiotics, both in terms of clinic outcome (considering the local epidemiologic reality and the relating antibiotic resistance), both in terms of economic aspect.

MATERIALS AND METHODS

- The draft of an "itinerary" aimed at the definition of standards related to the admittance in isolation at OBI, estimating the several modalities of transmission of the most common illnesses.

- An adequate staff training through several formative days and subsequent clinical audit about subjects related to infectivology (Infectivology connected with the Emergency Department).

- Institution of a 12h telephonic Help Desk related to the Infectious Illnesses, activated from the 1st June 2012.

RESULTS. Between June and December 2012 were registered 48 calls the help desk audit of the diagnostic and 'patient isolation:

- 11 suspected TB
- N. 7 suspected meningitis
- N. 6 infectious states in immunosuppressed
- N. 4 sepsis and septic shock

This has led to a better appropriateness not only of the path in isolation but also the care management. In addition, many calls were intended to verify the appropriateness of antibiotic therapy according to the Guidelines.

In the first part of 2013 there was a reduction of help-desk calls due to the greater autonomy acquired by ED staff.

CONCLUSIONS

In authors' opinion this project, based on iso resources, will notably improve the operators' autonomy in Emergency Department, in relation to the patient's handling. Although that, operators cannot substitute specialist (Infection expert), who will maintain his importance as second consultant.

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Rez de Jardin poster area

PATIENTS WITH SUSPECTED SEPSIS IN A GERMAN EMERGENCY DEPARTMENT: BASELINE CHARACTERISTICS, IDENTIFICATION AND RISK STRATIFICATION

Felicitas Geier (1), Steffen Popp (1), Yvonne Greve (1), Andreas Achterberg (1), Erika Glöckner (1), Renate Ziegler (2), Hans-jürgen Heppner (3), Harald Mang (4), Michael Christ (1)

1. Department of Emergency and Critical Care Medicine, City Hospital Nuremberg, Nuremberg, Germany
2. Institute for Microbiology and Hygiene, City Hospital Nuremberg, Nuremberg, Germany
3. Institute for Biomedicine of Aging, Friedrich-Alexander-University Nuremberg-Erlangen, Erlangen, Germany
4. Master degree programm Medical Process Management, Friedrich-Alexander-University Nuremberg-Erlangen, Erlangen, Germany

Corresponding author: felicitas.geier@klinikum-nuernberg.de

Keywords: sepsis, emergency department, risk stratification

Introduction: The mortality of patients with severe sepsis and septic shock (SSSS) is high. We examined baseline

characteristics, diagnostic and therapeutic processes, disposition patterns and in-hospital mortality of patients with suspected sepsis in a German emergency department (ED). We also analyzed the diagnostic and prognostic value of Emergency Severity Index (ESI), Modified Early Warning Score (MEWS) and Mortality in Emergency Department Sepsis (MEDS) Score.

Methods: This is a single-centre, prospective and observational study of 151 consecutive patients presenting to the ED of the Nuremberg Hospital with suspected sepsis from 1 August to 30 September 2012. We used the Receiver Operating Characteristic (ROC)-Curve in order to analyze the diagnostic validity of ESI, MEWS and MEDS score to identify patients with SSSS and the prognostic validity of ESI, MEWS and MEDS score to predict in-hospital mortality of patients with suspected sepsis.

Results: Mean age of patients with suspected sepsis was 68.3 ± 18 years, 54.3% were men, 45% achieved the adjusted final disease of SSSS, in-hospital mortality of patients with suspected sepsis was 14.6 % (of patients with SSSS 27.8%). 37.7% of the patients with suspected sepsis had an urinary tract infection ($n=57/151$), 33.8% a pneumonia ($n=51/151$), 8.6% an acute abdominal infection ($n=13/151$) and in 12.6% the focus of infection was not further specified or identifiable ($n=19/151$). In case of SSSS, the complete recommended Surviving Sepsis Campaign 3h-bundle was applied to 58.3% of patients (lactate, blood cultures, antibiotics and volume). 84.5% of patients with SSSS were treated with antimicrobial agents. 28.3% of patients with SSSS were admitted to an intensive or intermediate care unit, a vast majority of 71.7% was admitted to normal wards. For the identification of SSSS the AUC's (area under the curve) were 0.609, 0.641 and 0.778 for the ESI, MEWS and MEDS score respectively. For the prediction of in-hospital mortality the AUC's were 0.617, 0.642 and 0.871 for ESI, MEWS and MEDS score respectively.

Conclusion: The in-hospital mortality of patients presenting with SSSS to the ED is high. The Identification and risk stratification of patients with suspected sepsis is challenging. The MEDS Score could be a helpful tool to assess individual risk management and to guide disposition.

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IMPACT OF THE PERFORMANCE OF URINE DIPSTICK SCREENING TESTS TO DIAGNOSE URINARY TRACT INFECTIONS IN EMERGENCY ROOM

Hakim Slimani (1), Nicolas Lefebvre (2), Céline Renfer (1), Fadi Khalil (3), Maud Gandoin (1), Claire Kam (1), Pascal Bilbault (1)

1. Emergency Department, Hôpital de haute-pierre, Strasbourg, France

2. Department of Infectious Diseases, Nouvel Hôpital Civil, Strasbourg, France

3. Emergency Department, Nouvel Hôpital Civil, Strasbourg, France

Corresponding author: pascal.bilbault@chru-strasbourg.fr

Keywords: infectious diseases, evaluation, emergency room

Introduction: Urinary tract infections are a frequent reason for consultation in the Emergency Room (ER). The urine dipstick test (UDT) has a prominent place during diagnosis not only at bedside, but also because of its high negative predictive value (NPV) of 92 to 99% (1). The correct use of UDT would reduce the number of urine cultures by one third (2). The aim of our study was to evaluate the indications and interpretations of the UDT in our ER with an emphasis of its therapeutic aspects.

Methods: We performed a retrospective monocentric study over a period of six months (January 1 to June 30, 2012, 18,683 visits). We analyzed all prescribed emergency urine cultures (UC) and compared them with the results of the UDT. We then compared the opinion of an emergency physician and an infectious diseases specialist for treatment options taking into consideration the clinical and the biological presentations.

Results: The microbiology laboratory received and analyzed 478 urine samples. The sex ratio was 2.7 female. The mean age was 60 years [16-97]. UDT was carried out in 90% of examined cases and in 28.9% of cases we noticed the absence of fever or urinary symptoms. In 27% of analyzed cases UC were sterile. UC were considered as a contamination in 23% of cases and were positive in only 50% of cases. In addition, of the patients who had a negative UDT, 16% of them did in fact have a positive UC and of the patients who had a positive UDT, 5.5% of them had a negative UC. On the therapeutic level, 76 patients who had a positive UC were untreated (almost 1/3 of positive UC). More over further therapeutic errors were reported by our two experts mainly concerning the choice of the antibiotic therapy (64.5%) and the duration of the treatment (35.5%). Discordance therapeutic opinion between the two experts was very small (<1%).

Discussion: Our results demonstrate that UDT is use more than necessary in our ER (even in the absence of urinary symptoms) with wrong therapeutic implications. More worrying is the fact that 16% of UDT considered negative had led the performance of UC which turned out to be positive. This raises the question of the relevance and the reliability of our use of UDT. In our practice the NPV of UDT was only 83.5%, much lower than that described in the literature (1).

Conclusion: This study in our ER showed significant errors of interpretation of UDT at bedside and overprescription of UC. Better awareness of physicians and nurses in the proper use of UDT and UC is warranted. For that, the introduction of an automated reader of UDT could reduce these misinterpretations.

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Rez de Jardin poster area

DOG BITE, CAT BITE, EVEN CAT SCRATCH. WHAT SHOULD WE TAKE CARE ? ~ 5 CASES OF CAPNOCYTOPHAGA CANIMORSUS INFECTION ~

Takuro Hayashi, Yoshinori Matsuoka, Takateru Ihara, Daisuke Mizu, Takahiro Atsumi, Koichi Ariyoshi
Emergency department, Kobe City Medical Center General Hospital, Kobe, Japan

Corresponding author: takuroh@me.com

Keywords: capnocytophaga canimorsus, animal bite ,scratch, bacteremia

【Background】 Capnocytophaga canimorsus(C.canmorsus) may cause severe infection. It is gram-negative rod bacteria, and normal inhabitant of the oral cavity of dogs, cats and other animals. The overall gross fatality rate for C.canimorsus septicemia is reported about 30%. About 200 cases have been described until 2010. So emergency physician should know about C.canimorsus infection. Kobe City Medical Center General Hospital is core general hospital in Kobe City, with a population of 1,540,000. Annually 35,000 patients visit the emergency department of this hospital. In the emergency department, about 7,000 blood cultures are drawn in one year. And the percentage for positive result is about 9.2%. From 2007 to 2013, we have experienced 5 C.canimorsus septicemia cases.

【Purpose】 Analyzing 5 cases, to find characteristic tendency of severe cases. To alert healthcare provider especially about persons in emergency department about this infection through presentation.

【Cases】 In 5 patients with positive blood culture result of C.canimorsus, median age was 71 years (range 59 to 80), three patients were male (M/F ratio, 3:2). Two patients died from this infection. One of two died patients, 59 years old female (case1) had glucocorticoid treatment for systemic lupus erythematosus, but the latter patients of 74 years old male (case4) had no history of immune-compromised state. These two patients were brought to emergency department as decompensated shock, and they showed the findings of DIC and MOF at presentation. Of three survival patients, 70 years old male (case2) was treated as outpatient with perioral antibiotics. 74 years old male (case3) admitted to hospital, because of sepsis and DIC for 80days. Case3 patient was finally discharged from rehabilitation hospital on foot without major sequela. 80 year old female (case5) admitted hospital for 8days , and was discharged without sequela. The choice of antibiotics was meropenem (case1, case3, case4) and ampicillin and sulbactam (case2, case5).

<Animal contact and symptom> Of all 5 cases, two patients was bitten by companion dogs (case2,case4), and other two patients were scratched by cats (case1,case3). The last patient was bitten by cat. Symptoms were fever (80%), abdominal pain (60%), and diarrhea (40%). The duration between injury to symptoms is within 24 hours (case3) to 7 days. In fatal cases, the duration between injury to symptoms tend to be shorter than recovery cases.

<Susceptibility of microorganism> In 4 cases (except for case3) C.canimorsus were the resistant to aminoglycoside, but sensitive to Ampicillin, 3rd generation cephalosporin, and carbapenems.

【Discussion】 We have experienced 5 cases of C.canimorsus septicemia, and fatality rate was 40%. There is no significant difference between fatal cases and recovered cases from aspect of duration to symptoms, . One of the fatal cases, patient had no findings of immune-compromised state. We should consider the possibility of septicemia, and the risk of ingravescence even for non immune-compromised patients who has any symptom after dog bite, cat bite or cat scratch. And we should blow a whistle to general public, that one should see doctor, if the symptoms after animal bite or scratch appear. Limitation of this analysis is number of cases, we need data collection not only from one hospital.

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Rez de Jardin poster area

AN UNWANTED SOUVENIR FROM THE TROPICS

Erik Smits (1)

1. Emergency department, Canisius-Wilhelmina hospital, Nijmegen, Netherlands

Corresponding author: eriksmits@hotmail.com

Keywords: Infestation, Dermatobia Hominis, Scalp

An unwanted souvenir from the tropics

Drs. E.C. Smits

Emergency Medicine Resident

Canisius-Wilhelmina Ziekenhuis Nijmegen, the Netherlands

Introduction

Cutaneous infestation by the human botfly, *Dermatobia hominis*, is a relatively uncommon cause of an abscess-like lesion in the European emergency department(1). We present a case of a 47 year old male with a *Dermatobia hominis* infestation of the scalp.

Case report

A healthy 47 year old male presented to our ED, 2 months after visiting Suriname. In Suriname he had first noticed a few erythematous papules on his posterior scalp, which were not painful. In time the lesions enlarged and did not respond to antibiotics (flucoxacillin followed by ciprofloxacin). The lesions became confluent and several pores (5mm in diameter) developed, through which serous fluid drained (Figure 1). There were no signs of systemic illness. A few days later, patient returned to our ED because larvae were coming out of the holes (Figure 2). He had persistent sensation of movement within the lesion. The holes were covered with Vaseline to suffocate and force the exit of the larvae. This led to the evacuation of a few more larvae. The final 2 larvae were removed by surgical excision. The recovery was uneventful.

Discussion

Dermatobia hominis is commonly found in Mexico and throughout much of Latin America(1,2,3). The botfly

preferentially deposits its eggs on the underside of a mosquito. These eggs drop off the mosquito as it feeds on a human or animal. The eggs produce larvae that penetrate the skin and reside in the subcutaneous tissue for approximately 60 days(3,4). This causes a furunkel-like lesion with a central pore, which provides air for the larvae. In the natural lifecycle, the 18-25mm larva exits painlessly(2).

Important clinical clues to the diagnosis are recent travel to an endemic area, serosanguineous discharge from the central pore, pruritus and sensations of movement within the lesion(3,5).

Methods of removal include occluding the air supply with adhesive tape or Vaseline. This results in the larvae struggling to the surface, when removal can be completed by grasping it with a fine forceps(6). Other options for removal are application of a venom extractor or surgical excision(3). Incomplete extraction can lead to foreign body reaction or secondary bacterial infection(2). Although human infestation by *Dermatobia hominis* itself is usually not harmful, fatalities have been reported as a result of the larvae moving through the fontanelles of children(1).

Conclusion

Infestation with *Dermatobia hominis* should be included in the differential diagnosis of a new skin lesion in patients who have travelled to endemic areas.

(Images are removed for the sake of online submission)

Figure 1. Several pores in the lesion on the scalp.

Figure 2. One of the larvae that came out of the pores.

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Rez de Jardin poster area

BEWARE OF THE DOG

Sarah Darcis, Johan Gillebeert, Margot Vander Laenen, Willem Boer

Department of Anesthesiology, Intensive Care and Emergency Care, Ziekenhuis Oost-Limburg, Genk, Belgium

Corresponding author: johan.gillebeert@gmail.com

Keywords: Capnocytophaga canimorsus, sepsis, asplenic

Case report: A 61-year-old Caucasian female presented at the emergency department with high fever, rigors and abdominal pain. Her medical history showed hypothyroidism, ischemic heart disease and a Whipple procedure for a neuroendocrine tumor. At presentation, her vital signs were consistent with shock featuring a pulse of 120/min, BP 70/40 mmHg and a respiratory rate of 26/min. She had a temperature of 39,6°C. Clinically, we noted basal crackles on the right lung and a diffusely and remarkably painful abdomen with some resistance in the epigastrium on palpation. Initial blood results revealed an elevated CRP with signs of acute kidney injury and elevated lactate levels. CT scan showed some consolidation in both lower lungs and infiltration with fluid accumulation around liver and stomach. Lumbar puncture and urine-analysis were negative. Because of respiratory failure, she was intubated, ventilated and treatment with IV fluids, antibiotics and noradrenaline was initiated. Empirical antibiotic treatment consisted of amoxicillin-clavulanate and clarithromycin. During consequent ICU admission she had to be ventilated for more than 10 days and was treated with high dose vasopressors. She generated several small necrotic skin lesions and hematomas on her extremities and received several platelet and plasma transfusions because of clotting disturbances and soft tissue bleeding. The antibiotic regimen was changed after 3 days to piperacillin-tazobactam and ciprofloxacin because of lack of improvement. After 4 days blood cultures demonstrated an infection with *Capnocytophaga canimorsus*. Retrospectively, it became clear that a concurrent splenectomy was performed with the Whipple procedure and that she had recently adopted a young pup from an animal shelter, which lived in her close proximity. After 17 days she was discharged to a general ward from where, after 14 days of rehabilitation, she was able to go home. Besides her healing skin lesions and symptoms of the polyneuropathy, she is in good health.

Discussion: *Capnocytophaga canimorsus* is a slow-growing, gram negative bacteria found in the oral flora of dogs and cats, first identified in 1976. Transmission is possible, not only through a bite or scratch but even after close animal contact [1]. The incubation time ranges from 1 to 10 days. Sepsis is the most frequent admission diagnosis but *C. canimorsus* can also cause DIC, meningitis, endocarditis and rare ocular infections in human hosts [2]. Besides fever and chills, infection often presents with abdominal pain and progressively aggravating respiratory insufficiency [3,4,5]. Risk factors for infection include asplenia and alcoholism, but it can occur in previously healthy persons [1]. Most patients are men above 50 years. The overall mortality rate is about 30% [2,3]. Asplenic patients are at higher risk for fatal sepsis with a 70% mortality rate [5]. First choice antibiotic for treatment is penicillin G but *C. canimorsus* is also susceptible to clindamycin, third generation cephalosporins and fluoroquinolones [1]. The causative wounds are often too small to notice and frequently retrospectively diagnosed [4,5]. This, together with the difficulty to culture this bacteria, makes it a challenging diagnosis.

Conclusion: When confronted with a patient in sepsis without a clear focus, especially in asplenic patients, ask about pets. Mainly dog owners should beware. Every little wound or scratch should be well cleaned and a low threshold for prophylactic antibiotics should be exercised. Patients after splenectomy and their relations should be made aware of the risks and the need for vaccination.

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Rez de Jardin poster area

ERYTHEMA NODOSUM

Shakib Ziyada (1), Raffaele Schirripa (1), Roberto Satira (1), Alessandra Revello (1), Valentina Valeriano (1), Nur Hashi Alasow (1), Caludia Cicchini (1), Muhammad Salim (1), Francesco Rocco Pugliese (1)

1. Emergency department, Hospital Sandro Pertini, Roma, Italy

Corresponding author: shakibz@hotmail.it

Keywords: infectious diseases, Erythema Nodosum, septal panniculitis

Introduction:

Erythema nodosum is a specific form of panniculitis. The process is a cutaneous reaction that may be associated with a wide variety of disorders.

Including infections, sarcoidosis, rheumatologic diseases, inflammatory bowel diseases, medications, autoimmune disorders, pregnancy, malignancies and TB.

Erythema nodosum is characterized by the sudden onset of symmetrical tender, red or violet palpable, subcutaneous nodules usually located on the lower limbs, often the lesions are bilaterally distributed. The lesions show spontaneous regression, without ulceration, scarring, or atrophy. Diagnosis is by clinical evaluation, look for underlying cause, reserve skin biopsy for difficult diagnostic cases.

Treatment should be directed to the underlying associated condition, if identified. Usually nodules of erythema nodosum regress spontaneously in 3 to 4 weeks. More severe cases need about 6 weeks. Relapses are not exceptional, and they are more common in patients with idiopathic erythema nodosum and erythema nodosum

associated with non streptococcal or streptococcal upper respiratory tract infections, complications are uncommon. Bed rest is often a sufficient treatment. Aspirin, nonsteroidal antiinflammatory drugs, potassium iodide may be helpful drugs to enhance analgesia and resolution. Systemic corticosteroids are rarely indicated in erythema nodosum and before these drugs are administered an underlying infection should be ruled out.

Case Reports:

Case N. 1

A 45-year-old woman was admitted to our emergency department (ED) with a 4-days history of generalized muscle weakness, arthralgia and painful erythematous nodules on the lower extremities. One week before the onset of symptoms, she had fever and sore throat resolved with three days of treatment with antibiotics. Her only medical problem is microcytic anemia treated with oral iron therapy.

On physical examination, she appeared weak with pain in her legs, and had a temperature of 98.2°F (36.8°C), blood pressure of 120/70 mm Hg, and a regular pulse of 70 beats/min. The chest, cardiovascular, abdominal neurologic examination are all normal. Erythematous nodules on the lower extremities (see Figure 1 and 2).

Laboratory investigations reveal a hemoglobin concentration of 8.7g/dL a white blood cell (WBC) count of $5.72 \times 10^3/\mu\text{L}$, with 50% neutrophils and a platelet count of $319 \times 10^3/\mu\text{L}$. HBsAg, HCV, TB Gold, ANA, ANCA-C, ACE, Tumor Markers were negative, Urinalysis was negative for infection. Antistreptolysin O titer 225 U.A. (Normal Range 0-200), ESR 85 mm/h (Normal Range 0-14), CRP 4.7 mg/dl (Normal Range 0.00-0.50), and pharyngeal culture was positive for Streptococcus Group G.

Case N. 2

A 45-year-old woman was to the emergency department (ED) with a 5-days history of generalized painful erythematous nodules on the lower extremities, one week before the onset of symptoms, she had dysuria for a few day followed by fever, nausea and low back pain, treated by her family doctor with Augmentin (amoxicillin and clavulanic acid) without results. Also in this case report, we performed the same laboratory investigations made in case n.1: white blood count was slightly increased, the erythrocyte sedimentation rate was very high, and the urine culture was positive for Escherichia coli resistant to Augmentin (amoxicillin and clavulanic acid).

Discussion:

In both patients the diagnosis was confirmed by clinical evaluation and laboratory tests without skin biopsy. It was Erythema nodosum, due to Streptococcus Group G infection in case N.1 and Urinary Tract Infections (UTI) due to Escherichia coli infection in case N. 2. They were treated with nonsteroidal antiinflammatory drugs, antibiotics and erythematous nodules were regressed in few weeks.

Self-critical:

The current economic scenario, suggest us to be more careful using time and public resources. Our observations in patients Erythema nodosum doesn't need always the wide blood tests we made in the two cases analyzed before. It could be enough to make a good anamnesis in order to

identify the specific set of analysis actually needed, avoiding to spend a lot of resources.

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IMPORTED DISEASE AT THE EMERGENCY DEPARTMENT

Jo Van Kerkhoven (1), Peter Vanbrabant (2)

1. Emergency department, UZ Leuven, Leuven, Belgium
2. Algemeen inwendige geneeskunde, Militair Hospitaal Konigin Astrid, Neder-over-Heembeek, Belgium

Corresponding author: jo_van_kerkhoven@hotmail.com

Keywords: Imported disease, Fever, Travel related

Background

Emergency physicians don't always consider imported disease in patients presenting with fever in the emergency department (ED).

Objective

To determine the incidence of imported disease in the ED. To determine the cause of imported disease, epidemiological characteristics and clinical findings.

Patients and methods

Over a period of 19 months we prospectively identified all patients attending the ED with fever contracted during (or within three months after) travelling abroad. We abstracted epidemiological aspects, clinical information and diagnosis.

Results

54 patients were included in this study, representing 0,063% of all ED visits during the study period. 26 patients presented with a systemic febrile disease: malaria (n=7), dengue fever (n=3), typhoid fever (n=4) and bartonella disease (n=1); the others (n=11) suffered from undefined febrile diseases. Acute diarrheal disease was recorded in 14 patients. A bacterial and parasitic cause was confirmed in respectively 3 and 1 patients. A bacterial, parasitic and viral cause was assumed in respectively 2, 3 and 2 patients. In the remaining patients (n=3) the cause of enteritis was undefined. Respiratory diseases were diagnosed in 6 of the patients, with pneumonia as the most frequent diagnosis. Dermatological, cardiovascular, neurological and other disease were rare.

Only a minority of patients (4%) presented with fever as the sole complaint. Most frequently associated symptoms were digestive (50%) and respiratory (33%) complaints, headache (43%) and myalgia (28%). Clinical examination revealed hepatosplenomegaly (26%) and diffuse rash (20%) as most frequent clinical signs.

The patient characteristics showed that 83% were traditional travelers; the others were expatriates or patients visiting friends or family in their motherland.

The majority of patients (61%) were discharged the same day. The remaining patients (39%) were admitted for further observation, examination and/or treatment. During this hospitalisation, one person died from a fulminant malaria infection.

Conclusion:

Although imported disease is rare in the ED, its recognition is mandatory to allow adequate and early treatment of some potentially life-threatening diseases.

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Rez de Jardin poster area

CANDIDA ALBICANS LUNG ABSCESS IN CHRONIC HCV PATIENT

Shakib Ziyada (1), Moshe Mishaeli (2), Raffaele Schirripa (1), Roberto Satira (1), Alessandra Revello (1), Barbara Corrias (1), Muhammad Salim (1), Valentina Valeriano (1), Maddalena Zippi (3)

1. Emergency department, Hospital Sandro Pertini, Roma, Italy
2. Internal medicine department, Meir Medical Center, Kfar Saba, Israel
3. Internal medicine department, Hospital Sandro Pertini, Roma, Italy

Corresponding author: shakibz@hotmail.it

Keywords: lung abscess, Candida Albicans, anidulafungin therapy

Introduction

The most common cause of candidiasis is the Candida Albicans. Usually it affects the oral tissue, skin or the gastrointestinal tract but in immunocompromised patients it can developed into a systemic disease.

Pulmonary candidiasis is a rare condition in healthy hosts but there are several reports in the literature, some of them related to immunosuppressive treatments.

Case report

A 36-year-old man presents to the emergency department with 2 weeks history of fever (38 °C-39°C), chest pain, cough and hemoptysis, 10 days of antibiotic treatment at home with negative results.

His medical history is Chronic Hepatitis C Infection, he denies any prior surgeries, and he is a heavy smoker, drink alcohol and a history of illicit drugs used.

On physical examination, temperature is 38.5°C, pulse is regular with a rate 90 beats/ min. Blood pressure is 130/80, respiratory rate is 16 breaths/ min. On lung auscultation crackles on the right base was present.

On admission, chest radiograph revealed a lung abscess in right lower lobe (Panel A), confirmed with Computed tomography of the chest (Panel B)

Laboratory investigations reveal a white blood cell (WBC) count of $15,72 \times 10^3/\mu\text{L}$, with 70% neutrophils, Erythrocyte sedimentation rate (ESR) and Protein C-reactive were increased.

Sputum examination for acid-fast bacilli (AFB), Tuberculin skin testing and TB- gold were negative.

Due to persistent respiratory symptoms a bronchoscopy was performed with results no evidence of tumoral cells and BK presence, but suspicious of candida albicans infection that was confirmed by three consecutive positive respiratory sputum cultures.

The patient was treated with a systemic antifungal agent with rapid clinical improvement.

Two weeks later the patient was discharged with complete biochemical, clinical and radiological recovery (Panel C).

Discussion

Candida pneumonia is a rare disease, associated with high mortality rates. In very complicated conditions the infection is progressing to lung abscess.

It may be a result of hematogenous dissemination or, less common, due to oropharyngeal aspiration.

In most of the reported cases in the literature the infection was related to active immunosuppression conditions such as diabetic (1), post surgery (2,3) or post transplantations (4,5,6) and during chemotherapy treatments (7).

In all of the cases the diagnosis was based on sputum samples and patients needed long term hospitalization and treatments.

Here we present a rare case of a fulminant candida-related lung pneumonia associate with lung abscess in a chronic HCV patient with no evidence of active immunosuppression condition. The treatment was efficient despite the abscess and the course of recovery was fast and effective.

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Rez de Jardin poster area

MORTALITY OF INFECTIOUS ORIGIN IN THE EMERGENCY SERVICE

Ghizlane Anoun (1), Mariem Ezzaoui Rahali (1), Khalid Khaleq (1), Mohammed Moussaoui (1), Morad Nafaa (1)

1. Emergency departement, University Hospital Ibn Rochd Casablanca, Casablanca, Morocco

Corresponding author: Rimovitch@hotmail.fr

Keywords: mortality, infection, emergency service

INTRODUCTION: Infection is a common reason for hospitalization in emergencies. Mortality which is allied remains considerable especially in intensive care unit depends on factors related to the patient and the quality of care and services available.

PURPOSE OF WORK: Get the epidemiological characteristics for a critical analysis of mortality infection late to improve the management of patients admitted to intensive care emergencies.

MATERIALS AND METHODS: A retrospective descriptive study and analytical spread over 30 months, including patients who died adults with community-acquired or nosocomial infections in any service. The variables studied were epidemiological. The indices are calculated severity score APACH II, MEDS, CURB-65 score Maccabe and OSF.

RESULTS: 141 patients died during a period of 30 months. The mortality rate was 14.36%, often community-acquired infection in 90% of patients whose average age was 51.98 years, males accounted for 58.27%, and the main reasons for admission were febrile disorder awareness and febrile respiratory distress respectively 34.65% and 32.28% of

cases. 77.95% of patients had severe sepsis of respiratory origin in 35.44%, and neuromeningeal in 20.47% and 14.17% in gastrointestinal cases. The main causes of death were septic shock, multiple organ failure and ARDS in respectively 29.13%, 25.19% and 26% of cases. Only 10% of patients had died by nosocomial infection (11 cases with pneumonia, 2 cases with gastrointestinal infection and meningitis in a case). The average age was 45.64 years; the sex ratio was 10/4. Traumatic pathology was the main reason for hospitalization. The most frequent cause of death was multiple organ failure (35.71%), followed by 28.56% in ARDS and septic shock in 21.43%.

CONCLUSION: The prognosis of these diseases underscores the importance of improving health care delivery in accordance with international recommendations.

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AN INTERESTING CAUSE OF SEPSIS IN THE EMERGENCY DEPARTMENT.

Kirstine Coomer (1), Rebecca Whysall (2)

1. Emergency Department, Queens Medical Centre, Nottingham, United Kingdom

2. Medical Assessment Unit, Royal Derby Hospital, Nottingham, United Kingdom

Corresponding author: kcoomer@nhs.net

Keywords: Abdominal sepsis, VP shunt, E.Coli

A 85 year old male with a VP shunt in situ presented to the Emergency Department with confusion, pyrexia, haemodynamic instability and mild abdominal pain. CXR was clear and CT head showed no shunt complications. A urine dip was not achieved in the ED department and later came back negative on the ward. He was treated according to the sepsis bundle for urosepsis. Blood cultures grew E.Coli, and although the patient initially improved with antibiotics, he later dropped his GCS to 9 and seemed to be showing signs of further abdominal discomfort. Repeat CT head and this time CT abdomen showed perforation of the colon by his VP shunt. He was transferred for emergency surgery and made a full recovery.

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Rez de Jardin poster area

EPIGLOTTITIS, IS THIS STILL A PEDIATRIC DISEASE PROCESS?

Frederick Fiessler (1), Renee Riggs (2), Dave Salo (3), Alex Troncoso (1)

1. Emergency department, Morristown Medical Center, Morristown, United States

2. Emergency department, RWJMS- UMDNJ, New Brunswick, United States

3. Emergency department, Morristown Medical Center, morristown, United States

Corresponding author: ffiesseler@yahoo.com

Keywords: epiglottitis, pediatrics, infection

Introduction: Epiglottitis is a rare disease with significant morbidity and mortality even when diagnosed expeditiously. It has been speculated that the incidence in the pediatric patient population is decreasing. **Objective:** To determine the incidence of pediatric epiglottitis presenting to a suburban Emergency Department. **Methods:** Retrospective cohort study utilizing an electronic patient database (Emars). Patient charts were extracted using the final diagnosis for epiglottitis over a thirteen year period. The enrolling hospital is a suburban teaching hospital/referral center that sees approximately 70,000 annual patient visits. Data was extracted between March 2000 - March 2013. All charts were manually reviewed for predetermined data points by study personnel. Patients were excluded if the diagnosis was determined not to be epiglottitis or data was incomplete. Pediatrics was considered anyone ≤ 18 years of age. Inflammatory markers included: WBC, ESR, and CRP, abnormality were reported if the number fell outside the predetermined age specific lab range. This study was approved by the IRB. **Results:** During the study period 16 patients had the final ED diagnosis of epiglottitis. Chart review determined that 15 (0.002%) of these patients had epiglottitis. One was excluded for a diagnosis other than epiglottitis. One hundred percent were admitted to the hospital. Male gender comprised 67% (N=10). Mean age was 44 years (95% CI 33.22 to 54.78). Thirteen percent (N=2) of patients fit criteria for pediatric (one 27 months old and the other 18 years of age). Diagnostic modality utilized was: 47% (N=7) CT, 53% (N=8) radiograph, 33% (N=5) fiber-optic laryngoscopy, and 1 had prior diagnosis. Inflammatory markers were documented in 73% (N=11) of patient, off which 93% (N=14) were abnormal. A WBC was documented in 11 patients, 10 of which were abnormal. The mean WBC count in those with epiglottitis was 18.9/nL. The one normal WBC was 11/nL. A CRP/ESR was reported in 4 patients, all of which were abnormal. **Conclusion:** Epiglottitis is predominantly a disease of adults.

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Rez de Jardin poster area

HERPES SIMPLEX HEPATITIS IN AN ADULT – INDICATION OF AN EMPIRIC TREATMENT IN EMERGENCY DEPARTMENT

Mihaela Mihalcea - Danciu (1), Bernard Ellero (1), Lucie Purgertova (1), Marie-Lyne Harlay (2), Francis Schneider (2), Pascal Bilbault (1)

1. Emergency Department, Hôpital Hautepierre, Strasbourg, France
2. Intensive Care Unit, Hôpital Hautepierre, Strasbourg, France

Corresponding author: mihalcea78@yahoo.com

Keywords: herpes hepatitis, HSV PCR, acyclovir

Introduction

Herpes simplex hepatitis is a rare cause of acute hepatitis in immunocompetent patients. The triad of fever, elevation of transaminases and presence of leucopenia is suggestive of herpes simplex hepatitis. Delayed diagnosis without antiviral therapy significantly contributes to the unfavorable outcome.

Case report

We describe a rare case of severe hepatitis in a 50-years-old immunocompetent male admitted in an emergency department, due to a reactivation of a herpes simplex infection with macrophage activation syndrome and severe coagulopathy and which had a favorable outcome due to early acyclovir therapy. On admission, physical examination showed an icteric patient with fever (38,4°C) . His initial laboratory studies showed a white blood count of 2300/mm³ and platelet of 44000/mm³. His alkaline phosphatase was 126 unit/liter, total bilirubin 34,4 μ mol//L, AST 4116 unit/liter, ALT 1377unit/liter. After 6 hours, his mental status deteriorated associated with acute renal failure (creatinine 500 μ mol/L , urea 28,7mmol/L) and macrophage activation syndrome. The patient received intravenous acyclovir 10mg/Kg and was quickly transferred to the Intensive Care Unit. PCR for HSV-1 and 2 both came back positive on 4th day of hospitalisation (1,46 x 10⁷ HSV geq/mL). The patient was in hospital for a month before making a complete recovery.

Conclusion Despite its relatively low occurrence rate, herpetic hepatitis must be evocated in immunocompetent patients with acute liver failure. The benefits of immediate acyclovir treatment should lead clinicians to consider this rare diagnosis in unexplained cases of hepatitis and to test rapidly HSV DNA levels by PCR in plasma.

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Rez de Jardin poster area

IDENTIFICATION OF THE SEPTIC PATIENT PRESENTING WITH DWINDLING - A COMPARISON BETWEEN CLINICAL JUDGEMENT AND A SCREENING TOOL

Ulrika Wallgren (1), Viktor Antonsson (1), Maaret Castrén (1), Lisa Kurland (1,2)

1. Karolinska Institutet Södersjukhuset, Stockholm, Sweden
2. Emergency Department, Södersjukhuset, Stockholm, Sweden

Corresponding author: ulrika.wallgren@karolinska.se

Keywords: Sepsis, Emergency Department, Dwindling

Introduction: Sepsis is a serious condition that can be difficult to identify, especially when it presents with unspecific symptoms such as dwindling.

Aim: Our primary aim was to compare the identification of sepsis using a sepsis screening tool as compared with clinical judgment in the Emergency Department (ED). Our

secondary aim was to investigate the time to administration of antibiotics and mortality among septic patients presenting with the chief complaint dwindling as compared with septic patients presenting with other chief complaints. **Materials and Methods:** Totally 120 patients presenting with dwindling and 587 patients with sepsis as a discharge diagnosis according to ICD-10 were included. The Robson prehospital severe sepsis screening tool was used to identify sepsis among patients presenting with dwindling. **Results:** The Robson tool had a higher sensitivity (66.7% vs. 28.3%, $p < 0.001$) but a lower specificity (78.3% vs. 100.0%, $p < 0.001$) as compared with clinical judgement. Septic patients presenting with dwindling had a higher mortality (OR=2.85, compensated for age: 95% CI: 1.51-5.38; $p < 0.001$) and a longer time to administration of broad spectrum antibiotics (median 05:39 vs. 04:03, $p < 0.001$) compared with the sepsis reference group. **Conclusions:** Using the Robson prehospital severe sepsis screening tool may increase sepsis identification in the ED. Septic patients presenting with unspecific presentations such as dwindling have a higher mortality and a longer time to antibiotic as compared with septic patients presenting with more specific chief complaints.

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Rez de Jardin poster area

PROFILE OF PATIENTS ADMITTED FOR INFLUENZA A VIRUS INFECTION

Iván Villar Mena (1), Javier Muñoz Bono (2), Victoria Olea Jimenez (2), Ana Cabrera Calandria (2), Esther Banderas Bravo (2), José Valero Roldan (1).

1. Emergency Department, Hospital Regional Carlos Haya, Málaga, Spain

2. Intensive Care Unit, Hospital Regional Carlos Haya, Málaga, Spain

Corresponding author: ivillarmena@hotmail.com

Keywords: influenza A virus, infection, profile

Methods: Retrospective study of all consecutive patients admitted in our ICU suffering Influenza A infection between October 2009 and January 2011. We recorded clinical and demographical data, complications, treatment, respiratory evolution, mortality and stay in the ICU. We expressed results in percentage, mean or median. T-test and Chi-square test were used in a SPSS program.

Results: We analyzed 20 patients admitted in the ICU, with age 37.47 ± 13.82 years. 80% were women. At admission, 60% of them had PCR positive, and they had APACHE II 15.75 ± 5.84 . Most of our patients were healthy (without chronic organ insufficiency or immunosuppression) however 30% had BMI > 30 . 30% were pregnant. Infection debuted as acute respiratory failure in 100% of cases (90% developed hypoxemia), involving SIRS in 20% of patients. After the admission, about half of patients developed septic shock and ARDS, but only 35% had acute renal failure, and 20% had elevated liver enzymes. 50% of patients had a

bacterial infection documented by positive cultures. 100% had antibiotics from the first day of admission to the unit, and 70% treated with corticosteroids. Received Oseltamivir for 8 (3, 14) days, with a mean delay of 5 ± 2.42 days. 75% of the patients needed $FiO_2 > 60\%$ (PaFi 90.94 ± 48.16). The mean PEEP was 10.19 ± 5.86 . 45% had muscle relaxants and 40% were in prone. Main complication of the mechanical ventilation was pneumothorax (25%). The patients needed mechanical ventilation 10.50 (0, 40) days, and 25% required tracheostomy. The stay was 12.5 (1, 53) days. Mortality was 30%. We compared the group of pregnant with other patients, and both groups were homogeneous, without significant differences in demographic data, complications or mortality (16.7% vs. 35.7%, $p = 0.63$). We have only observed that the presentation is more severe (SIRS) in the nonpregnant group (50% vs. 16.7%, $p = 0.005$).

Conclusion: The baseline characteristics, presentation, evolution and mortality of our patients are similar to those described by the Working Group A severe flu of SEMICYUC. There are no differences in pregnancy. So, the management in our ICU is right.

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Rez de Jardin poster area

LEFT VENTRICULAR MYOCARDIAL SYSTOLIC DYSFUNCTION DURING SEPSIS: POSSIBLE INCREMENTAL VALUE OF GLOBAL LONGITUDINAL STRAIN COMPARED TO TRADITIONAL EJECTION FRACTION

Elisa Guerrini (1), Aurelia Guzzo (1), Damiano Vignaroli (2), Eleonora De Villa (1), Vittorio Palmieri (3), Francesca Innocenti (1), Riccardo Pini (1)

1. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

2. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi Firenze, Firenze, Italy

3. Cardiology, A.O.R.N. G. Moscati, Avellino, Italy

Corresponding author: innocentif@AOU-careggi.toscana.it

Keywords: sepsis, global longitudinal strain, myocardial dysfunction

Background: Depressed left ventricular (LV) ejection fraction (EF) is found in up to 40% of the patients with severe sepsis or septic shock. To evaluate LV myocardial systolic dysfunction independently of loading conditions, it is possible to employ a special application of two-dimensional (2D) echocardiography, represented by strain rate evaluation. This technique assesses myocardial tissue velocity during systole. Aim of this study is to compare the prognostic value of myocardial systolic dysfunction evaluated with conventional LVEF and with the use of global longitudinal strain (GLS) in patients with severe sepsis or septic shock.

Methods: Patients affected by severe sepsis and septic shock consecutively admitted to a High Dependency Unit (HDU) from the Emergency Department (ED) between

October 2012 and March 2013 were prospectively enrolled. Anamnestic data and main clinical and laboratory parameters were obtained for each patient, in order to evaluate Sepsis-related Organ Failure Assessment (SOFA) score. One-month follow-up was performed in order to assess in- and out-of-hospital mortality.

An echocardiogram (ECHO) was performed within 24 hours (T1) and at 48 hours (T2) from the admission in the ED (T0), using Philips iE33 ultrasound machine. All the standard 2D measurements were recorded and LVEF calculated with the Simpson's rule. The longitudinal GLS was evaluated from LV apical views, with a commercially available system (Philips Q-LAB). Normal GLS was defined by the cut-point of 1 standard deviation of the mean GLS in 10 healthy subjects between 30 and 83 years of age (-15±3%, normal GLS defined as < -12%). Accordingly, the study population was divided in two groups: normal GLS, nGLS, with GLS < -12% and pathological GLS, pGLS, with GLS ≥ -12%.

Results: Study population included 18 patients (10 males, mean age of 70±14 years). Mean SOFA was 5.5±2.8 at T0, 5.3±2.9 at T1 and 4.5±2.6 at T2. Six patients (33%) developed septic shock, 8 (44%) required vasopressor support with norepinephrine. Mean LVEF was similar and was subnormal (<50%) in 44% at T1 (mean 53±13%) and in 21% at T2 (mean 59±14%, p=NS).

In contrast, at T1 12 subjects (75%) had a pGLS, while at T2 pGLS was found in 50%. Interestingly, LV EF was comparable between subjects with pGLS vs nGLS (49±10 % vs 57±14% p=NS) at T1 as well as at T2 (52±13 % in pGLS and 65±13% in nGLS, p=NS).

SOFA score was also not significantly different between subjects with pGLS vs nGLS at T1 (6.3±2.7 in pGLS and 3.7±3.3 in nGLS, p=NS) and at T2 (5.2±2.6 in pGLS and 3.2±2.5 in nGLS, p=NS).

Heart rate and mean arterial pressure (PAM) were similar in subjects with pGLS or nGLS (all p=ns). Vasopressor support with norepinephrine was used in a comparable proportion of patients at T1 (41.7% in pGLS vs 25% in nGLS, p=NS) and at T2 (14.3% in pGLS vs 14.3% in nGLS, p=NS).

The two groups had similar values of ultrasensitive TnI at T1 (2.0±4.8 µg/ml in pGLS and 0.2±0.2 µg/ml in nGLS, p=NS) and at T2 (1.1±2.0 µg/ml in pGLS and 0.1±0.2 µg/ml in nGLS, p=NS); lactate levels at T1 (3.0±2.3 mEq/L in pGLS and 1.6±1.3 mEq/L in nGLS, p=NS), while at T2 a higher level of lactate in the pGLS group was pointed out (2.2±0.7 mEq/L in pGLS and 1.0±0.3 mEq/L in nGLS, p=0.002). Finally N-terminal natriuretic peptide (NTproBNP) values were significantly different both measured at T1 (15466±10289 pg/ml in pGLS and 1862±2104 pg/ml in nGLS, p=0.002) and at T2 (11059±9660 pg/ml pGLS and 616±403 pg/ml nGLS, p=0.04).

At follow up, 4 patients died (22%). Those who died showed significantly more pathologic GLS at T2 (-7.0±2.8 vs -12.3±3.4 in survivors, p=0.03) while LVEF at T2 was similar between patients who died and those who survived (52±5 vs 61±15 p=ns); all those who died had abnormal GLS value, while only two of them showed reduced LVEF (< 50%).

Conclusions: In our preliminary report we found that longitudinal myocardial systolic dysfunction evaluated by GLS was more frequent than expected by LVEF in sepsis,

and was often present in patients who experienced untoward prognosis in the medium term.

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Rez de Jardin poster area

ACUTE MYOCARDIAL DYSFUNCTION IN SEVERE SEPSIS AND SEPTIC SHOCK IN THE ACUTE CARE SETTING OF THE HIGH DEPENDENCY UNIT

Elisa Guerrini (1), Simone Bianchi (1), Caterina Grifoni (1), Alessandro Becucci (1), Aurelia Guzzo (1), Damiano Vignaroli (2), Francesca Innocenti (1), Riccardo Pini (1)

1. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

2. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi Firenze, Firenze, Italy

Corresponding author: innocentif@AOU-careggi.toscana.it

Keywords: Acute Myocardial Dysfunction, Sepsis, Echocardiography

Purpose: Previous studies about myocardial involvement during sepsis included mechanically ventilated patients in the Intensive Care Unit. Aim of this study was to evaluate the prevalence of acute myocardial dysfunction (AMD) during severe sepsis and septic shock in patients admitted to a High-Dependency Unit (HDU). The diagnostic performance of known biomarkers in identifying heart involvement in these critically ill patients was also tested.

Materials and Methods: We retrospectively identified 127 septic patients without known cardiac disease, admitted to an Emergency Department HDU for severe sepsis/septic shock, who performed an echocardiogram within the first 48 hours. When images quality was adequate, we evaluated left ventricular (LV) and left atrial (LA) diameters. End-diastolic and end-systolic LV volumes (respectively EDV and ESV) were calculated according to the Simpson method. LV ejection fraction (LVEF) was calculated as ((EDV-ESV)/EDV) x100. In patients with bad acoustic window, the operator was asked to perform an eyeball LVEF evaluation. LV dysfunction was defined as an LVEF less than 55%; patients were divided in two groups according to the presence (D+) or absence (D-) of AMD.

Anamnestic data and main clinical and laboratory parameters were obtained for each patient, in order to evaluate Sepsis-related Organ Failure Assessment (SOFA) score. One-month follow-up was performed to assess mortality.

Results: Study population included 127 patients, 61 males and 66 females with a mean age of 73±14 years; 59 (46%) patients developed septic shock. At ED entrance mean SOFA was 6.3±3.0 and after 24 hours it was 5.7±2.8. Within 28 days 38 (30%) patients died, 11 during the first 48 hours. Patients who died were significantly older (80±10 vs 70±15 yrs, p<0.0001), with a worst organ damage both at ED entrance (T0-SOFA 7.3±3.2 vs 6.0±2.8, p=0.035) and after 24 hours (T1-SOFA 7.2±3.1 vs 5.2±2.2, p=0.001). At ED

entrance and after 24 hours, dead patients showed a lower systolic blood pressure (respectively 101 ± 27 vs 113 ± 30 mmHg, $p=0.037$ and 106 ± 25 vs 118 ± 22 mmHg, $p=0.023$).

AMD was detected in 49 patients (39%); in 48 patients we could obtain quantitative data. LA (41 ± 5 in D+ vs 39 ± 9 mm in D-, $p=NS$) and LV diameters (46 ± 6 in D+ vs 47 ± 8 mm in D-, $p=NS$) were similar between the two groups. Systolic blood pressure (at ED entrance: 109 ± 25 in D+ vs 109 ± 31 mmHg in D-; after 24 hours: 112 ± 24 in D+ vs 116 ± 24 mmHg in D-, all $p=NS$) and heart rate (at ED entrance: 105 ± 23 in D+ vs 101 ± 25 b/min in D-; after 24 hours: 99 ± 16 in D+ vs 96 ± 19 b/min in D-, all $p=NS$) were similar between the two groups. We did not find significant differences in terms of age (75 ± 11 in D+ vs 71 ± 16 years in D-, $p=NS$), comorbidity prevalence (Charlson score 4.2 ± 3.4 in D+ vs 3.3 ± 3.0 in D-, $p=NS$) and SOFA score at ED entrance (5.9 ± 2.8 in D+ vs 6.6 ± 3.0 in D-, $p=NS$) and after 24 hours (5.8 ± 2.4 in D+ vs 5.7 ± 3.0 in D-, $p=NS$) between D+ and D- patients; 28-days mortality was similar (26% in D+ vs 36% in D-, $p=NS$).

Troponin I (T0: 0.6 ± 1.1 in D+ vs 0.4 ± 1.1 ng/ml in D-, $p=NS$; T1: 0.9 ± 1.6 in D+ vs 0.5 ± 1.2 ng/ml in D-, $p=NS$; T2: 0.8 ± 1.1 in D+ vs 0.40 ± 1.1 in D+ vs 0.4 ± 1.1 ng/ml in D-, $p=NS$ 0.7 ng/ml in D-, $p=0.03$) and NTpro-BNP evaluation (T0: 15383 ± 19285 in D+ vs 7425 ± 7847 pg/l in D-, $p=0.087$; T1: 15346 ± 12812 in D+ vs 9366 ± 12683 pg/l in D-, $p=0.083$; T2: 23638 ± 35964 in D+ vs 8113 ± 10620 pg/l in D-, $p=0.084$) were not significantly different at ED entrance, at 24 and 48 hours; an analysis for repeated measures showed a significantly different trend (respectively $p=0.011$ and 0.021). Maximal NTpro-BNP was significantly higher in D+ patients (10344 ± 12499 in D- vs 24653 ± 32110 pg/l in D+, $p=0.037$). We evidenced a fair to good correlation between LVEF and NTpro-BNP after 24 hours ($r=-0.517$, $p=0.010$) and maximum NTpro-BNP ($r=-0.552$, $p=0.002$).

Conclusions: In septic patients admitted to an HDU, we evidenced a relevant AMD prevalence and we found that NTpro-BNP is the marker that shows the best diagnostic performance.

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Rez de Jardin poster area

EPIDEMIOLOGICAL PROFILE OF THE COMMUNITY INFECTIONS IN EMERGENCIES

Gnimdou Tchamdja, Jamal Noqobi, Khalid Khaleq, Khalid Yaqini, Mohamed Moussaoui, Mohammed Mouhaoui, Lhoucine Louardi

Emergency, CHU IBN ROCHD, casablanca, Morocco

Corresponding author: gnim2009@yahoo.fr

Keywords: infections, emergencies, mortality

INTRODUCTION

The septic states constitute a frequent motive for consultation in emergencies [1]. Their clinical polymorphism, etiologic and their gravity have to draw the attention of every physician. The purpose of our study is to

establish an epidemiological and evolution profile of all infections admitted in the emergencies medical service.

PATIENTS AND METHOD

This prospective study undertaken over 16 months. Inclusion criteria: adults admitted for a septic cases straightaway with a source of the infection obvious or discovered after systematic balance assessment. Were measured: the demographic, clinical and paraclinic data.

RESULTS

There were recorded 5640 hospitalizations during the period of study among which 234 cases of infection (global incidence of 4%). We note a male ascendancy (sex-ratio of 1.9). The average age of the patients is 47.5 years old (extremes are 15 and 95 years). The main motives for admission were the feverish neurological distresses (138 cases), the feverish respiratory distress syndromes (37 cases) and diabetic comas (30 cases). The average deadline of consultation is of 5 days. The main clauses represented etiologies. The etiologic main clauses represented in the picture below were the neuromeningeal infections (38.8% cases), respiratory (24.3% cases), cutaneous (12.7% cases), urinary 8.9% cases), digestive (8.1% cases), leptospiroses (2.5% cases) and tetanus 2.1% cases).

Also 69 cases of toxic shock were recorded whose origins were cutaneous (22 cases), respiratory (13 cases), neuromeningeal (10 cases), digestive (11 cases), urinary (8 cases), central KT (3 cases), leptospirosis (1 case) and tetanus (1 case). There were 124 deaths who have been registered either 52.9 % of cases.

DISCUSSION AND CONCLUSION

The community infections are providing more mortality. A premature coverage by optimization of hémodynamie and wide antibiotic treatment would be a part of the exercise book of responsibility of the emergency physician. In our context this rate can be overestimated because only the grave forms are forwarded in emergencies. Where from the interest of a circuit defined well for the coverage of the infectious states.

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Rez de Jardin poster area

GRAVE LEPTOSPIROSES IN EMERGENCIES

Gnimdou Tchamdja, Khalid Khaleq, Meriem Essakhi, Mohamed Moussaoui, Khalid Yaqini, Mohammed Mouhaoui, Lhoucine Louardi

Emergency, CHU IBN ROCHD, casablanca, Morocco

Corresponding author: gnim2009@yahoo.fr

Keywords: Leptospirose, emergencies,, icteri

INTRODUCTION

Leptospirosis is a worldwide zoonosis caused by pathogenic species of the genus *Leptospira*, the most frequent of which are the *icterohaemorrhagiae* [1]. The contamination is mostly indirect in hydric environment contaminated by urines of rats, dogs and of the cattle. The purpose of our work is to study the clinical, therapeutic and evolutionary characteristics of the grave forms admitted in the service of medical emergency.

PATIENTS AND METHOD

Prospective study undertaken over two years including adults admitted for a feverish icterus not cholestatique with a hemorrhagic syndrome or a suggestive biology. The studied parameters are: the demographic, clinical, therapeutic and evolutionary data.

RESULTS

There were recorded 8403 hospitalizations during the period of study among which 50 cases of icteri among which we count 16 cases of leptospirosis (32% incidence of the icteri). The average age of the patients was 45 years old (extremes are 19 and 85 years) with a male ascendancy (sex-ratio of 15). We found respiratory comorbidities (18.75%) and metabolic (12.5%). The average deadline of consultation was of 5.37 days. On the clinical plan, we found the icterus (100 %), a hemorrhagic syndrome (25 %), the confusion of consciousness (6.3%) and a respiratory distress syndrome and hémodynamique (6.25%). On the biological plan, we found an acute renal insufficiency, a thrombopenie and a hepatic cytolyse (100%), a CIVD (62.5%). The treatment consisted of a hydration (100 %), an antibiotic treatment.

COMMENTS

The leptospirosis is pathology of tropical and subtropical regions. The incidence is considered at 1 in 100/100.000/year [2]. Touyar in 2009 found an incidence 10 cases / year [3]. They are suppliers of mortality improved by a premature coverage by an adequate antibiotic treatment. Compared with the former series [3], in our context we note a considerable decrease of the number of cases of infection / year.

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Rez de Jardin poster area

OVERPRESCRIPTION OF ANTIBIOTICS IN THE ELDERLY IN THE EMERGENCY DEPARTMENT : EXAMPLE OF AMOXICILLINE-CLAVULANIC ACID

Sihem Ouar-epelboin (1), Loïc Epelboin (2), Alice Hutin (1), François Hemery (3), Bertrand Renaud (4), Medhi Khellaf (1)

1. Emergency Department, Centre Hospitalier Henri Mondor, Créteil, France

2. Infectious and Tropical Diseases department, Groupe Hospitalier Pitié-Salpêtrière, Paris, France

3. Public health Department, Centre Hospitalier Henri Mondor, Créteil, France

4. Emergency Department, Centre Hospitalier Cochin, Paris, France

Corresponding author: sihem.ouar@hotmail.fr

Keywords: elderly people, antibiotic use, emergency medicine

Background

The appropriate use of antibiotics in elderly patients is particularly important because of their weaknesses and their risk of infections, and the risk of emergence of multiresistant bacteria. The emergency department (ED) is the department where most of the antibiotic treatments are initiated. The antibiotic association amoxicilline and clavulanic acid (ACA), is a good example of antibiotic use for any febrile situation in the elderly, because of its relative broad spectrum. The aim of our study was to evaluate the overprescription of antibiotics in elderly patients, and the rational of their prescription.

Material and patients

We conducted a retrospective observational monocentric study. All the patients admitted to the adult ED of Henri Mondor Hospital, Parisian region, between January and November 2012 were eligible. We included the patients who received ACA and compared "young people" (age < 75 years old) to elderly people (≥ 75 years old). Patients for whom the age was not available were excluded from the study. We then studied the indication of antibiotics in the elderly group. Patients were identified using the medical software Urqual® and patient receiving the antibiotic were identified using the keyword "Augmentin" in the anonymized medical chart. The age, the temperature level and the diagnosis were collected. Absence of fever was defined as a body temperature comprised between 36 and 37.7°C.

Results

During the study period, 41638 patients were admitted in our ED. Among them, 6669 were older than 75 years old (16.0%). Among the global population 581 received ACA (1.4%), including 284 in the elderly group (49.7% of the prescription of ACA and 4.2% of the elderly patients) vs. 297 in the young group (50.3% of the prescription of ACA and 0.8% of the young group) and this difference was statistically significant (OR 5.2; 95%CI 4.4-6.2; p<0.001). Among the 267 elderly patients who were tested for temperature at the arrival in the ED, 111 had a fever (41.6%), 12 had hypothermia (4.5%) and 144 were afebrile (53.9%). In the elderly population receiving ACA, the diagnosis were reported as following: 202 (71.4%) lower respiratory tract infection (156 pneumonias, 22 aspiration pneumonias, 12 COPD exacerbations, 12 acute bronchitis), 34 (12.0%) skin and soft tissues infections, 14 (4.9%) preemptive antibiotics in the treatment of a bone fracture, 8 (2.8%) for ENT reasons, 4 abdominal infections (1.4%), 5

(1.8%) other infectious diagnosis and 16 non infectious diseases (5.6%). Among patients with a diagnosis of respiratory tract infection, 22 had a diagnosis of acute cardiac failure associated. In the elderly group receiving ACA, 15 (5.2%) were discharged, 3 (1%) died, 3 (1%) were admitted in the ICU, 184 (64.8%) in the short term hospitalization unit and 79 (27.8%) were admitted in another department.

Discussion

In our study, ACA was prescribed 5 times more in elderly patients than in young patients. Thus, ACA prescription in the elderly group represented half of the total prescriptions while elderly patients represented only 16% of the total admission in the ED during the study period. This study shows that there is a major overprescription of antibiotics in the elderly group. Most of the indications reported in the medical charts seemed to be correct, but, as the study was retrospective, it was not possible to check if the reported initial diagnosis was confirmed later. Nevertheless, it is generally difficult to make a definitive diagnosis in the ED because all the results, especially microbiological, are not available yet. Elderly patients are more sensitive to infections than young people. Furthermore, establishing a precise diagnosis is much more difficult in elderly people who have atypical clinical signs, afebrile infections and multiple comorbidities. Here more than 2/3 of the patients received ACA for lower respiratory tract infection but 85 (45.5%) were afebrile, and half of the elderly patients with ACA were afebrile which provides doubt about the reality of the infection.

Conclusion

Our study showed a consequent overprescription of antibiotics but failed to determinate if it corresponded to a misuse or not. Thus it is particularly important to provide the right treatment in the right indication in order to avoid unnecessary prescription especially in elderly patients with all the expected individual and collective side effects.

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PNEUMOMEDIASTINUM: UNUSUAL COMPLICATION OF INFECTION WITH INFLUENZA A H1N1 (ABOUT A CASE)

Hanane Ezzouine (1), Nadia Harbouze (2), Bouchra Abdous (2), Boubaker Charra (3), Abdellatif Benslama (4)

1. anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-Morocco, casablanca, Morocco
2. Anesthesiology and intensive care, university teaching hospital Ibn Rushd-Casablanca-Morocco, casablanca, Morocco
3. anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-morocco, casablanca, Morocco
4. anesthesiology and intensive care, university teaching hospital Ibn Rushd.CASABLANCA.MOROCCO, casablanca, Morocco

Corresponding author: ezzouinehanane@yahoo.fr

Keywords: Pneumomediastinum, INFLUENZA A H1N1 VIRUS, FAVOURABLE EVOLUTION

Influenza A (H1N1) is a viral infection that can develop in pandemic mode and be responsible for a serious and severe pulmonary disease in a population at risk include immunocompromised. We report the case of a young diabetic patient admitted to the ICU for a hypoxic viral pneumonia complicated H1N1 flu pneumomediastinum We report the case of a 25 years old female patient with type 1 diabetes using insulin;. Admitted ICU for DKA decompensated by hypoxémie.2 pulmonary days before admission she presented a cough with fever unencrypted.

On admission, the patient was unconscious GCS: 11/15, with no deficit, FR: 24cpm, SpO2 88% on air, stable hemodynamically, Dextro: 3.93g / l with glycosuria and ketonuria front. worsening respiratory distress, the patient was sedated and intubated ventilated Laboratory tests noted a glucose 2.19g / l, thrombocytopenia 86000/mm3;. 2600/mm3 leukopenia, lymphopenia 360/mm3sans other abnormalities. Blood Gases notes PH: 7.20, PaCO2: 29mmHg, PO2: 142mmHg, HCO3: 11mmol / l, PaO 2 / FiO 2: Quick 203.Test HIV was negative. Pulmonary Radiology objectified extensive.Le a pulmonary bacterial balance (bronchial Recurring, urinalysis, blood culture) was negative The nasopharyngeal swab was positive for H1N1;.'s Initial management was intubation and mechanical ventilation, antibiotics based of ceftriaxone 2g / d 2fois Tavanic 500mg / d and oseltamivir "tamiflu" x2/jour 75 mg. At day 15 of hospitalization, the review found extensive subcutaneous emphysema, pulmonary radiography objectified minimal pneumothorax and pneumomediastinum. Thoracic Scanner showed foci of infectious pulmonary condensation, bubbles emphysema and pneumomediastinum. Chest radiograph has objectified the disappearance of pneumomediastinum. Influenza A (H1N1) may be associated with severe respiratory complications, type of bacterial infection and failure respiratoire.Le pneumomediastinum is a rare complication of influenza A (H1N1) secondary to bronchial obstruction or necrotizing pneumonia.

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Rez de Jardin poster area

BASELINE RISK FACTORS OF ICU LIMITATION OF CARE DECISION FOR ED PATIENTS WITH SEVERE PNEUMONIA

Aline Santin (1), Alice Hutin (1), Bertrand Renaud (1)
1. Emergency Department, University Hospital Cochin and Hôtel-Dieu, Paris, France

Corresponding author: bertrand.renaud@cch.aphp.fr

Keywords: limitation of care, community acquired pneumonia, intensive care

Introduction: Limitation of care (LOC) is a collegiate medical decision that deeply alter the process of care and often precipitate death in severely affected patients. Baseline medical risk factors of upcoming LOC decision for patient presenting to ED has been poorly explored. Such criteria

would help to improve severe patients' process of care and maybe offer the possibility of saving ICU limited resources.

Material and methods: Retrospective study design of patients with CAP admitted to ICU within 8 days of ED presentation conducted over a 2-year period across 4 tertiary teaching hospital in Paris area. Collection of patient's demographic, medical history, clinical and laboratory, process of care characteristics and medical outcomes. According to LOC decision that referred to decision taken during patient's ICU stay, we defined the 2 study groups We compared patient characteristics between the 2 study groups using Student t test or Fisher exact test and Pearson's chi 2 test when appropriate. We subsequently performed a multivariate logistic regression to assess patient's and process or care characteristics independently associated with ICU LOC decision

Results: 373 patients were included: 340 (91.2%) without (NoLOC) and 33 (8.8%) with LOC (YesLOC). YesLOC patients were older than NoLOC (79 y versus 62 y, respectively) ($p < 0.001$). As an all, prevalence of at least one underlying comorbid condition was higher in YesLOC (97% versus 78%) while individual comorbid conditions (neoplastic disease, liver disease, congestive heart failure, renal failure, chronic pulmonary disease, cerebrovascular disease, diabetes mellitus) did not differ excepted for coronary artery disease: 10.1% versus 33.3% in the NoLOC and YesLOC, respectively ($p < 0.001$). Physical examination findings presented no differences excepted for altered mental status (11.6% versus 48.4%, respectively; $p < 0.001$). Vital function supports were less prevalent among NoLOC patients: intubation (33.5% versus 69.7% respectively, $p < 0.001$), vasopressors (28.9% versus 69.7% respectively, $p < 0.001$). Microbiologic etiology also differed: gram negative bacilli (27.7 in NoLOC versus 75% in YesLOC, $p < 0.001$), while baseline Lactate level was similar in both groups. Unsurprisingly, inhospital mortality was much higher among YesLOC: 9.3% in NoLOC versus 84.9% in YesLOC group, ($p < 0.001$). In logistic regression analysis, comorbidities (OR = 10.8, 95% CI: 1.2-95.4), age > 80 years (OR=9.1, 95% CI: 3.7-22.1), hypothermia (OR = 6.9, 95% CI: 1.6-29.4), altered mental status (OR=6.2, 95% CI: 2.4-15.9) lactate > 2.5 mmol/L (OR = 2.4, 95% CI: 1.0-6.0) were independent criteria associated with LOC. In contrast, critical care physician advice was associated with decreased risk of LOC (adjusted OR 0.4 95% CI: 0.15-0.91)

Discussion: Baseline ED medical characteristics of patients with severe CAP that were subsequently admitted to ICU differed between patient with and without LOC. Underlying comorbid conditions, older age, hypothermia and altered mental status were the main risk factors of upcoming ICU LOC decision, while seeking critical care physician advice was independently associated with NoLOC. This issue is particular interest since apart from a very high inhospitality LOC was associated with higher proportions of patients treated with mechanical ventilation and vasopressors.

Conclusion: Consistent with previous findings, severity criteria and particularly comorbid conditions were independently associated with LOC in the ICU, while seeking critical care medical advice seems protective against LOC in the ICU. As LOC in the ICU is also associated with the use of expansive and limited resources (vital

function support), this issue deserves further consideration to improve ED process of care and adequate allocation of resources.

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Rez de Jardin poster area

IMPROVEMENT OF COMMUNICATION WITH PRIMARY CARE VIA THE USE OF EMERGENCY DEPARTMENT DISCHARGE SUMMARIES

Benjamin Ramasubbu, Lee Yap, Ayman El Gammal, Una Kennedy

Emergency Medicine, St James's Hospital, Dublin, Ireland

Corresponding author: ramasubb@tcd.ie

Keywords: Electronic Discharge Summaries, Documentation, Communication

Background

Patients discharged from the emergency department (ED) may not realise the importance of follow-up with their primary care physician or General Practitioner (GP). Therefore discharge summaries should be provided to the GP of all patients treated in the ED in order to facilitate continuity of care. Poor communication between emergency physicians (EP) and GPs may be a contributing factor leading to adverse events after a patient has been discharged from hospital. The use of computerised discharge summaries has been an on-going area of interest in hospitals in order to increase efficiency, accuracy and speed of communication with GPs.

Aims

The aim of this audit was to evaluate the documentation of discharge information and follow-up care in ED notes in our institution.

Methods

• Initial Audit Cycle

The ED records of 50 patients who presented to the ED and who had been discharged to self-care or the care of their GP on an arbitrarily chosen day (22.05.12) were selected for auditing.

• Intervention

A pre-formatted computerised discharge summary was introduced to the ED on 07/07/2012. It was used for all patients discharged to GP or self-care.

• Second Audit Cycle

The first 50 consecutive electronic discharge summaries of patients who visited the ED were selected for auditing. These 50 patients must have been discharged to self care or to the care of their GP.

Additionally, the use of the electronic discharge summaries was investigated by observing their use on three arbitrarily selected days (27/08/2012, 18/09/2012 and 12/11/2012).

Results

The results of the first audit cycle; 20/50 patients (40%) were discharged back to their GP and 30/50 (60%) to self-care. A diagnosis was documented in 16/20 (80%) and 23/30 (77%) of cases respectively. Documentation of key

investigation results was present in 15/20 (75%) and 27/30 (90%) respectively. Documentation that a prescription was provided to the patient was present in 10/20 (50%) and 13/30 (43%) of cases respectively. Documentation of appropriate follow-up care and self-care instructions was demonstrated in 34/50 (68%) and 25/50 (50%) of cases. Of those discharged to GP, all had documentation of this (20/20) yet none had documentation that a GP letter was sent or a copy attached (0/20).

After the introduction of the electronic discharge summaries the first 50 were analysed. 35/50 (70%) patients were discharged to the care of their GP and 15/50 (30%) to self-care. GP correspondence letters were sent and a copy saved in all cases (50/50). A diagnosis, follow-up care plan and results of key investigations were documented in 50/50 (100%) of discharge summaries. Self-care instructions on discharge were documented in 93% of the patients discharged both to self-care and GP care. The prescription of medications given or not given was documented in 41/50 (82%) of cases.

On the three arbitrarily chosen days, of patients discharged to GP or self-care, the electronic discharge summaries were used in 20/57 (35.1%), 23/58 (39.7%) and 20/57 (35.1%) of cases respectively.

By comparing the six parameters mentioned above (documentation of diagnosis, key investigation results, provision of prescription, follow-up care, self-care instructions and evidence of GP letter sent) and using 95% Confidence Limits statistical calculation, a significant improvement in documentation within our emergency department with the use of the electronic discharge summaries is shown ($p < 0.05$).

Conclusion

Good clinical practice involves comprehensive documentation. Furthermore this may prevent medico-legal action. The results show a significant improvement ($p < 0.05$) in documentation with the use of the electronic discharge summaries. Although the electronic discharge summary usage in our ED is currently only 35-40%, we envisage that over the coming months this will increase dramatically. Additionally, our ED uses a computerised patient tracking system and so it would be possible to mandate the use of the electronic discharge summaries prior to discharging a patient on the computer system.

The electronic discharge summaries allow for a uniform, thorough and clear means of information storage and transfer and it is hoped that they pave the way for further improvements in information transfer technology.

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Rez de Jardin poster area

DECONSTRUCTING THE USE, RISKS AND BENEFITS OF PERSONAL MOBILE DEVICES IN EMERGENCY MEDICINE

Farhan Hameed

Editorial, PEPID International, Des Plaines, United States

Corresponding author: dkurlander@pepid.com

Keywords: integrating emergency-focused Clinical Decision Support into your Emergency Department Information System, mobile technology, emergency focused clinical decision support

The increased use of mobile devices in emergency medicine has left emergency room administrators with a host of questions:

- Does mobile technology impact use of time and money and if so, how?
- What resources are being used most often by emergency practitioners?
- What are the pros and cons of the “bring your own device” trend?
- And most importantly, how should emergency-specific decision support technology be integrated into workflow?

Today 1000's of physicians in the ER are using mobile devices in their daily practice. Based on experiences around the world, medical mobile technology has been proven to: reduce medical errors, increase accuracy, reduce drug errors, standardize care across a large region, make large systems more efficient and bring evidence to daily practice. Providers are bringing mobile devices and tablets to work to: improve patient care, find answers at the bedside, reduce medication errors and access resources not otherwise offered by workplace. And, the most commonly accessed type of information is clinical reference material. Most institutions purchase Clinical Decision Support resources intend to provide physician access only, but everyone is benefiting— PAs, NPs, nurses, pharmacists and even billing representatives are using these resources for everything from treatment options, to ICD-9 or ICD-10 codes, etc.

But, rather than having access to standardized resources within the department or institutions doctors are bringing their own devices, and their own references with them. This is creating a “wild west” attitude towards decision support reference. Slightly less than 50% of hospitals/groups have 1 or 2 references available for emergency practitioner, and a surprising 18% say no referential information is available, with another 30% saying that referential information is available, but it's not emergency focused.

From an institutional standpoint, there are more and more concerns arising from this trend that's sure to continue. For Example:

- What is the validity of the reference?
- Are too many references being used?
- Are there security concerns?

Now, we have access to the information we need with the touch of a couple buttons, available electronically within an EMR system, on a mobile device such as an iPhone, iPad or Android, or on a computer, bring the reference information needed to confirm decisions at our fingertips.

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Rez de Jardin poster area

THE USE OF OPEN SOURCE ELECTRONIC MEDICAL RECORDS IN AN URBAN ED IN KUMASI-GHANA

Joseph Bonney (1), Peter Donkor (2), Beth Ebel (3), Maysel Stella Forson (1), Paa Kobina Forson (1), David Kumi (4), Charles Nathan Mock (3), George Oduro (1), Chris Oppong (1), Maxwell Osei-ampofo (1), Rockefeller Oteng (5)

1. *Emergency Medicine, Komfo Anokye Teaching Hospital, Kumasi, Ghana*

2. *School of Medical Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, United States*

3. *Harborview Injury Prevention Centre, University of Washington, Seattle, United States*

4. *Mathematics Department, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana*

5. *Emergency Medicine, University of Michigan, Michigan, United States*

Corresponding author: Kaforson@yahoo.com

Keywords: Emergency department, medical records, Openemr

Introduction: In a busy emergency department (ED), missing patient medical records is a common complaint to contend with. Electronic medical records may be one useful ways of ensuring patient record integrity and confidentiality. Komfo Anokye Teaching Hospital (KATH) ED

sees 28,000 patients a year and integrity of patient records is a major challenge.

Objectives: To improve the integrity of medical records within the ED and efficiency of patient flow within the ED

Methods: Regular panel meetings of emergency physicians, IT specialists and bio-statisticians were held from February, 2012 to February, 2013. Open source software, Openemr was adapted in the creation of electronic medical records for the ED of KATH in February, 2012. Changes made to the software included registration and patient search, triage board, doctors notes whiteboard. Changes were made to the software to reflect the pattern of practice in KATH ED.

Results: The triage scale used in KATH ED was included in the software to allow records of triage to be stored. The software allows registration, triage and the entire medical records to be stored on patients. The software is currently running in the ED via an intranet system. The specialists on duty and charge nurses are able to monitor patient flow in the ED.

CONCLUSION: Open source medical records may be the most appropriate and cost-effective software to adapt for keeping patient records electronically in a low resource setting. Further studies needs to be conducted on how the software affects the pace of work in the ED.

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Rez de Jardin poster area

KOBO: A DIGITAL TOOL, IN PSYCHOSOCIAL NEEDS ASSESSMENT OF CHILDREN IN POST DISASTER RESILIENCY SETTINGS.

Majed Aljohani (1), Abdulrahman Alqahtani (1), Sarah Carson (2), Srihari Cattamanchi (1), Gregory Ciottone (1), Neil Hendrick (3), Moira Hennessey (2), Mick Molloy (1), Phuong Pham (3), Patrick Vinck (3), Prasit Wuthisuthimetawee (1)

1. *Harvard Affiliated Fellowship in Disaster Medicine / Emergency Management, Harvard Medical School, Boston, United States*

2. *Psychosocial, Child in Hand, Boston, United States*

3. *Harvard Humanitarian Initiative, Harvard School of Public Health, Cambridge, United States*

Corresponding author: c.srihari@gmail.com

Keywords: KoBo Technology, Post Disaster Needs Assessment, Haitian Children Psychosocial Needs Assessment

Background:

Digital collection of data through is making a huge impact on the way modern day research is conducted and adopted very quickly into various fields of research. The KoBo platform is a free, open access resource for creation of digital forms and research structures, data collection, consolidation and analysis. The KoBo has been designed for rapid implementation in austere conditions, and has been used in various third world countries of Africa and Asia.

Using The KoBo, one can easily create a digital survey for electronic data collection, which can also contain bar-codes, geo-tagged images, audios and videos, with time-

stamps and GPS geo-location, to monitor when and where the data was collected. Data accuracy can be ensured using data constraints and skip logic systems. Using the KoBo, data can be collected using Mobile devices and it runs on Android operating systems, based on Open Data Kit project's ODK platform.

Objectives:

To pilot use of the KoBo as a digital tool and explore its utility in psychosocial assessment with children in unique research settings.

Methods & Methodology:

An observational study, piloted the use of the KoBo platform in the post disaster resiliency settings of Haiti, aiding in the psychosocial needs assessment of the vulnerable population. The KoBo Form was used to create a quantitative & qualitative Psychosocial Needs Assessment form. The psychosocial needs assessment data, from the vulnerable population were collected using the KoBo Collect installed on Android Mobile phones. The data was synchronized onto our Laptop using the Kobo Sync and converted into simple excel database, where data could be analyzed via SPSS.

Two local community health workers were trained for 2 hours on use of the KoBo form to collect quantitative and qualitative data. With regard to feedback on the KoBo toolkit, individual reporting and daily research team debriefing on use of the KoBo toolkit offered subjective reports on the experience and appropriateness of this form of data gathering and recording.

Results:

Using the KoBo toolkit, a total of 130 children and 15 caregivers were interviewed at six CiH orphanages sites successfully by 2 local community health workers, supported by an expatriate social worker and a psychologist during a brief four-day period in August 2012. This data informed a profile for the children at these sites to inform future program planning and health care provision.

With regard to the use of this digital tool, the local and expatriate research team reported the following observations:

-This format allowed for "easier" collection of both qualitative and quantitative data in a shorter period of time than otherwise anticipated.

-The platform was easily understood and mastered by interviewers with a brief overview of how to use the cell-phone technology.

-The non-paper format of this format was easier to transport, was cost-effective and time saving. Additionally backing up material in a variety of digital formats was possible in settings where alternative forms of back up might have otherwise been a challenge.

-Children appeared comfortable conducting interviews with staff using this technology, and did not appear distracted by its use. In fact, interviewers suggested the size and ease of data collection with this format allowed for greater comfort and communication with participants than experienced on alternative formats.

-Syncing of data daily, allowed for rapid informal feedback of the data to inform ongoing activities with sites in real time.

-Researchers subjective report of the data, suggested that this format lead to less unanswered responses than experienced elsewhere, and attention to time stamping allowed the PI to provide feedback and support for interviewers experiencing any difficulty with obtaining the responses required.

It took approximately 30 minutes to collect data from each person. There was zero percent data error detected in the data base. The 4 evaluators using the KoBo toolkit, rated ease of use of KoBo with a Likert's score of 4.5. Accuracy of data entry as 5 out of 5. Easy to access data 5/5. Time-stamp and geo-tagging were present in all 145 individual database.

Conclusion:

The KoBo Toolkit was useful in psychosocial assessment of children in a post-disaster Haitian setting. Interviews and researchers found it to be an appropriate research tool to streamline the data collection process and allow for connection with participants.

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Rez de Jardin poster area

ANALYSIS OF VITAL RECORDS IN CANCER PATIENTS DEATHS IN THE EMERGENCY DEPARTMENT.

José Valero-roldan (1), Cristina Fernández-figares (1), Rafael Infantes-ramos (1), Inmaculada López-leiva (1), Iván Villar-mena (2), Anabel Martínez-chamorro (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Vital records, Cancer, Emergency department

Introduction / Background: The Anticipated vital records is a written document that contains preferences about health care and treatment they wish to receive, to be fulfilled at the moment we have no ability to express himself.

In recent years we have seen that the majority of cancer patients who die in the emergency lack this statement, making decisions in the agonizing situation.

Objetives: To examine medical records of cancer patients deaths in the emergency department, and analyze which of them had an anticipated vital record.

Design: Descriptive retrospective, observational study.

Methodology

Sample : 68 patients who died of advanced cancer disease during 2009,2010,2011. (precision=0.009; Alfa=0.05).

Instruments : medical records of patients, Guide Anticipated Vital Records by by the Andalusian Health System.

Statistical analysis: Was carried out descriptive phase of the following variables: age, sex, anticipated.vital record . SPSS. V15

Results: Anticipated vital records before hospitalization was low, registering only 2 cases in 2009, 4 cases in 2010 and 8 cases in 2011.

Discussion: There is a severe shortage of records, only had a 20% early registration of cancer patients advanced terminally who died in the emergency department. The rest of the consents were obtained in the emergency department, involving decision making parallels the agonal phase.

Conclusion: Knowing the will of the patient before the critical situation of the agony could improve attitudes to be taken by the patient, family and physician. Therefore the set of doctors who are monitoring patients with advanced-stage disease should be responsible for informing the patient during visits and consultations, as well as provide information on how to do it. This would avoid making decisions in a stressful situation.

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Rez de Jardin poster area

KNOWLEDGE LEVEL OF THE END OF LIFE'S LAW IN A FRENCH TEACHING HOSPITAL

Aline Santin (1), Alice Hutin (1), Bertrand Renaud (1)
1. Emergency Department, University Hospital Cochin and Hôtel-Dieu, Paris, France

Corresponding author: bertrand.renaud@cch.aphp.fr

Keywords: end of life, knowledge, law

Introduction: End of life care issues are a matter of particular attention and concern for health care workers, particularly in hospital; its related legal framework in France is currently under debate. As a way to improve our knowledge about the end of life act, we conducted a prospective observational study in our teaching hospital.

Material and Methods: We elaborated a questionnaire directed to health care workers in every unit of our teaching hospital in Paris area. We intended to ascertain health care workers knowledge about the "person of trust" who is a proxy that is allowed by law to endorse health care decisions in case the patient would be unable to decide for him or herself (type, term of validity), advance directives (definition, term of validity, function), and collegiality of end of life decisions. We randomly selected a representative sample of our hospital health care workers to whom we subsequently administered the questionnaire. We then compared the knowledge of the law depending on professional categories: non medical and medical (including senior and junior doctors).

Results: 176 health care workers were included: 88 in medical units, 34 in surgical units, 54 in emergency departments (pre- and in-hospital settings). There were 75 physicians among whom 33 senior doctors, and 101 paramedics (60 nurses and 32 nursing auxiliaries). Mean length of service was 3.5 years and 1.5 years in the current unit. 90% declared knowing the definition of the "person of trust", 76 % knew his/her mention in patients' medical

records was mandatory, and 66% knew her/his role to relay patient's will. 65% knew the meaning of advance directives, 75% ignored their period of validity. Collegiality during end of life decisions have to integrate the hand person or the family when the patient is unable to express own will. In comparison to paramedics, the medical staff had a better knowledge of advance directives (70% versus 53%, $p=0.025$), and that collegiality is needed to make appropriate end of life decision (77% versus 60%, respectively $p=0.004$). Differences between junior and senior doctors were limited to advance directives (respectively 85% versus 65%, $p=0.05$).

Discussion: Based on our findings, the knowledge of the end of life act seems quite good among the health care workers of our teaching hospital. However some specific aspects such as the period of validity of "the person of trust" and advance directives) still require attention and teaching initiative. Moreover, as our findings were exclusively based on declarative data they may overestimate the actual appliance of appropriate end of life care in daily practice.

Conclusion: In spite of a quite satisfactory level of knowledge of the end of life care act, some specific aspects remain poorly understood by health care workers. Because our findings are based on declarative data and most certainly overestimate the actual level of knowledge, a prospective survey based on actual end of life issues would certainly provide more accurate estimates, therefore allowing to design specific intervention for improving end of life care.

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Rez de Jardin poster area

USE OF LOGISTIC REGRESSION TO PREDICT THE NEED FOR ADMISSION AMONG EMERGENCY DEPARTMENT PATIENTS: A MODEL TO PREDICT PATIENT SUITABILITY FOR A RAPID ASSESSMENT ZONE

Jeffrey Franc (1), Manuela Verde (2)
1. Emergency Medicine / Disaster Medicine, University of Alberta / University of the Eastern Piemonte, Novara, Edmonton, Canada
2. Critical Care, University of the Eastern Piemonte, Novara, Novara, Italy

Corresponding author: jeffrey.franc@gmail.com

Keywords: logistic regression, rapid assessment zone, emergency department

INTRODUCTION: Facilitating patient flow through the emergency department can sometimes be difficult administration task. The ability to predict which patients will require admission to the hospital can be an important factor in facilitating this flow. For instance, patients who are likely to require a short emergency department visit can often be assigned to low acuity areas. Conversely, patients who are likely to require admission to the hospital may be assigned to areas with such resources as cardiac monitors,

and nursing staff. The University of Alberta Hospital in Edmonton, Alberta, Canada is a large tertiary care hospital. The emergency department receives approximately 250 adult and pediatric patients each day. In order to facilitate the flow of patients who are likely to be treated in the emergency department and discharged, a new rapid assessment zone (RAZ) was introduced to the emergency department approximately 6 months prior to the present study. In order to be candidates for this rapid assessment zone, patient's are required to be of low acuity and suitable for treatment and discharge in this area. That is, admitted patients are not to be placed in this area. At present there is a brief guiding document for use by the triage nurse to assist in this decision. The goal of this study is to create an admission rule based on logistic regression to predict which patients are unlikely to require admission to the hospital and are thus suitable for inclusion in the rapid assessment zone. A logistic regression model was fitted to the existing data with the null hypothesis of all coefficients equal to 0 was tested against the alternative hypothesis that some coefficients do not equal 0.

METHODS: In this retrospective cohort study, data from one week of emergency department visits was obtained from the emergency department information system computer. This data included the patient's age, gender, triage score using the Canadian triage assessment score (CTAS), pulse, respiratory rate, Glasgow coma scale, systolic blood pressure, and arrival by ambulance or not. These factors were considered for inclusion, as predictors for the binary outcome measure of admission versus no admission. The observations were used to fit a generalized linear model using a binomial random component and the logit link. Goodness of fit was assessed by the Hosmer-Lemshow statistic, and model adequacy was assessed using the generalized coefficient of determination (R-squared).

RESULTS: Data was available for 2486 emergency department visits. This included 526 admissions and 1960 discharges. Mean age was 48 years. Assigned CTAS was 30 code 1, 484 code 2, 1204 code 3, 615 code 4, and 153 code 5. Only 566 observations included complete data, and these were used to fit the binomial logistic model. Only age, sex, CTAS, respiratory rate, and ambulance arrival had confidence intervals for the coefficients that did not cross 0. Pulse, GCS, and systolic blood pressure coefficients crossed zero. The minimal AIC value of 500.62 for the model included the age, sex, CTAS, respiratory rate, and GCS terms. Notably however, the simpler model without the GCS term had an AIC value of 500.67 – matching the terms that appeared significant in the confidence intervals. Thus, for the sake of parsimony, the final model was fit with only the age, sex, CTAS, respiratory rate, and ambulance arrival terms. The Hosmer-Lemshow statistic was 13.0 ($p=0.11$). The generalized coefficient of determination (R-squared) was 0.306.

CONCLUSIONS: The present study suggests that the factors of age, gender, triage score, respiratory rate, and arrival by ambulance are the most important for predicting need for eventual admission. This is valuable information, since the current criteria for placement in the RAZ does not include the factor of arrival by ambulance or gender, which should be considered for addition. Although, the Hosmer-

Lemshow statistic did not reveal statistically significant lack of fit, the generalized coefficient of determination was relatively low indicating that the model could explain only 30% of the variation in admission rate.

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Rez de Jardin poster area

EGYPTIAN PATIENTS SATISFACTIONS WITH THE RECENT DEVELOPED EMERGENCY MEDICINE SERVICES.

Tamer Montaser (1,2), Ahmed Hassan (3)

1. Emergency Department, Cairo University Hospital, Egypt.

2. Emergency Department, Prince Mohamed bin AbdulAziz Hospital, Riyadh, KSA.

3. Emergency Department, King Khalid Hospital, King Saud University, Riyadh, KSA.

Corresponding author: tamer_montaser@yahoo.com

Keywords: Egyptians, EMS, MOH

Background: Over the past three years, the Egyptian ministry of health (MOH) has acquired approximately 1200 new full equipped ambulances greatly expanding its pre-hospital capabilities and response. This service provider through basic life support practitioners. Although measuring quality in Emergency Medical Services (EMSs) systems is challenging, patient perspective is a key consideration for quality improvement in public organizations.

Objectives: To investigate the Egyptian patient experience in EMS and help leaders guide future improvements.

Method: Face-to-face interview based survey of the satisfaction with EMSs among Egyptian patients. The survey of 4 selected Emergency departments (EDs) of university hospitals is conducted in 4 geographical areas.

Results: 200 patients (average age of 29 ± 2 year, 63% male) participated in the survey. 76 % were unsatisfied with the whole Emergency medicine care and owed this to the long time waiting in the EDs and negligence by Emergency physicians. 88% were happy with the prehospital services, the average ambulance emergency response time were around 30 minutes.

Conclusion: Health leaders should work on improving the hospital EDs with developed equipments and well-trained staff .It is necessary to establish an integrating evaluating system to monitor ongoing health care programs. The rapid, low-cost surveys can highlight public problems and yield useful information for quality improvements.

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Rez de Jardin poster area

EMERGENCY MEDICINE IN EGYPT: CURRENT SITUATION AND FUTURE PROSPECTS.

Tamer Montaser (1,2), Ahmed Hassan (3)

1. Emergency Department, Cairo University Hospital, Egypt.
2. Emergency Department, Prince Mohamed bin AbdulAziz Hospital, Riyadh, KSA.
3. Emergency Department, King Khalid Hospital, King Saud University, Riyadh, KSA.

Corresponding author: tamer_montaser@yahoo.com

Keywords: Emergency, Egypt, EMS

Introduction: Emergency medicine is in the early development phase in Egypt. It was first registered in 2001 and although there are about 250 physicians finished their training in the specialty, less than 20 still work in Egypt and others moved to work through the world, mainly to Arab Gulf region. There is not a specialty society in emergency medicine, although there is an Egyptian Society of Intensive Care Medicine and Trauma (ESICT) with an interest in emergency medicine.

Emergency care: The Emergency Medical Services Department of the Ministry of Health (MOH) is involved in the pre-hospital aspects of emergency medicine. Over the past three years, the MOH has acquired approximately 1200 new full equipped ambulances greatly expanding its pre-hospital capabilities and response. This service provider through basic life support practitioners. In the meantime, personnel within the MOH continue to provide Hospital Emergency departments through the country with new equipments and episodic short training programs for staff in the care of trauma patients and cardiac life support.

Emergency medicine training programs: The Egyptian specialty board is a 4 year formal training program is considered the leader institute in emergency medicine training in Egypt which started early of 2001 with more than 200 graduates until now. The most disadvantage of the program is lacking of specialist trainers and it mainly depends on skilled personnel from other specialities in each hospital, most of them are unaware of the specialty curriculum and updated guidelines in Emergency medicine. There are three university hospitals give academic master degree in Emergency medicine but they are away behind the basic training requirements although they have good approved curriculum did not come to real practice yet.

The future: Although Egypt was one of the first countries outside USA which considered Emergency medicine as specialty, immigration of trained Emergency physicians, leaving the positions for unqualified personnel from other specialities and lacking of resources had affected the specialty badly. For Emergency to move forward, we should depend on specialists to build the emergency society with annual international conference and local policies and guidelines and outreach programs to rural and borders regions.

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DATA MINING APPLICATION IN PATIENT BEHAVIOR BASED ON LENGTH OF STAY IN THE EMERGENCY DEPARTMENT

Yen-yi Feng (1)

1. Emergency Department, Mackay Memorial Hospital, Taipei, Taiwan

Corresponding author: aforeng0812@gmail.com

Keywords: data mining, length of stay, ED overcrowding

The demand for emergency medical services has increased in recent years; therefore, emergency medical treatments have become an important area of study for progressive developing countries. The emergency departments (EDs) of hospitals have been faced with the problems of Access Block or Overcrowding, i.e., a long waiting time for inpatient beds or a high number of patients at the peak of time-delayed patient treatment. According to the statistical data of the Department of Health in Taiwan, the number of people treated in EDs has increased by 16 percent between 2000 and 2010, growing from 6,184,031 to 7,229,437 patients. The Institute of Medicine recently noted that the problem of ED crowding is an obstacle to the safe and timely delivery of health care. Because the EDs must always be available to provide emergency medical care for patients, ED resource management can be extremely complex and uncertain. Existing research on ED crowding is sparse and has tended to focus on the present crowding state. The objective of this study was to identify possible solutions for emergency department (ED) overcrowding in the Mackay Memorial Hospital in Taiwan.

This research proposes a three-phase ED crowding data mining and analytical framework. We apply association rule mining to identify frequent ED behaviors of patients and infrequent ED behaviors of patients. Accordingly, two types of patient behavior (PB), i.e., the regular and exception behaviors of patients were identified. We adopted a k-means clustering approach to classify two types of PBs based on different LOS and then labeled the cluster results by linguistic terms, i.e., long, medium or short LOS. Finally, we extracted common and different rules from clusters of LOS of two types of PBs by the decision tree techniques, i.e., J48, CART, and JRip. We then used another data set to verify the rules in terms of precision and accuracy. Finally, the aim of this research is to assist the ED of a hospital in decreasing the overcrowding conditions and improving the quality of decision making.

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Rez de Jardin poster area

RELIABILITY AND VALIDITY OF MINISTRY OF HEALTH OF TURKEY'S MANDATORY EMERGENCY TRIAGE INSTRUMENT

Emre Erimsah, Elif Yaka, Serkan Yilmaz, Ahmet Kama, Murat Pekdemir

Emergency Department, Faculty of Medicine, Kocaeli University, Kocaeli, Turkey

Corresponding author: elif.yaka@kocaeli.edu.tr

Keywords: emergency, triage, reliability and validity

INTRODUCTION

Emergency departments (EDs) aim to provide efficient emergency care to all patients in a safe and timely manner. Triage systems are used to prioritize patients according to their acuity especially in crowded conditions. They are also anticipated to predict resource utilizations, hospital and intensive care unit admissions, in-hospital deaths and hospital costs.

In the era of ED overcrowding, there is a growing interest to triage, the point of first contact, to ensure patient safety. Despite widespread use and advancements in triage process by means of extensive research, no particular method has been introduced to widely recommend for safe decisions. However, a national, uniform, standardized reliable and valid five-level triage scale is suggested to improve emergency care quality and operational standards of ED.

In 2009, Ministry of Health of Turkey mandated a three-level emergency triage scale coded with colors red, yellow and green in a descending sequence of acuity.

Since, the triage rules should be linked to investigation and care plans, this study was conducted to assess the reliability and validity of the national mandatory three-level emergency triage instrument.

METHODS

The study was conducted in the ED of a tertiary academic hospital between January 1 and February 29, 2012, prospectively. One patient in every seven presenting to ED was eligible.

The triage instrument consists of 46 items allocating patients to red, yellow and green codes according to their complaints, vital signs and clinical presentations.

To assess reliability; two investigators (E.E, E.Y) blinded to paramedic's triage, reviewed patients individually and assigned to acuity levels. When they disagree, an expert (M.P) was asked to evaluate patients' records. The expert's assignment was assumed to be the "standart reference".

The instrument's validity was measured by length of ED stay, admission rates, in-hospital mortality, ED resource utilization and lifesaving intervention.

Reliability was calculated by using interrater agreement method with weighted kappa analysis. Undertriage and overtriage rates were also calculated. Chi-square test and Kruskal-Wallis test, where appropriate, were used to compare variables in each triage level. Data were analyzed by MedCalc® 11.3.0 (MedCalc Turkey Software, Ankara, Turkey).

RESULTS

A total of 618 patients were assigned to either red (n=126, 20.4 %), yellow (n=352, 57 %) or green (n=140, 22.7%) by acuity level at triage. Three hundred and six (49.5 %) patients were men, 96 (15.5%) were admitted to hospital and 17 (2.8%) died in hospital.

In this study, the triage scale demonstrated "good reliability" with a weighted kappa value of 0.66 (%95 CI :0.60-0.71). Over and under triage rates were 66(10.67 %) and 68 (11%), respectively.

Length of ED stay ($p<0.0001$) and proportions of admitted patients ($p<0.0001$) were significantly different in each code according to acuity level.

Parameters of resource utilization including laboratory, imaging, medication, intervention and specialty consultation were strongly associated with triage acuity level separately ($p<0.0001$ for each).

Compared with yellow and green patients, OR for in-hospital mortality of red level was 10.0 (95% CI: 3.2-31.3 $p=0.0001$) and 33.4 (%95CI: 1.9 - 568.3 $p=0.015$), respectively.

Sensitivity, specificity, PPV and NPV were calculated as 89.5 % (95% CI: 66.9-98.7 %), 81.8 % (95% CI: 78.5- 84.8 %), 13.5 % (95% CI: 8.1-20.7 %) and 99.6 % (95% CI: 98.5-100) in sequence, for immediate lifesaving intervention, for red level.

CONCLUSION

This study demonstrates good reliability of Ministry of Health of Turkey's mandatory three- level triage instrument. Significant association has also been observed between acuity levels and validity parameters measured in the study. Nevertheless, because of its nationwide use, further research is warranted in different levels of emergency care in Turkey.

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Rez de Jardin poster area

REDUCING WAITING TIME FOR P3 PATIENTS AT THE SINGAPORE GENERAL HOSPITAL EMERGENCY DEPARTMENT

Jean Lee, Annitha Annathurai, Cheah Si Oon

Emergency department, Singapore General Hospital, Singapore, Singapore

Corresponding author: jeanmhlee@yahoo.com.sg

Keywords: waiting time, ambulatory, consult

Aim -

To reduce median waiting time to Dept of Emergency Medicine (DEM) doctor consultation for P3 patients from a median of 38mins to less than 30mins.

Abstract -

Long waiting time to see the doctor may delay diagnosis and treatment, hence compromising care for the patients. At the DEM, patients are triaged by acuity (P1 – Most acute, P4 – Non-emergency). Pre-intervention, the baseline waiting Time to Consultation is 38mins and falls short of the target of 30mins set by Ministry of Health (MOH). Increase in workload and patient expectations has made waiting time a constant challenge for all EDs nationwide. The need to reduce waiting time at ED is also reflected in MOH Customers Satisfaction Survey and Employee Engagement Survey. A multidisciplinary team consisting of medical, nursing and operational staff was formed to embark on this project.

Methods

Long waiting time to doctor consultation at Emergency Department may delay diagnosis and treatment, hence compromising care for the patient. Patients arriving at A&E are likely to expect immediate care and attention, therefore long waiting time can be very distressful and frustrating. Structured improvement methodology, DMAIC (Define – Measure – Analyse – Improve – Control) was used. During Define phase, a multi-disciplinary team with the sponsorship of the Clinical Head of Department, was formed. Measurement of the problem was done using existing reports to form the baseline. In the analyse phase, the root causes of the problem was identified using the Fishbone diagram and prioritised using a priority matrix based on effectiveness and ease of implementation.

The solutions were:

- 1 Add 1 more PC in consultation room for nursing action – Relieve the crowd in consultation room A2 by nurses using computer and increase nurses efficiency
- 2 Card allocation at P3 Area – Allocate patient cards equally to each doctor by P3 nurses
- 3 Introduce a new instruction form with standard format for nurses action given by the doctor after a patient is seen– More organized and reduces double clarification due to unclear instructions
- 4 Collaborate with Health Promotion Board to put up an A&E poster - to increase awareness of proper use of A&E

Results

- 1) Lower median waiting time from 38mins to 34.5mins

Tangible benefits

- 1) Patients' satisfaction level is increased due to faster treatment.
- 2) Increase staff morale through better allocation of workload.
- 3) Fairness in patients' card distribution among medical officers.
- 4) Team members gain knowledge on QI tools and knowledge.
- 5) Better accountability towards patients

Conclusion

Long waiting time at the Accident & Emergency may delay diagnosis and treatment, hence compromising care for the patient. With a shorter waiting time, patient care and safety are enhanced and patient and relatives satisfaction is also improved.

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Rez de Jardin poster area

NEW SOLUTIONS TO AN OLD PROBLEM. HOW TO AVOID HEMOLYZED SPECIMENS, A MAJOR DETERMINANT OF DIAGNOSTIC ERRORS AND OVERCROWDING FOR EMERGENCY DEPARTMENTS.

Gianfranco Cervellin (1), Giuseppe Lippi (2)

1. Emergency Department, Academic Hospital of Parma, Parma, Italy
2. Laboratory medicine, Academic Hospital of Parma, Parma, Italy

Corresponding author: gcervellin@ao.pr.it

Keywords: hemolysis, hemolytic specimens, overcrowding

The term hemolysis designates the pathological process of breakdown of red blood cells in blood. Hemolyzed specimens are a rather frequent occurrence in laboratory practice, and the rate of hemolysis is remarkably higher in specimens obtained in the Emergency Department (ED) as compared with other wards. Although hemolyzed specimens might reflect the presence of hemolytic anemia, in most cases they might be due to preanalytical sources related to inappropriate or mishandled techniques for collection, handling and storage of the samples. Blood drawing is indeed the prevailing cause of in vitro hemolysis, which may be further worsened by the increased and prolonged fluid shear stress on blood caused by the vacuum of primary blood collection tubes, thus ultimately enhancing the risk of erythrocyte injury. The vacuum of primary blood tubes is another aspect that has been occasionally associated with a higher chance of obtaining unsuitable specimens, so that the use of traditional syringes is still regarded as a viable alternative in certain circumstances, especially in those patients with small and fragile veins, in whom the ability to control the pressure being applied inside the vein would reduce physical stress to the blood. As such, the use of disposals that mitigate the physical stress of blood while preserving operator safety are strongly advisable. Nevertheless, the use of intravenous catheters is almost unavoidable in the ED and other short stay or procedural units, wherein nurses frequently draw the blood from newly established intravenous lines because this practice is faster and more convenient than searching for another venipuncture site. In a recent critical review of the literature, it has been reported that spurious hemolysis occurs in 3.3 to 77% of blood samples obtained through intravenous catheters, whereas the frequency is nearly 20 times lower when blood specimens are drawn by direct venipuncture. Since hemolyzed specimens are often an important cause of relational, economical, organizational as well as clinical problems between the ED and the clinical laboratory, it is thereby essential to implement a reliable approach for systematically identifying unsuitable specimens (e.g., by using the hemolysis index), differentiate in vitro from in vivo hemolysis, troubleshoot the potential causes, and establish a suitable and joined policy between the laboratory and the ED for the appropriate collection and handling of specimens and the management of test results. The basic assumption underlying the management of unsuitable specimens is that spurious hemolysis is preventable in most circumstances and is traditionally caused by the inappropriate collection, handling, processing, or storage of specimens. A variety of "manual" factors, including practice/skill of blood drawing and proficiency of the nursing staff in phlebotomy, have a strong influence on the quality of the specimen. Dissemination of indications, recommendations, or guidelines regarding the procedure for collecting specimens is therefore essential, along with a deep knowledge of the accepted criteria for accepting or refusing a specimen, because the processing unsuitable samples can produce

spurious data and biased results that could finally have a negative impact on patient care. We will present an innovative method of drawing blood using a new device that combines “vacuum” and “aspiration” mode, and which is capable to aspirate blood with a remarkable reduction of shear stress and erythrocyte injury. The results of our experiments, obtained both in “laboratory controlled” environment, and in the “real world” of an ED, attest a significant reduction in the percentage of hemolytic specimens, approaching a “near-zero” target as compared with a nearly 30% rate of hemolyzed specimens using traditional evacuated blood tubes.

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DISCRETE EVENT SIMULATION MODELING OF PATIENT FLOW IN A NEW ED

Diederik Van Sassenbroeck (1), Adriaan Vanhorenbeek (2), Paul Calle (1), Liliane Pintelon (2)

1. Emergency Department, AZ Maria Middelaes, Gent, Belgium
2. Centre for Industrial Management / Traffic & Infrastructure, University of Leuven, Leuven, Belgium

Corresponding author: diederik.vansassenbroeck@azmmsj.be

Keywords: discrete event simulation, patient flow, crowding

Crowding has been the most important organisational problem of emergency departments (EDs) worldwide. EDs have reacted by adding capacity and streamlining processes both in the ED and in the hospital. The success rates of these measures vary and are dependent on local circumstances. Before introducing new measures, it may therefore be useful to perform ‘pretrials’ by means of computer models representing the local situation. Our current ED also faces the challenges of crowding with boarding being the main contributor to a long length of stay (LOS). Furthermore, we are moving to a new ED in 2015 with less treating positions while there is a steady increase in the yearly number of patients. It has therefore become clear that hospital-wide changes are needed. The aim of the study was to build a discrete event simulation model for patient flow in the future ED based on present data of patient volumes and the time needed for different ED processes. A model representing patient flow in the new ED was build using Arena Software (Rockwell Software, Sewickly, PA). It allows to add what-if scenarios. In the basic scenario (Sc1) patients are separated in those needing an ED bed (66%) and those which can be seated in the ED (34%). As the study aimed to predict the momentary number of ED patients in need of a bed and their LOS, the patients who could be seated were excluded from further analysis. The number of available ED beds in Sc1 was 10. This number increased to 14 in Sc2 when 4 observation beds were changed to normal ED beds. In Sc3, transfers from other hospitals to ours bypassed the ED and go directly to the ICU, i.e. 6% of the current ED population. In Sc4 the boarding time was restricted to 1 hour and in Sc5

10% of the patients were admitted to the ward without full accomplishment of diagnostics or treatment. The inputs in the model are the available ED beds in the new ED, the predicted number of patients, their distribution over the day and their LOS. The number of patients per day is based on a projected yearly increase of + 2.5%. To get an estimate of the interval times of different actions which contribute to the total LOS, a database was constructed between August and November 2011. It allows to document in great detail the ED stay of an individual patient through the collection of 64 different time points. These data have been collected for 799 patients, namely for every 8th patient presenting to the ED, allowing to reflect the true distribution of the patients through the day. Different aspects of ED evaluation and treatment are grouped into 4 processes: first assessment, diagnostics, treatment and boarding time. For these 4 processes the interval times were derived from the database and this information was converted to distributions that stochastically determine the duration of the discrete events in the simulation. For the validation of the model Sc1 was used. The number of available beds was set at 19 as in the current ED, and the number of patients at 52/day as in 2011. The predicted LOS of 1333 modelled patients was not statistically different from the measured LOS of 583 observed patients in the database for whom a total LOS was available (Mann Whitney U, $P < 0.05$, SPSS Inc, Chicago, IL). The incremental application of the 5 scenarios reduced the number of days without a free ED bed upon arrival of a new patient from 95% (Sc1) to 23% (Sc5). The number of patients for whom no ED bed was available upon arrival decreased from 31% (Sc1) to 3% (Sc5). The mean waiting time (h:min) to get a free bed decreased from 1:09 ± 0:09 (mean ± SD) (Sc1) to less than 1 minute (Sc5). The LOS decreased from 7:27 (4:27 – 11:42) to 2:47 (1:35 – 4:28) (median, IQR). This modelling study shows that the combination of different scenarios namely adding beds by swapping observation beds to treatment beds, bypassing the ED for patients transferred from other hospitals, restricting the boarding time to one hour and limiting the diagnostic time in the ED, improves ED admission capacity and shortens LOS. This implies however that additional admission capacity has to be created in the wards or in a separate observation unit and that logistic processes in the hospital will have to be accelerated.

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Rez de Jardin poster area

A WORK SAMPLING AND ERGONOMICS INTERVENTION TO IMPROVE EMERGENCY PHYSICIAN PRODUCTIVITY

Bijon Das (1), Biman Das (2), Paul Leiber (3)

1. Emergency Department, QEII Health Sciences Center, Halifax, Nova Scotia, Canada
2. Department of Industrial Engineering, Dalhousie University, Halifax, Nova Scotia, Canada
3. Institute of Ergonomics, Technical University of Munich, Munich, Germany

Corresponding author: bijon_das@hotmail.com

Keywords: Workplace Productivity, Work Sampling, Ergonomics

Abstract: With the objective of improving workplace productivity of an emergency physician, a work sampling study and ergonomics intervention were performed. The purpose of the work sampling study was to determine the activities, location and time spent in performing various activities by an emergency physician. Work sampling methodology was used in preference to time study, since the tasks performed by the emergency physicians may be repeated infrequently, or at irregular time intervals. Furthermore, work sampling is more cost-effective, because more than one emergency physician can be studied at the same time. Eighteen work shifts of varying duration were observed. The overall number of samples drawn was 2,587. The time spent observing the physician's activities was 91 hours. Emergency physicians spend about 27% of their time in direct patient care and about 73% on indirect patient care. The time spent in locations was recorded as: 28% at physician's workstation or seated desk, 27% at treatment areas and 4% at trauma/resuscitation rooms. Work sampling study results compared favorably with the time study results found in the literature. It should be recognized that the physician's workstation affects workplace productivity, health, comfort and satisfaction. From an ergonomics viewpoint, working posture, physical discomfort lighting and noise work environment are of major concern. Based on a subsequent ergonomics intervention and redesign of the workstation through the application of engineering anthropometry, it would be possible to deal with the physician's working posture and physical discomfort. A sit-stand workstation is considered ideal from an ergonomics viewpoint, because it allows the flexibility to change the working posture at will. Several desks with different heights to accommodate different sized persons could be provided or alternatively desk height adjustability could be considered. Improvement of lighting and noise work environment based on established guidelines could be considered. Based on the observations made during the work sampling study and subsequent analysis of the activities performed by the emergency physician, workplace productivity can be improved by following the recommendation stated below: (1) minimize unnecessary interruptions (literature cites 11 interruptions per hour), (2) streamline physicians work movements through multi-tasking, (3) delegate (non-medical) clerical and administrative tasks (4) delegate tasks to resident physicians and non-physicians (registered nurses and paramedics), and (5) achieve a four hour patient disposition time.

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HOW TO MEASURE THE ACTIVITY OF AN EMERGENCY DEPARTMENT?

Alessandra Farina (1), Roberto Rossi (2), Elena Amina Scola (3)

1. emergency Department, Hospital San'Antonio Abate Cantù - HSA Como -, Cantù, Italy

2. Emergency Department, hospital San'Antonio Abate Cantù - HSA Como -, cantù, Italy

3. Emergency Department, Hospital San'Antonio Abate Cantù - HSA Como -, Cantù, Italy

Corresponding author: scola.elena@gmail.com

Keywords: ED overcrowding, NEDOCs, management

The overcrowding of the emergency departments is a well-known reality that has a negative impact on patients, staff and hospital.

The activity of ED has been considered not measurable for years, due to the high complexity and difficulty of predicting it, and to a huge lack of dedicated tools.

To give dignity and tackle this complex phenomenon, it is necessary to measure the activity data and the impact that the overcrowding has on the workflow of an emergency departments.

This article wants to show how can be possible to measure the ED activity and to reorganize it basing on scientific parameters. It can also be kept under strict monitoring, thanks to a dedicated software. All the overcrowding bottlenecks can be found, studied, and solved thanks to a re-engineering of the whole ED management process.

The study was carried out on activity data of the Cantù ED (about 30.000 accesses per year) for the years 2010-2011-2012 particularly taking into account the parameters needed for the application of the NEDOC score, which is a very well known overcrowding score. This allowed us to analyse the trend of the ED overcrowding.

The study has been carried out through a dedicated software, able to trigger the ED datas and to calculate – every 5 minutes in the mentioned 3 years time – the status of the ED and the relevant NEDOCs score. Furthermore, it also allowed us to have a number of other parameters, that could show at 360° the ED activity and situation, such as number of patients, punctual waiting time, average processing time, critical points and bottlenecks, etc.

The application of this retrospective study allowed us to obtain real datas about the ED overcrowding score, that showed us an interesting picture about the overcrowding peaks and gave us a key to understand the reasons behind it.

It was also possible to identify the main critical points and the correlation of these with the diagnosis process and patient care.

With a wide cooperation from the ED staff, based on the analysis' results, the activities of the department have been reorganised, and some correctives have been put in place. All the upcoming benefits have been measured and monitored over the time. Also the ED datas after each reorganization (such as shifts-time exchange, new "fast tracks", revised triage protocol, ...) has been measured, in order to show and analyse the impact of each corrective.

As an example, through the applications of some important process reorganization, the yellow-code waiting time has been reduced of 10%. Even more impressing, the impact of

planned hospital returns (for example, due to the inability to offer immediately the needed services) has been reduced by 53%, through the implementation of an internal specialty booking system. Also the impact of the NEDOCS score itself has been considerable, with a total decrease of about 20%.

To summarize, an objective measurement of the ED activity is possible and desirable, and through a dedicated computer system is also easy-to-implement and with smart results both for the management of the operators' competences and the development of always improving strategies.

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THE EVALUATION OF EMERGENCY MEDICINE ESTABLISHMENT IN THE PROMOTION OF QUALITY INDICES

Reza Aziz Khani, Keihan Golshani, Babak Masoumi
Emergency Department, Isfahan University of Medical Science (IUMS), Islamic Republic of Iran

Corresponding author: bamasoumi@yahoo.com

Keywords: Leaving against medical advice, Emergency medicine speciality, Length of stay

Abstract

Introduction:

There are several valuable qualitative indices in quality improvement program of emergency department. Two of these valuable indices have been considered in the qualitative improvement program of emergency services. One of them is the number of patients who left the emergency ward before completing the diagnostic and therapeutic measures with their personal responsibility. Another index is the length of patients stay in emergency department. In this study, it has been tried to evaluate the effectiveness of emergency medicine establishment in the promotion of quality indices of Al-Zahra hospital emergency department through these two valuable indices.

Materials and Methods:

This study is a descriptive analytical retrospective research which includes the patients who came to the Emergency ward of Al-zahra hospital in July 2009 and others who came in July 2010, and these two groups were compared. It should be considered that in July 2009 the emergency medicine speciality was not established but in July 2010 it has been established. The Evaluation criteria includes two indices: discharge against medical advice and length of stay in emergency ward.

Results:

In this study, 680 patients were studied based on the obtained results, leaving ED against medical advice after the establishment of emergency medicine speciality has been significantly decreased. However, the length of stay has been increased.

Discussion and conclusion:

There are some reasons to decrease discharge against medical advice and increase patients' satisfaction, which are as follows: The existence of emergency medicine speciality in the ED, The direct and active participation of specialists, The appropriate management of personnel and other physicians, The reduction in the number of patients of other specialized services, The appropriate behavior with patients and placing a person as the patients medical decision maker in emergency ward. However, The length of stay in emergency ward has been increased due to the increase of number of patients in emergency department, the reduction of discharge against medical advice and lack of beds in other wards of hospital.

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PATIENTS ADMITTED TO OBSERVATION UNIT CAN THEY MEET A QUALIFICATION IN INTENSIVE CARE AND WHAT ARE THE POSSIBLE FINANCIAL VALUATIONS?

Cécile Boyeau-desmarres (1), Corinne Roy (1), Pierre-marie Roy (1)

1. Emergency department, Centre Hospitalier Universitaire d'Angers, Angers, France

Corresponding author: cboyeau@gmail.com

Keywords: Observation unit, Intensive care, adult emergency department

Aims

Observation Units are required for each emergency service in France since 1995. They take care of a number of patients with significant pathology or with risk land or requiring heavy acts. The intensive care units provide a level of intermediate care between the recovery units and the services of conventional hospitalization.

The Observation Unit in the emergency service of the University Hospital of Angers has 12 beds. Some patients are considered hospitalized administratively in Observation Unit, but stay on a stretcher in the emergency service.

The aim of this study is to define the proportion and characteristics of the patients in the Observation Unit who could qualify for intensive care and a possible financial valuation.

Procedure

A descriptive prospective study was performed on 1000 consecutive patients in University Hospital of Angers. All the patients admitted in emergency unit and then hospitalized administratively in Observation Unit were included.

The primary endpoint was the proportion of hospitalized patients in the Observation Unit who could have qualified for an intensive care unit, based on the criteria of the Public Health Code, in particular, based on the Simplified Acute Physiology Score (SAPS 2). These patients' characteristics

and the possible financial valuation are also investigated, as well as the stays which exceed 24 hours.

Results

A period of 52 days was required to include these 1000 consecutive patients (from November 2011 to January 2012). During this period, 6926 patients were admitted in emergency unit.

A total of 19.2 patients are hospitalized in Observation Unit every day; 43% could qualify to be hospitalized in intensive care (8.3 patients every day): older patients, bearer of complex past history, less likely to return home.

A financial valuation of 160 958 euro could be achieved by the qualification in intensive care for these 1000 patients, more than one million euro during the entire year.

Conclusion

This study shows that a lot of patients in Observation Unit of University Hospital of Angers could qualify for an intensive care unit and the significant financial undervaluation for the Hospital. This is probably the same in many other emergency units. It encourages us to think about functioning and valorization of Observation Units in Hospitals. This could lead to a reflection on Observation Unit compared to intensive care, and the recognition intensive care units of very short duration related to emergency services, that could accommodate patients requiring this type of support.

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Rez de Jardin poster area

AN INNOVATION OF A METHOD FOR EVALUATING OF EMERGENCY DEPARTMENT DESIGN

Keihan Golshani (1), Azadeh Javaherpour (2), Babak Masoumi (1)

1. Emergency Department, Isfahan University of Medical Science (IUMS), Islamic Republic of Iran

2. Management, Manager of safir language School, tehran, Iran, Islamic Republic of

Corresponding author: bamasoumi@yahoo.com

Keywords: Emergency Department, Emergency Design, Structural Design

ABSTRACT:

INTRODUCTION:

Evaluating of emergency department(ED) design is one of the most important issues, in Emergency Field, which has not been paid enough attention, academically or scientifically as much as other subjects. The definition of standard criteria of ED design is heavily associated with overcrowding of ED, poor medical care and consequently over exhausting of staff, as well as the patients. Although many doctors and nurses are not aware of the significant impact of ED design on their daily work, it has been shown to have a substantial influence on patients' and also staffs' lives.

Methods and Materials:

This is a cross-sectional (Descriptive and Analytic) study which has been implemented to evaluate emergency department design of five university hospitals in Isfahan in Iran. A questionnaire has been gathered through a study of emergency texts and articles in emergency journals and references. This questionnaire consists of 163 questions based on 6 different criteria. These criteria focus on the accessibility of ED, the size and spaces of ED, the facilities for patients, the facilities for staff and personals, the privacy of patients and staff.

After validation of these data, they were processed by SPSS program; and based on these data, emergency departments of these hospitals, in spring of 2011, were investigated and compared with each other.

Results:

In this study, five medical university hospitals of Isfahan, including AL Zahra, Noor, Amin, Isabne Maryam and Kashani, were evaluated in terms of structural design of emergency department and the findings were compared with the standards of the questionnaire. After precise analysis, AL Zahra and Amin hospitals had the most standard situation.

Regarding to the criteria of "personnel access to emergency department and its rooms", it can be seen that Isabne Maryam Hospital was at the best and Noor hospital was at the worst situation. Besides, a significant difference between these hospitals in terms of physical design standards in the criteria of "personnel access to emergency department" and its rooms was seen.

The second section was related to size and spaces criteria, the number of rooms and spaces as required in emergency and adjacent relationship of units were investigated in all five hospitals. In Al-Zahra hospital, most positive cases were observed. But significant difference in the results of these hospitals, in this respect, according to Chi - Square test was not observed.

In the Criteria of facilities for patients, the most significant results were seen in Amin hospital with 61.1 %, and the lowest part was occupied by Kashani hospital.

In the criteria of hospital facilities for staff, in Amin hospital the most positive scores has been observed. But, according to Chi - Square test, there was no significant difference in the results of these hospitals, in this respect.

In the field of patients' privacy, in Amin hospital, international standards were applied completely. And Kashani hospital ranked as the lowest.

In the field of personnel privacy, no significant difference was found among these hospitals.

Discussion and recommendation:

According to the obtained results, for understanding the strengths and weaknesses of ED, improving and resolving the weaknesses of ED conditions applying these kinds of questionnaires can be strongly recommended.

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Rez de Jardin poster area

MEASURING THE CULTURE OF SAFETY IN EMERGENCY MEDICINE.

Philippe Leveau (1)

1. Emergency department, Hôpital Nord Deux Sèvres, Thouars, France

Corresponding author: leveauph@wanadoo.fr

Keywords: culture of safety, risk management, cindynics

Introduction: Emergency medicine is a specialty at risk. Few studies have focused on safety in emergency medicine. With a tool validated by independent teams, we measured safety culture in our emergency department.

Method: The tool used was derived from the questionnaire Hospital Survey On Patient Safety Culture (HSOPSC), translated and validated by the Coordinating Committee of the Clinical Evaluation and Quality in Aquitaine, with an even modified Likert scale. It was proposed to the entire nursing and medical staff of the emergency pole. For comparisons, the chi-square deviation was used, with a significance level equal to 0.05.

Results: The participation rate was equal to 88%, response rate in 44 issues over than 97%. HSOPSC explores the culture of safety in ten dimensions, each evaluated by 3-6 different issues. This is the overall perception of safety (55% positive response), frequency of reporting adverse events (60%), relationships with supervisors (82%), feedback (59%), teamwork (86%), freedom of expression (67%), not repression of error (49%), human resources (39%), safety management (32%) and teamwork between departments (47%). Paramedics report more AEs than other occupations (p <0.01) and team spirit is more developed for nurses (p <.05).

Conclusion: This first study provides an overview of our safety culture. It shows that the safety culture is not satisfactory. Two dimensions are successful: the expectations and relationships with supervisors and team work in the service. A tool that truly enables declare and share our mistakes without risk of punishment undoubtedly shall improve several dimensions. We are continuing this work with one hand, a survey seeking differences in our values, models, rules or goals in a derived cindynic methodology, and secondly by implementing an anonymous tool.

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DO EMERGENCY PHYSICIANS WORRY ABOUT OCCUPATIONAL HAZARDS ?

Veronique De Gucht (1), Stan Maes (2), Francis Somville (3)

1. Dept. Health Psychology, University of Leiden, The Netherlands, Netherlands

2. Dept. Health Psychology, Dept. Health Psychology, The Netherlands, Netherlands

3. Dept. of Emergency and Traumatology, Erica AZ, Campus Geel & Mol, Geel, Belgium

Corresponding author: francissom@hotmail.com

Keywords: physical hazards in the workplace, psychosocial hazards in the workplace, Occupational hazards

OBJECTIVES:

Emergency healthcare workers are exposed to a wide range of physical and psychosocial risks / hazards in the workplace. The aim of this study was to investigate to what extent Emergency Physicians (EP's) are confronted with and concerned about these hazards.

METHODS:

Based on a review on occupational hazards in emergency physicians (Dorevitch & Frost) , a questionnaire was constructed. The questionnaire consisted of socio-demographics (age, gender, seniority, occupation) and questions on the exposure to , the occurrence of , risk perception of and worry about the following occupational hazards : Infectious disease (blood borne pathogens; hepatitis B; hepatitis C; hepatitis non A - non B; human immunodeficiency virus (HIV); mycobacterium tuberculosis); physical hazards (latex allergy; radiation exposure; nitrous oxide); violence at work ; stressful work situations that can cause burnout. A total of 346 questionnaires were distributed to emergency physicians during two national emergency medicine conferences in Belgium.

RESULTS:

Of 346 surveys questionnaires that were handed out, 150 were returned and usable. Of the respondents 47% reported to be confronted with violence and 53 % to suffer from health problems related to their work. The exposure to , occurrence of , risk perception of occupational hazards and worry about these hazards are high for EP's.

CONCLUSION:

Exposure to and perceived risk of physical hazards, violence and burn out is high in EP's. Especially worry about violence and burnout are high in EP's .

Key words: Physical hazards, Psychosocial hazards, Occupational hazards

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Rez de Jardin poster area

"ULTRASOUND GUIDED FASCIA ILIAC BLOCK IN THE HANDS OF ED PHYSICIANS", A REVIEW OF THE LITERATURE.

M Azam Majeed (1), David Yeo (2)

1. Emergency department, University Hospitals, Birmingham., Birmingham, United Kingdom

2. emergency department, university Hospitals, Birmingham., birmingham, United Kingdom

Corresponding author: mazammajeed@hotmail.com

Keywords: Fascia Iliac Block, Emergency Department, Ultrasound guided

Background:

Fractured neck of femur (NOF) is a serious consequence of falls among the elderly population. It is projected that in

the United Kingdom alone the incidence of fractured NOF will rise from the current figures of 70,000 per year to 91,500 by 2015 and to 101,000 in 2020. About 10% of people with hip fracture die within 1 month. However, fewer than half of the deaths are directly attributable to the fracture. The high prevalence of co morbidity in this group presents major challenges in the patient's pre and post-operative care. Studies that have looked at the delivery of analgesia in the emergency department (ED) have consistently shown that delayed and sub-therapeutic pain relief remains a problem.

Objective:

To determine the effect of fascia iliaca block, on pain relief, in patients with fractured femur (neck, shaft).

Method:

We did the literature search and found 11 papers to be relevant to our question.

Results:

We had 3 RCTs and 8 prospective cohort studies. There were total 930 patients and pain relief was assessed between 15 minutes to 24 hrs. They also assessed the need for further analgesia (morphine). They were conducted in theaters and EDs. Total 804 patients were tested for FIB in all studies. The RCTS showed significant pain relief, in patients with FIB, up to 180 minutes (p=0.01).

Discussion:

We have traditionally been using opiates for severe pain but they don't come without side effects, especially the elderly group takes most of the blow. As discussed above, NOF fracture make a significant number of patients presenting to ED. Therefore having a non opiates based pain relief like FIB, makes it very useful. The above papers suggest a beneficial role of ultrasound guided FIB in femoral fractures either as an alternative or adjunct to the routinely used analgesia. Evidence suggests that the placement of local anaesthetic in the wrong plane will reduce the success of any regional anaesthetic technique¹¹.

The use of ultrasound guidance will permit the identification of the fascia iliaca and neurovascular bundle. It will also provide help in the needle guidance and direct observation of local anaesthetic spread in real time. Therefore the chances of effective block are extremely high when done under ultrasound guidance.

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Rez de Jardin poster area

TRANSFER OF PATIENTS IN AN EMERGENCY DEPARTMENT

Isabel Hernández Hernández (1), Daniela Rosillo Castro (2), José Andrés Sánchez Nicolás (3), Raquel Navarro Valverde (1), Lucia Pardo Romera (1), Nuria Nuria Pérez Alonso (1)

1. Emergency department, Hospital General Universitario Reina Sofía, Murcia, Spain

2. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

3. Emergency department, Hospital General Universitario Reina Sofía de Murcia, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: Transfer of patients, Prehospital service, Emergency Department

OBJECTIVES: The transfer of patients is defined as "the communication between health professionals in transmitting clinical information from a patient." The aim of our study was to determine the perception that health staff our emergency department with transfer of patients for prehospital emergency services, seeking to create a protocol for the process and thus improve

METHODOLOGY: The used 20-question Likert-type scale to assess respondents' subjective criteria and sociodemographic data. SPSS18 program was used for data analysis.

RESULTS: 86 surveys were collected (almost all of the service). Resident physicians 38.4%, 33.7% nurses and 27.9% doctor. 45.3% were over 10 years of work experience and 27.9% over 10 years in the Emergency department. 46.5% were aware of the concept of transference, 31.4% did not know his name. A 81.4% had not received training to do it. 57% had learned from colleagues and only 5.8% per course. With respect to the 5 most important factors to receive, Vital Signs, reason consultation, treatment administered, patient data and examination. The 5 least important: Signature of phisician, time attendance, therapeutic approach, techniques performed and readable story. 95.3% did not know transfer protocols. Regarding its realization in our area: 27.9% very satisfied, 34.9% somewhat, 21.9% and 5.8% bit nothing. About time used: 43% somewhat satisfied. 45.30% used between 1-5 minutes and 34.9% the necessary. Under conditions where patients arrive: 0% very satisfied, 48.8% somewhat, 25.6% little, 15.1% quite, 10.5% nothing. 27.9% report that brings more verbal information written, 23.3% both equally, and 37.2% depending on the giver. 47.7% felt that the information received is quite concordant with the actual situation of the patient and 40.7% believe that sometimes. When asked whether the information received affects the initial patient management: 10.5% always, 57% quite, 29.1% sometimes. The 55.8% always transfer considered useful, 36% fairly. On the need to establish a transfer protocol service 97% of respondents agreed.

Conclusions: Over 75% of our employees knew the concept of transference. But only 2 out of 10 had received training. Half had learned from other colleagues. Despite the global existence of multiple protocols, 9 out of 10 the unknown. Although the transfer protocols recommend 30 seconds, half used between 1 and 5 minutes. Half is somewhat satisfied with how patients arrive and consider the information received quite correct. This significant influence on the initial management in 6 out of 10 professionals. Almost 100% of respondents would be in favor of establishing a transfer protocol service.

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Rez de Jardin poster area

IMPACT OF INITIAL HOSPITAL TRIAGE ON MAKING THERAPEUTIC DECISIONS AND HOSPITAL ADMISSION. CONDUCTED IN THE EMERGENCY DEPARTMENT- WROCLAW MEDICAL UNIVERSITY HOSPITAL.

Goutam Chourasia (1), Juliusz Jakubaszko (2), Janusz Sokolowski (3)

1. Emergency Department, Wroclaw Medical University, Wroclaw, Poland

2. emergency Department, wroclaw medical University, Wroclaw, Poland

3. Emergency Department, Wroclaw medical University, wroclaw, Poland

Corresponding author: sokolow@wp.pl

Keywords: triage, overtriage, undertriage

Triage is an essential tool in Emergency Departments (EDs), where many patients may present simultaneously. Triage aims to ensure that patients are treated in the order of their clinical urgency and that their treatment is appropriately timely. It also allows for allocation of the patient to the most appropriate treatment area.

That initial triage of patients occur within 10 minutes of arrival and must include vital signs. Effective triage is based on the knowledge, skills and attitudes of the triage nurse.

The aims of this study was to evaluate: (1) the effect of triage on actual clinical needs support, (2) impact of triage on initiation of rescue procedures and duration of stay in the E.D., (3) percentage of overtriage.

In the ED of Wroclaw Medical University, according to clinical conditions, patients are divide into four colour groups: (1) red –urgent, life threatening condition, (2) yellow – urgent, patient need help within 15 minutes, (3) green – nonurgent, patient need help in 45 minutes, (4) blue – patient doesn't need treatment in ED.

Patient and methods: This retrospective study performed from 01.01.2012 to 31.12.2012. During this period 25396 patients above 18 years were admitted in the ED;

48% were males, 52% were females. 5% of patients was qualified as red, 10% as yellow, 65% as green, 20% as blue.

Among this patients: 100% of red were admitted to hospital, 60% of yellow, and 30% of green. Initiation time of the treatment was: 5 minutes in red group, among 15% of yellow time was delayed to 30 minutes, in 25% of green patients time was delayed > 60 minutes; 5% of yellow pts was overtriaged to red group.

Results: Our Triage protocol, based on MTS, allows on: Rapid identification of life-threatening conditions, prioritization of urgent clinical conditions, Appropriate patient allocation to the different appropriate areas of the ED, which leads to rapid and appropriate implementation of clinical rescue procedures.

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Rez de Jardin poster area

DOES THE SPLIT FLOW ED MODEL DECREASE WAITING TIME AND LENGTH OF STAY?

Afrah Ali (1), Eelaf El Hassan (1), Muzammil Mirza (1), Kathleen Van Effen (1), Murray Van Dyke (1), Robert Hoffman (2)

1. Emergency Services Institute, Sheikh Khalifa Medical City, Abu Dhabi, United Arab Emirates

2. Emergency Medicine, Albert Einstein College of Medicine, Bronx, United States

Corresponding author: rjhoffmanmd@gmail.com

Keywords: triage, waiting time, length of stay

Introduction

One of the major challenges facing Emergency Medicine is pressure to increase patient satisfaction by reducing waiting and through-put times while maintaining or improving patient safety. A "split flow" model incorporates rapid triage for less ill, ambulatory patients, while keeping them in internal waiting rooms when necessary. Use of internal waiting rooms maximizes the number of patients that can be treated with a given number of beds. A split flow process was implemented in our institution in August 2012.

Methods

This study was conducted in the ED of a large, urban, academic tertiary care center in the United Arab Emirates with 103,000 patient visits annually. Consultants in this ED are all emergency physicians board certified in the US, Canada, UK, or Australia. This ED uses the Emergency Severity Index (ESI) triage scoring (1-most severe, 5-routine, non-emergent). The null hypothesis was that implementation of a split flow process would have no change or would increase patient waiting time and length of stay. Data to test this hypothesis was extracted from an electronic medical record (EMR). Data was extracted by a single investigator. Data points included time of registration, time until seen by physician, length of stay, triage category, disposition (admitted, discharged, left without being seen, left against medical advice).

The primary outcome of interest was change in time from patient registration to being initially seen by a by a physician for ESI triage level 2,3,4, and 5 patients (door to doctor time). ESI 1 are not evaluated in this study because they are seen immediately and documentation occurs retrospectively. A secondary outcome measure evaluated was length of stay from patient registration to disposition. Data was analyzed using Stata 12IC (College Station, Texas). Statistical analysis using a t-test for each before and after data point was performed, using an alpha of 0.05 and beta of 0.2, and a 95% confidence interval for each data point was calculated.

Results

A statistically and clinically significant difference in all outcome variables was noted, with all p values <0.0001. Waiting time for ESI 5,4,3,2 all decreased: In minutes:seconds, the decrease in each category respectively was (ESI5)9:49, (ESI4)11:26, (ESI 3) 15:02, (ESI3) 6:22, respectively. Length of stay also decreased in

each group: In minutes:seconds these were (ESI5)21:06, (ESI4)28:31, (ESI3)58:37, and (ESI2)26:00, respectively.

Conclusion:

Split flow process implementation in our ED was associated with decrease in waiting times for all acuity levels measured, as well as decreased length of stay for all acuity levels measured.

ED administrators should consider implementing a split flow model to decrease waiting times and increase throughput. A split flow process may have significant impact on numerous outcomes not addressed in this study, including decreasing of: time to diagnosis; time to treatment for specific diagnoses such as pneumonia, appendicitis, and others; time to admission; and hospital length of stay. There is also potential to decrease patient complaints, decrease patient walkouts, increase patient satisfaction and increase profitability.

The effect of implementing a split flow process is expected to be institution-dependent, but these results in our institution were very positive.

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Rez de Jardin poster area

USE OF A SPLIT FLOW ED MODEL IMPROVES QUALITY MEASURES OF WAITING TIME AND PATIENT WALKOUTS

Eelaf El Hassan (1), Afrah Ali (1), Muzammil Mirza (1), Nagma Al Mashjary (1), Glyn Barnett (1), Murray Van Dyke (1), Kathleen Van Effen (1), Robert Hoffman (1,2)

1. Emergency Services Institute, Sheikh Khalifa Medical City, Abu Dhabi, United Arab Emirates

2. Emergency Medicine, Albert Einstein College of Medicine, Bronx, United States

Corresponding author: rjhoffmanmd@gmail.com

Keywords: triage, quality improvement, walkout

Introduction

One of the major challenges facing Emergency Medicine is pressure to increase patient satisfaction by reducing waiting and through-put times while maintaining or improving patient safety. A "split flow" model incorporates rapid triage for less ill, ambulatory patients, while keeping them in internal waiting rooms when necessary. Use of internal waiting rooms maximizes the number of patients that can be treated with a given number of beds. In our institution key performance indicators used to evaluate quality of ED service include patient waiting time less than 45 minutes and rate of patients leaving the ED without being seen. A split flow process may potentially lower waiting times and secondarily lower walkout rates of patients leaving the ED without being seen by a physician. A split flow process was implemented in our institution in August 2012. We sought to evaluate the effect this implementation on achievement of performance indicators.

Methods

This study was conducted in the ED of a large, urban, academic tertiary care center in the United Arab Emirates. Consultants in this ED are all emergency physicians board certified in the US, Canada, UK, or Australia. This ED uses the Emergency Severity Index (ESI) triage scoring (1-most severe, 5- routine, non-emergent). The null hypothesis was that implementation of a split flow process would have no effect on or would decrease the percentage of patients for whom key performance indicators of time to being seen was achieved. A secondary outcome measure of patients who left without being seen was also assessed. Data to test this hypothesis was extracted from an electronic medical record (EMR). Data was extracted by a single investigator. Data points included time or registration, time until seen by physician, length of stay, triage category, disposition (admitted, discharged, left without being seen, left against medical advice).

The primary outcome of interest was change in percentage of patients in ESI triage category 2,3,4,5 being seen by a physician less than 45 after registration time, as well as patients who are seen by a physician immediately (less than 5 minutes after registration) and patients seen by a physician less than 60 minutes after registration. ESI 1 are not evaluated in this study because they are seen immediately and charting is done retrospectively. A secondary outcome variable was percentage of patients leaving the ED without being seen.

Data was analyzed using Stata 12 (College Station, Texas). Statistical analysis using a t-test for each before and after data point was performed, using an alpha of 0.05 and beta of 0.2, and a 95% confidence interval for each data point was calculated.

Results

A statistically and clinically significant difference in all outcome variables was noted. Percentage of patients seen at key intervals after registration for ESI 5,4,3,2 patients before and after the split flow process were as follows. ESI5 seen in: less than 45 minutes: 81.66% before, 93% after; less than 60 minutes: 83.75% before, 92.27% after; and ESI5 seen immediately 22.64% before, 28.08% after. For ESI4, seen in: less than 45 minutes 77.95% before, 91.42% after; less than 60 minutes: 86.73% before, 95.94% after; and ESI4 seen immediately 17.38% before, 25.82% after. For ESI3 seen in: less than 45 minutes, 35.85% before, 88.58% after; in less than 60 minutes, 41.12% before, 94.16% after; and ESI3 seen immediately were 3.95% before, 24.3% after. For ESI2 seen in: less than 45 minutes, 91.36% before, 95.5% after; less than 60 minutes 95.57% before, 97.68% after; and ESI2 seen immediately were 16.98% before, 31.54% after. The percentage of patients who left without being seen decreased from 1.22% before to 0.53% after. Each of these differences are statistically and clinically relevant, with $p < 0.0001$.

Conclusion:

Split flow model implementation in our ED was associated with improvement in quality measures of percentage of patients being seen less than 45 minutes after presentation, and also increased percentage of patients who were seen immediately, and the percentage seen less than one hour after arrival. It was also associated with a decrease in % of patient walkouts from 1.22% of 0.53%.

ED administrators should consider implementing a split flow model to decrease waiting times and increase throughput. A split flow process may have significant impact on numerous outcomes not addressed in this study, including decreasing of: time to diagnosis; time to treatment for specific diagnoses such as pneumonia, appendicitis, and others; time to admission; and hospital length of stay. There is also potential to decrease patient complaints, decrease patient walkouts, increase patient satisfaction and increase profitability. The effect of implementing a split flow process is expected to be institution-dependent, but these results in our institution were very positive.

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Rez de Jardin poster area

MANAGEMENT LIST OF VICTIMS IN DISASTER SITUATIONS - AUDIT OF FRENCH PREHOSPITAL EMERGENCY MEDICAL SERVICE

Sylvain Thiriez (1), Emmanuelle Guerreiro (1), Olivier Tilak (2), Jérôme Sicot (3), Nathalie Assez (3), Eric Wiel (3)

1. Emergency Department, Hôpital Victor Provo - CH Roubaix, ROUBAIX, France
2. Emergency Department, Centre Hospitalier de Douai, Dechy, France
3. Emergency Department, CHRU de Lille, LILLE, France

Corresponding author: sylvain.thiriez@ch-roubaix.fr

Keywords: Disaster Medicine, list of victims, Computerization

Introduction : in collective emergency situation, the Emergency Medical Service (EMS) mission is to organize the medical response from the scene of the disaster to the hospital reception. Fast and accurate counting of victims and the knowledge of their severity status are a major challenge to adapt relief and referral of victims on the one hand, and inform authorities on the other. In France as in main European countries, methodology of development and transmission of victims list is not standardized, each center has its own procedure: paper, spreadsheet software specific, more or less efficient. Objective was to identify the different ways used by french EMS to establish, manage and transmit their list of victims during major events group. **Method :** comparative descriptive study by questionnaire phone interview with officials of the functional unit of disaster medicine in each EMS of Metropolitan France. Descriptive statistics. Creation of EMS sub-groups depending of county population. **Results:** 89 centers responded (response rate 92.7%). The tool mainly used is paper (62%) to computers (37%, half of which specific software). 33% of major centers (MC) are using a specific tool. 68.5% of centers establish a joint list with the Firefighters (77% MC). Transmission of the list is mostly by phone (73%) but the use of the Internet grows especially in MC (33%). Most centers express a desire to

move towards a computerized management list and internet transmission.

Conclusion: Major Center implement specific procedures and efficient establishment, management and transmission of the list of victims while smaller centers remain much less developed systems. Major events affecting large, the evolution towards a standardized disaster management at the regional level seems desirable.

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Rez de Jardin poster area

IMPLEMENTATION OF EMERGENCY SEVERITY INDEX TRIAGE ; A METHOD TO PREVENT AN UNEXPECTED LIFE-SAVING INTERVENTION IN EMERGENCY DEPARTMENT

Jirawat Juengsiragulwit, Sithichai Veerananchai, Vorapin Monchata
Emergency department, Bangkok-Huahin hospital, Prachuabkirikhan, Thailand

Corresponding author: komintern1@hotmail.com

Keywords: Emergency severity index, unexpected life saving intervention, under triage

Background: Emergency Severity Index (ESI) is a five-level triage tool use for prioritize patient in emergency department (ED). ESI level-1 is the worst severity that required life-saving intervention. Under triage patients may have unplanned procedure that bring about delayed and complicated management. We aimed to zero the incident of unexpected life-saving intervention in under triage patient.

Method: Our ED successfully implemented electronic triage record (ESI version 4 with online web application) on July 2012. The instrument collected ESI triage-level, doctor waiting time and ED length of stay of all patients visited at ED during 9-month period. All ESI triage level were compared to actual ED course after patient discharged from ED. The sensitivity and specificity of ESI triage level-1 which required immediate life-saving intervention was calculated. We reviewed medical record of all under triage patients who received life-saving intervention and the incident of unexpected life-saving intervention among under triage patient was calculated.

Results: Of all 9,770 patients who presented to ED, 51(0.5%) were triage as ESI level-1, 199(2%) were triage as ESI level-2, 2,264(23%) were triage as ESI level-3, 2,428(25%) were triage as ESI level-4, 4,828(49.5%) were triage as ESI level-5. After compared to actual ED course 46 patients received life-saving intervention, of these, 4 patients were under triage. The sensitivity and specificity of ESI triage level-1 which required immediate life-saving intervention were 91.30%(95%confidence interval [CI] = 0.79-0.96) and 99.91%(95%confidence interval [CI] = 0.98-0.99). There were 4 in 226 (1.77%) under triage patients required life-saving intervention, 2 of 4 patients had blood

pressure drop during stay in ED and another 2 were under triage by triage operator.

Conclusion: ESI triage level-1 is suitable for Identify patient who required immediate life-saving intervention. The high risk under triage can be corrected by produce more of over triage and well-trained triage operator.

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Rez de Jardin poster area

PHYSICIAN WAITING TIME IN THE EMERGENCY DEPARTMENT: DO PATIENTS HAVE REALISTIC EXPECTATIONS?

Lien Mestdagh (1), Gerlant Van Berlaer (1), Ronald Buyl (2), Ives Hubloue (1)

1. Department of Emergency and Disaster Medicine, Universitair Ziekenhuis Brussel, Brussels, Belgium

2. Department of Biostatistics and Medical Informatics, Vrije Universiteit Brussel, Faculty of Medicine and Pharmacy, Brussels, Belgium

Corresponding author: lien.mestdagh@vub.ac.be

Keywords: Physician Waiting Time, expectations, emergency department

Background: Overcrowding in the Emergency Department is widespread throughout the world. With the increase in the number of patients, waiting times are rising. Patients' experiences of the physician waiting time (PWT) is one of the most important factors determining overall patient satisfaction. Many studies have been done about patient satisfaction and have examined patients' expectations and perceptions about waiting times. The accuracy of patients' perception has been studied, but less is known about how accurate the expectations of patients are when patients present to the Emergency Department.

We wanted to determine whether patients presenting to the Emergency Department (ED) have realistic expectations on the physician waiting time, in comparison to the time estimated as acceptable by the triage team and the real physician waiting time (PWT) and verify if these variables are dependent on features as age, gender, type of complaint, patients' age, education, presence of a caregiver who accompanies the patient and patient load at the time of admission.

Design: A prospective, monocentric, randomized, comparative observational study was done during daytime (9.00 a.m.- 9.00 p.m.) when triage is performed, using the Manchester-triage-system, in a university teaching hospital from October 19th until December 12th 2012. Patients were recruited and interviewed by a single researcher.

Participants: A total of 500 subjects were included. 236 of them were patients, 264 were patients companions. Most respondents were female (n=316). The youngest participant was 16 years old, the senior 90 years.

Results: Most patients (n=258) had expectations regarding PWT that were significantly shorter ($p<0,001$) than was anticipated by the triage team and compared to the real

PWT ($p<0,013$). Patients expectations were not significantly influenced by any variable, except for pediatric patients ($p<0,031$) and if the respondent was not the patient, but his companion or caregiver ($p<0,006$). Real PWT was significantly altered by the patient load at the time of admission ($p<0,001$) and the type of complaint: trauma patients have shorter PWT than medical patients ($p<0,011$). Also the real PWT is significantly shorter in comparison to the time set as goal by the triage doctor ($p<0,001$).

Conclusion: Patients do not have realistic expectations about PWT when presenting to the Emergency Department. Correcting these expectations and taking measures to change patients perceptions about waiting times, may improve patient and companion satisfaction.

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AMBULATORY MANAGEMENT OF EMERGENCY MEDICAL PATIENTS

Mehmet Tarkan Ergene (1), Alex Keough (2), Akbar Soorma (3), Christopher Thom (4)

1. Emergency Department, Maidstone & Tunbridge Wells NHS Trust, Maidstone, United Kingdom

2. Acute Medicine, Maidstone Hospital, Maidstone, United Kingdom

3. Clinical Director for Acute & Emergency Medicine, Maidstone and Tunbridge Wells NHS Trust, Maidstone, United Kingdom

4. Consultant Lead Physician, Maidstone & Tunbridge Wells NHS Trust, Maidstone, United Kingdom

Corresponding author: tarkan.ergene@btinternet.com

Keywords: emergency medical admission, ambulatory unit, bed occupancy

Background:

Maidstone Hospital, like other hospitals in United Kingdom, suffers from very high levels of medical bed occupancy and outlying in surgical wards, with the result that patients are frequently placed on inappropriate wards and (in a specialty-ward aligned system) they receive sub-optimal medical & nursing care and have unnecessarily extended lengths of stay. This also brings pressure to The Emergency Department, especially when flow of patients is slow and medical patients are waiting in A&E for admission.

We decided to tackle this by focussing on the two ends of the in-patient pathway – the front end through developing ambulatory emergency care and the back end through improving efficiency in discharge. We estimated that we were admitting around 4,200 patients per annum who would have been suitable for ambulatory treatment. We therefore developed the concept of UMAU – the Urgent Medical & Ambulatory Unit, bringing together the medical take and ambulatory care in a single unit.

Methods:

UMAU provides a comprehensive environment for the medical take, with two bays of trolleys and the capacity to assess less ill patients in a clinic type setting. While doctors in training are fully involved, early input from a consultant is a key aspect of the service. Our radiology and pathology

departments have committed themselves to prioritising requests from the Unit and have signed up to a challenging set of Key Performance Indicators. We have extensive support from pharmacy, physiotherapy and occupational therapy and Social Services care managers, including at weekends. Whenever possible patients receive a diagnosis and management plan on the day of presentation and may then be sent home. Our ambulatory suite enables us to provide procedures and other treatments without the need for admission, sometimes on the day of presentation and sometimes over subsequent days. Those patients who do require admission are either accommodated in 14 short stay beds on the unit or are transferred to the appropriate speciality ward.

Results:

UMAU has now been open since November 2012, during the busiest season of the year. It has achieved its goals of focussing the medical take in one location, of speeding up the process of diagnosis and management planning and of bringing in consultant review at a much earlier stage. The new environment has been universally welcomed by staff of all disciplines and by patients, especially from A&E. Although we still have a way to go in this, we are beginning to see new groups of patients being managed on an ambulatory basis. We are expecting to see a substantial reduction in medical admissions over the course of 2013.

Conclusion:

The development of UMAU has led to a step change in the quality care provided to emergency medical patients, and has the potential to make a big contribution to resolving our perennial bed problems. In addition, waiting times in Emergency Department for a ward bed are reduced significantly.

Conflict of interest statement:

The authors have no conflict of interests to declare.

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Rez de Jardin poster area

PATIENTS SAFETY CULTURE SURVEY AT THE EMERGENCY DEPARTMENT

Sergio Navarro Gutierrez (1), Jose Ignacio Aguilar Mossi (1), Silvia Castells Juan (1), Luis Manclus Montoya (1), Oscar Martinez Ferris (1), Almudena Lluçh Sastriques (2), Maria Roig Dura (1)

1. Emergency Department, Hospital Universitario de La Ribera, Alzira, Valencia, Spain

2. Emergency Department, Hospital Universitario La Fe, Valencia, Spain

Corresponding author: sergionavarrog@hotmail.com

Keywords: Patients Safety, Survey, Emergency

OBJETIVES

The aim of this study was to evaluate the patients safety culture among staff at the Emergency Department of the Hospital de La Ribera.

METHODS

A voluntary anonymous survey was conducted by doctors, medical residents and nurses working at the Emergency Department of the Hospital Universitario de La Ribera in Alzira (Valencia) Questions asked contained information concerning identification of patients as well as use of bedrails and brakes in beds in our ED.

RESULTS

A vast majority of the ER staff concerns about the presence of bedrails in ER beds, although only one third, always uploads them to avoid falls. Regarding the identification of patients with bracelets, a large majority of the staff cares patients correctly identification.

What we consider devastating is the fact that, according to our survey, one fifth of staff, does not worry at all by the presence of beds braking.

DISCUSSION

After the creation of the Safety and Quality Management Group different activities have been established to assess the patients safety culture of the Emergency Department staff. We keep on trying to identify areas for improvement in specific topics such as patient identification and prevention of falls

Regular information meetings and the implementation of specific protocols may have a key role in risks prevention and might lower the incidence of near misses as well as minor and major incidents.

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Rez de Jardin poster area

RAPID ASSESSMENT AND TREATMENT (RAT) BY ADVANCED NURSE PRACTITIONERS IN THE ED

Alan Doyle (1), Joe Kelly (1), John Ryan (2), Nigel Salter (2)

1. Emergency Department, St Vincent's University Hospital, Dublin, Ireland

2. Emergency department, St Vincent's University Hospital, Dublin, Ireland

Corresponding author: N.Salter@st-vincents.ie

Keywords: Rapid assessment and treatment (RAT), Advanced nurse Practitioner (ANP), Unscheduled returns

Introduction

The role of the advanced nurse practitioner (ANP) has increasingly become part of mainstream healthcare delivery in Emergency Departments for Ireland and the UK.1 Nurse practitioners in the ED have been shown to be able to provide care leading to high levels of patient satisfaction, with no significant differences in patient health outcomes when compared with care from a doctor.2 Much of the published dataset relating to Emergency nurse practitioner activity documents a majority casemix involving minor injuries triaged as level 4 and 5.3 A reduction in waiting times and lessening of overcrowding by the introduction of ANPs to treat these low complexity ED patients was anticipated; however, these low-complexity ED patients

have now been shown to be associated with a negligible increase in ED length of stay and time to first physician contact for other ED patients.⁴

The establishment of rapid assessment teams, consisting of a doctor and triage nurse have been shown to reduce waiting times relative to triage category.⁵ This "team triage" strategy traditionally lead by a middle grade or ED consultant as well as reducing time to see a doctor can also significantly reduce time to radiology and time to discharge.⁶ Furthermore by reducing waiting times these rapid assessment and treatment strategies have been shown to reduce the overall ED length of stay for both admitted and discharged patients, as well as reducing the percentage of patients who leave without being seen.⁷

In optimising patient flow strategies and human resources a Rapid Assessment and Treatment ANP service was established in our ED. The ANP candidate cohort of patients includes shortness of breath or pleuritic chest pain (not cardiac chest pain), abdominal pain/flank pain; suspected DVT, hip injury; sore throat and mental health complaints. A key indicator of effectiveness and safety of a patient's treatment is the return rate to the ED for that patient cohort.⁸ The aim of this study is to assess the safety and efficacy of an advanced nurse practitioner lead rapid assessment and treatment service in an Emergency Department by looking at the rate of unscheduled return visits to the ED for these patients.

Methods

This study was conducted in the Emergency department of St Vincent's University Hospital, an academic teaching centre in Dublin which sees over 40,000 new attendances a year. A retrospective chart review was conducted of all patients seen by the Rapid Assessment and Treatment (RAT) ANP over a 12 month period who returned to the ED within 30 days. The primary outcome measure was the 30 day unscheduled return rate to the ED for patients seen and treated by the RAT ANP.

An independent chart review was conducted by two emergency medicine consultants for these unscheduled return visits to assess for any adverse incidents, any new interventions performed, and patient disposition following their return visit.

Results

A total of 1433 new patients were seen and assessed by the RAT ANP over a twelve month period. Other than category one, these patients were assigned Manchester triage categories of: Category 2: 5%, Category 3: 49%, Category 4: 32%, Category 5: 2%. 63% of these new attendances were discharged directly by the RAT ANP.

There was a 30-day unscheduled return rate of 3% recorded (43 patients); this compares to the overall 30-day day return rate for all ED attendances for the same interval of 6% (Mean difference 3%, CI: 2.72-3.28%, p-value<0.001).

Figure 1: Unscheduled return patients and their outcomes

Following the chart review, there were no adverse events identified.

Medication changes included changing antibiotic therapy as there was no improvement in UTI symptoms, increasing analgesia medication, prescribing naseptin for recurrent nose bleed and adding PPI for a patient returning with ongoing discomfort post gastroenteritis. All patients who

were admitted on their second presentation were as a result of progression of their initial diagnosis despite appropriate initial outpatient therapy.

Discussion

In balancing human resources and attempting to improve patient flow in the ED, the establishment of a RAT ANP service is a safe and effective strategy.

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Rez de Jardin poster area

PROCEDURAL SEDATION PRACTICE AMONGST ADULT PATIENTS IN A LONDON EMERGENCY DEPARTMENT

Beth Christian, Edward Heydon, Kate Molnar, Gavin Tunnard, Rosa Weisskopf

ED, Guy's & St Thomas' Hospital London UK, London, United Kingdom

Corresponding author: gavintunnard@yahoo.co.uk

Keywords: Procedural Sedation, Adult, sedation practice

We performed a retrospective annual review of all procedural sedations performed in patients 16 years and above in a tertiary London hospital emergency department. The department has a proforma for all patients undergoing any procedural sedation these were collected and reviewed primarily looking at sedation agent use, procedures performed and complications encountered.

130 patients were identified and analysed - the majority of procedures were orthopaedic on patients ASA 1&2 with a mean recovery time of 38 mins and 4 failed procedures. Complications occurred in 2 patients (hypoventilation in both). Morphine and midazolam were by far the most frequently used drugs of choice

Improvements are needed in the note keeping as much of the analysed forms were incomplete leading to a possibility of there being a higher complication and or failure rate.

Po-475

Rez de Jardin poster area

COMPARISON OF REPORTED MEDICAL ERRORS IN HELSINKI UNIVERSITY CENTRAL HOSPITAL EMERGENCY DEPARTMENT IN YEARS 2011 AND 2012. THE MAJORITY OF EVENTS WAS REPORTED BY NURSES

Tia Sandström (1), Veli-pekka Harjola (2), Kirsi Huttunen (1), Juho Mattila (1), Jukka Tolonen (1)

1. Department of Medicine, Helsinki University Central Hospital, Helsinki, Finland

2. Department of Medicine Division of Emergency, Helsinki University Central Hospital, Helsinki, Finland

Corresponding author: jutolonen@gmail.com

Keywords: Medical error, Emergency, Staff comparison

Background. Risk for medical errors is especially noteworthy in emergency policlinics. In Helsinki District University Hospital Emergency policlinics administrated by Department of Medicine this was demonstrated by us last year. 2011-2012 we have trained our staff to take adverse events into account more easily, and encourage them to use HAIPRO-software.

Material and methods. Data were collected from HAIPRO-database. We analyzed which staf member made adverse event report inrisk classification for adverse events in 5-scale classification (not significant risk = 1, low risk = 2, moderate risk = 3, remarkable risk = 4 and, serious risk = 5). Results. Reported adverse events raised from 434 to 539 in ER 2011-2012.The great majority of events were reported by nurses both in 2011 (383) and 2012 (473). Physicians reported only 22 and 27 events, respectively.

Interestingly the observed raise in total number of reported adverse events in ER was concentrated in milder risk classes (Figure). The total number of remarkable and serious risk class events was almost halved (33 to 18, remarkable 28-14, serious 5-4).

All serious adverse events of Department of Medicine were reported in ER, as well as in 2011.

Discussion. The risk of serious adverse events is still higher in ER. However, despite our staff reported more adverse events the total number of more serious events was reduced. Still, the activity for report-ing adverse events was concentrated in nurses. Our great mission will be to activate other staff mem-bers, such as physicians, to use this tool more actively. At the same time the struggle for patient safety continues

Figure. Risk classes of reported adverse events in ERs 2012.

Class 1 2 3 4 5
Number 165 228 92 14 4

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Rez de Jardin poster area

TEAMWORK IN ED ... PROBLEM SOLVING TEAM

Yasser Hemeida
EMDM, MAKKAH, Saudi Arabia

Corresponding author: yasser0123@gmail.com

Keywords: Teamwork, Team Organization, Problem Solving Team

Problem:

- internally: ED is multiple departments (ER, CPR, Triage, Screening, pedia, OB & Gyn, trauma ...)

If no teamwork:conflict, medical error, poor quality of work

- externally: ED always consulting other departments, discussion about cases, sharing teams with other departments; CPR team; Code Red team

if no teamwork:conflict, hypersensitivity to ED, overload on ED, poor quality

Teamwork environment:

What are the usual phases of a team's development?

1.Forming 2.Storming 3.Norming 4.Performing 5.Dissolving or reorientation.

Internal barriers to teamwork

-Inadequate support from key external stakeholders

-Team members don't set appropriate goals for the team and do not - -

-Team members don't spend enough time planning how they will work together

-Team members don't resolve interpersonal conflict

-Teams members don't conduct efficient meetings

-Team members don't have compatible levels of problem-solving, analytic, or project management skills

-Team members don't know how to influence the work of other members

-Lack of consistent or clear team leadership

-Inability to make decision effectively as a group

External barriers to teamwork

-Work load:overcrowded ED,cold cases,chronic cases

-separation of departments work

-Team leaders do not consider ED overload

-Teams are not given adequate resources

-Frequent changes in team membership

-Team members resist to share

-Team's charter is not well written

*Nature of teamwork, how it can be developed:

1. Mutual performance monitoring: to keep track of fellow team member's work while carrying out their own. This requires a shared teamwork understanding .

2. Back-up behavior: It is a product of teams effectively monitoring their own performance as well as that of their members.

3. Adaptability:refers to the ability to recognize deviations from expected actions and readjust actions accordingly.

4. Leadership: Team leaders can make or break a team and are extremely influential in terms of the degree of teamwork that develops (or not). Team leaders (whether formally appointed or emergent) create, foster, promote, and maintain shared understanding to enable effective teamwork.

5. Team orientation:orientation of the team toward the importance of teamwork.

- Interventions for developing teamwork: 1. Cross training:cross training and rotations between ED and other departments, like surgical or medical dept.

2. Metacognitive training: Metacognition can be defined as the ability to understand and monitor one's own thoughts, and the assumptions and implications of one's activities. That is, individual-level cognitive and behavioral skills must operate seamlessly across the team in order to maximize team effectiveness.

3. Team coordination training:to prevent and mitigate errors (i.e., to improve decision making during emergencies and improve teamwork communication and coordination).

4. Self-guided correction:The team is taught to diagnose, design, and implement solutions to its team functional problems.

5. Assertiveness training: Assertiveness training is designed to teach team members to effectively communicate when they are: (a) offering or requesting assistance, (b) offering a

potential solution, or (c) providing feedback to other team members.

6. Stress exposure training: As teams often operate in stressful environments (especially in overcrowded and critical cases and disasters), stress exposure training may be provided to individuals and whole teams in order to prepare them to maintain effective performance under stressful conditions.

7. Scenario-based team training: case scenario discussions in departments meeting to solve current problems and prepare teams for common problems. train teams in computer simulated cases.

8. Team building: Team building has also been referred to as team development and is an extremely popular and common intervention. Team building interventions may focus on role clarification, goal setting, problem solving, or interpersonal relations.

#Problem solving team: • 5-12 employees from different areas and levels of the hospital

-structure and function:

- meet 1-2 hours per week
 - discuss ways to improve quality, efficiency etc.
 - no power to implement ideas
 - result: • can reduce costs
 - can improve quality
 - do not result in changes in work efficiency or involve managers enough
 - fade away over a short period
- ations as a target.

Discussion and brainstorming for ED teamwork.

further work contact: websites, FB...

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Rez de Jardin poster area

THE EFFECTS OF INTEGRATING AN EMERGENCY DEPARTMENT AND GENERAL PRACTITIONER COOPERATIVE INTO ONE EMERGENCY POST

Ingrid Vliegen (1), Manon Bruens (2,4), Martijn Mes (1), Erwin Hans (1), Carine Doggen (3)

1. Industrial Engineering & Business Information Systems, University of Twente, Centre for Telematics and Information Technology, Enschede, Netherlands

2. ZGT, Ziekenhuisgroep Twente, Almelo, Netherlands

3. Health Technology and Services Research, University of Twente, MIRA institute for Biomedical Technology and Technical Medicine, Enschede, Netherlands

4. Centre for Emergency Care Euregio (Acute Zorg Euregio), Medisch Spectrum Twente, Enschede, Netherlands

Corresponding author: c.j.m.doggen@utwente.nl

Keywords: Emergency Department, General Practitioner, Organisation

Background: Increasingly, general practitioner cooperatives (GPCs) and Emergency Departments (EDs) in the Netherlands are merging into Integrated Emergency Posts (IEP). IEPs are intended to improve quality of care by giving patients access to the right care provider at the right time,

and to increase cost-effectiveness. In general there is one front office with two back offices. During out-of-hours patients call a regional telephone number and triage is done by a nurse supervised by a GP. Patients receive nurse-led telephone advice, are visited at home by a GP, or receive an appointment at the IEP where they receive a consult by a GP for less urgent problems or are sent to the ED specialist for more complex urgent care. This reduces unnecessary self-referrals to the ED and as there is one access point to medical care it reduces confusion among patients with regard to choosing the right provider. In 2010, the GPC and ED of a general hospital in Twente merged into one IEP with the intention to provide care to patients as effectively and efficiently as possible with optimal use of personnel and resources.

Aim: The aim of this study is 1) to assess the effects of IEP using simulation models and 2) to generalize the results to other IEPs.

Methods: The results of a simulation model for the situation before the integration (non-integrated post (NIP)) are compared to a discrete event simulation model of the IEP in Twente as described before (Mes, Bruens, Proceedings of the Winter Simulation Conference 2012). Three changes are present in the IEP compared to the NIP: i) self-referrals go to the GPC, ii) absence of travel time between GPC and ED, and iii) an extra nurse practitioner is hired. Several simulation experiments have been performed incorporating one or more of these changes. The same data is used for both models. Results are generalized by performing a sensitivity analysis on number of patients and number of self-referrals.

Results: A first experiment, comparing the NIP and IEP, showed that integrating the two organizations led to lower waiting times and lower length of stay (LOS), which is preferable from the patients' point of view. However, this improvement can be caused by all three changes (self-referrals to GPC, nurse practitioner, and absence of travel time). In a second experiment the IEP without a nurse practitioner was compared to the NIP, also without a nurse practitioner, resulting in only two differences between the IEP and the NIP: travel time between the two organizations in the NIP, and self-referrals have a choice on where they want to go in the NIP. The LOS at the GPC in this experiment was somewhat higher in the IEP situation than in the NIP; having no travel time in the IEP did not compensate for the increase in LOS due to the increase in number of patients at the GPC. However, LOS was lower in the ED and in the IEP in general. In a third experiment the IEP was compared to the NIP with a nurse practitioner. Waiting times and LOS were somewhat lower for the GPC, lower for the ED, as well as the IEP in total, compared to the NIP with a nurse practitioner. In the last two experiments, a situation with a nurse practitioner in both IEP and NIP and the situation without in both, the only difference was the choice of self-referrals as where to go. There was no travel time. In both situations the LOS in the GPC in the IEP situation was higher, while the LOS in the ED and in the IEP in total was lower.

The sensitivity study showed that when the number of patients increases, the added value of the IEP decreases, in extreme cases leading to a situation in which the IEP is not

beneficial. However, having this increase in patients without adapting e.g. nurse practitioner capacity, would be an unrealistic situation in practice. When the number of self-referrals increases as is seen in more densely populated areas, the added value of the IEP increases making it even more beneficial to collaborate.

Conclusion: The integration of the GPC and the ED into one IEP, as in Twente, has had a positive effect on the LOS. Especially the lower LOS in the ED is important as the ED receives the more complex urgent care patients. Also, in a more general setting, especially when the number of self-referrals increases, it is beneficial for the organizations to collaborate.

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Rez de Jardin poster area

IMPACT OF AN EARLY GERIATRICS CONSULTATION FOR PATIENTS AGED OVER 75 DISCHARGED FROM AN EMERGENCY DEPARTMENT WHILST PRESENTING A RISK OF FRAILTY

Yves Cossé (1), Marc Wraith-Mottier (2), Delphine Claeys (3), Pablo Descatoire (3), Nathalie Guesdon (3), Mathieu Kozlik (1), Pascale Lescure (3), Eric Roupie (2)
 1. Service des urgences - SMUR, Centre Hospitalier de Bayeux, France
 2. Service d'accueil des urgences, Centre hospitalier universitaire de Caen, Caen, France
 3. Service de médecine gériatrique, Centre hospitalier universitaire de Caen, Caen, France

Corresponding author: cosse.yves@gmail.com

Keywords: Early geriatrics consultation post discharge of Emergency department discharge, ISAR score, Evaluation of emergency re-admission at one month

Introduction : The aging of our population has considerably modified the outpatient and inpatient medical care. Healthcare professionals now meet new challenges with the final objective of maintaining older people's autonomy as long as it is possible.

Material and method : In the first quarter of 2012, we led a two month prospective, randomized, pilot study within an University Hospital in order to estimate the impact of setting an early geriatrics consultation for patients aged over 75 discharged from the E.D. (Emergency Department) whilst presenting an I.S.A.R. score (Identification of Seniors At Risk) equal or higher than two. Our objective was to assess an early geriatric consultation's impact on readmissions occurring within a month, and to search for early return factors within the targeted population.

Results : The group we studied involved 278 patients : 230 in the control group versus 48 in the intervention group. An early geriatrics consultation significantly decreased the rate

of readmissions within thirty days (20,4% vs 6,3% ; p=0,02). Also, patients consulting for traumatological pathologies present the strongest rate of readmissions (27,8 %). Among the returns, we constate that the time between early geriatrics consultation and an early geriatrics consultation should be adjusted according to the patient's initial pattern diagnosis group.

Conclusion : The sustainability and the development of this consultation could improve the management of elderly people. A larger-scale study seems necessary to confirm these perspectives and to estimate their economic and health impacts.

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Rez de Jardin poster area

PRE-HOSPITAL HEALTHCARE PROFESSIONALS: VOLUNTEERS WANTED!

Marius Smarandoiu (1), Alin Canciu (1), Denisa Falamas (1), Dana Taran (1), Lavinia Orac (2)

1. Emergency department, SMURD, Sibiu, Romania
 2. Emergency department, UPU-SMURD Mures, Tg Mures, Romania

Corresponding author: mariussibiu@yahoo.com

Keywords: volunteer, paramedic, student

Background

SMURD Sibiu started as a full volunteering service, being completely unusual, generating many reactions from authorities who considered volunteering equal to amateurism. In time, it turned out that volunteering can mean high professionalism. Even today volunteering in emergency medicine is still regarded with reserve by specialists.

Structure

SMURD Sibiu organizational model is unique in Romania unchanged for nearly 20 years.

All Intensive Care Unit (ICU) paramedics who account for 60% of the SMURD rescue team are medical students, all volunteers, being self-organized. Recruiting and managing volunteers is difficult enough and sometimes this becomes a real challenge.

The organizational hierarchy includes 3 levels of competence. After theoretical courses and exams, students who are admitted as paramedics - level 3 follow an intense continuously medical training and periodical evaluation up to level 1. Training and evaluation process are conducted by paramedics level 1 with the help of an emergency specialist. A good paramedic requires appropriate medical knowledge and personal skills like communication, focused and prompt reaction, disciplined and hardworking attitude.

Methods

In order to prove the efficiency of this kind of system, SMURD national database (589873 cases between 01.01.2010 and 31.12.2012) was used to measure Sibiu SMURD resuscitation outcome (ROSC) compared with other top centers in Romania. Criteria of inclusion are: ICU (Intensive Care Unit) urban cases when CPR was initiated.

Results

Sibiu and Constanta share the first place (41% of ROSC) followed by other important medical centers (34%, 33%, 32% etc.). The other medical centers have hired professional medical personnel instead of paramedics.

Conclusion

In the long term (20 years), the system has proved itself as being feasible.

With proper training and motivation a volunteering medical system can be at least as good as any professional hired personnel but less expensive.

Implementation of medical volunteering should also be encouraged in certain medical areas as this can be a good alternative in a difficult economical context.

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Rez de Jardin poster area

ESTABLISHMENT OF A LYING WAITING SPACE FOR PATIENTS IN AN EMERGENCY DEPARTMENT: THE LEAN PROCESS IN THROUGHPUT

Frédéric Cocu, Marion Guerrier, Katia Maisonnier, Kosta IVANOV, Laurent LAUMAILLER, David POUBEL, Sophie RACINE, Christophe AUDOUX, Eric REVUE

Emergency Department, Louis Pasteur Hospital, Chartres (Le Coudray), France

Corresponding author: erevue@ch-chartres.fr

Keywords: Overcrowding Throughput, Lean process, waiting area

Introduction:

Waiting delay at Emergency Department (ED) penalizes ED leading to busy examination rooms and queue on stretcher, causes of many dysfunctions, source of overcrowding and a poor quality of care. Does the Lean process

Methods:

Monocentric retrospective survey in a General Hospital ED (39800 visits per year) during 12 months in 2012 (January to December). Comparative analysis of data : age, length of stay (LOS) and time to first care ,time to admission, time to discharge, % of patients leaving without being seen (LWBS) 5 years before and 1 year after setting up a Waiting and Lying Area (WLA) for patients with optimized organization by Lean method.

Results: The number of ED visits increased in the last 5 years (+10 %). The WLA was performed for 9 patients maximum in the same time. The admission rate was stable (35%). The age of patients was stable (56 y-o) . Reduction of 50% of LOS after optimized organization: 3h36 vs 8h35. Decrease of time to contact to emergency physician from 75 min to 9 min. Abolition of patients in hallways on stretchers (8,6% to 0%). Abolition of waiting time on stretcher benefits to WLA (occupation rate = 100%).

Discussion:

The WLA creation reserved to patients whose wait for orientation complementary tests lead to clear examination rooms. It needs entire and optimized reorganization of ED. WLA is an efficient solution against busy flow at ED. WLA

needs an adapted protocol to flow away examinations rooms as soon as the patients who are waiting decisions, complementary tests, or hospitalisation unit without care, or supervision, can go in the WLA. Breakdown quickly the WLA with new patients regularly lead to optimize the examination rooms' occupation. WLA is reserved for the patients who need a stretcher, and another unit must be created for the able patients

Conclusion:

The WLA creation is an efficient solution against overcrowding at ED. The Lean method was used for an organization of throughput in the ED with the implementation of a new protocol. The next step will be the creation of another waiting area for sitting patients.

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Rez de Jardin poster area

A NEW CONCEPT: ROLE OF TRIAGE LIAISON PHYSICIAN TO EMERGENCY MOBILE UNIT PHYSICIAN IN THE EMERGENCY DEPARTMENT

Katia Maisonnier, Frédéric Cocu, Marion Guerrier, Nasser Al Awad, David Poubel, Sophie Racine, Eric Revue

Emergency Department, Louis Pasteur Hospital, Chartres (Le Coudray), France

Corresponding author: erevue@ch-chartres.fr

Keywords: Physician Triage Prehospital EMS, Throughput input, overcrowding

Introduction: In the organization of an emergency department, Emergency Mobile Unit (EMU) Physicians need to be available immediately for a prehospital response. Can be the Triage physicians' job dedicated to EMU physicians in the Emergency Department ?

Methods: A monocentric retrospective analysis, during to 12 months (January to December 2012) with 2 EMU teams 24h shifts. Comparison of hourly activity between EMU response (Number of prehospital ambulance activities per 24h) and ED visits. Comparison of data length of Stay (LOS) and waiting time, time to see a Physician, analysis of time to Triage, percentage of LWBS (left without being seen), number of patients on 24h. Analysis of impact on ED overcrowding input and throughput, before and after establishment of Triage Liaison Physician (TLP).

Results: 40000 admissions per year to ED with admissions rate from 0 to 4.am = 6%, from 4 to 8.am = 5%, from 8 to 12.am = 24%, from 12.am to 4.pm = 26%, from 4 to 8.pm =24%. 1500 prehospital response per year (+15%,4/day in average, with time spending of 68 minutes) ; from 00 to 4.am = 18% of ENI, from 8 to 12.am =23,3%, from 12.am to 4.pm =20,3%, from 4 to 8.pm = 20,5%, from 8.pm to 0.am = 20,1%. TLP and Nurse Triage level: Vital Emergency 5% , Emergency 2 (<15 mn)12%, Emergency 3 (< 1h) 36%, Emergency 4 (less emergency <2h)26% Emergency 5 (delayed) 21%. After establishment of a TLP, the median waiting time to be seen is 72 min before and 9 min and the

length of stay is reduced significantly to 50% (from 8h36 to 3h30)

Discussion: When EMU Physician, multi-task, available quickly, the time to first medical care is reduced, especially from vital emergencies and according to gravity selection, ensures TLP's job the time to care is most appropriated. The EMU physicians' availability for triage can increase the Physician occurrence, but during time of EMU and ED high activities (from 10.am to 6.pm), the EMU availability is unpredictable. In our ED, the implementation of a TLP 5 days a week was effective, with an EMU physician during time of high activities in ED if there is no prehospital response. The impact of the role of TLP dedicated to the EMU physician is a new concept in our ED. A team triage nurse and EMU physician improves ED efficiency particularly in crowding periods.

Conclusion: The implementation of EMU physician in the organization of ED has remarkable benefits to optimized time to first care and detect vital emergency, only if a protocol is established in order to let available quickly the EMU team. This new concept improves ED efficiency in crowded periods and reduced all indicators in significant time. We need more data to evaluate the impact of EMT in other ED.

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Rez de Jardin poster area

EMERGENCY DEPARTMENT AS A START POINT FOR PATIENT CENTERED ORGANIZATION WITH MEDICATION RECONCILIATION

Sébastien Doerper (1), Pierre-olivier Vautrin (2), Y. Azizi (3), T. Baum (3), J. Bonhomme (3), A. Dony (3), O. Ferry (3), H. Gris  (3), V. Guillaume (3), N. Peter (3), A. Vidal (3), V. Vouaux (3), E. Dufay (3), D. Rosa (3)

1. Pharmacy department, Centre hospitalier de Lun ville, Lun ville, France

2. Emergency department, Centre hospitalier de Lun ville, Lun ville, France

3. Emergency Medicine, Centre Hospitalier de Lun ville, Lun ville, France

Corresponding author: sdoerper@ch-luneville.fr

Keywords: patient centered organization, medication reconciliation, medication errors

CONTEXT

The french studies ENEIS 1&2 show respectively that 0.6 & 0.7 avoidable serious adverse events related to medication occurs per 1000 days of medical surgical and obstetrical hospitalization [1]. Common source of adverse events are medication errors. The emergency department (ED) can be the start point which organizes the collect of information about the home medication list. But an american study shows that only 13% of ED medication lists are complete [2]. Medication reconciliation prevents medication errors resulting from incomplete or poorly communicated

information at the inpatient's admission ; it is worldly recognized as a powerful method to improve patient safety.

[1] Michel P et all, Les  v nements Ind sirables graves associ s aux soins observ s dans les  tablissements de sant  – Dossier solidarit  et sant , N  17 2010.

[2] Caglar S, Henneman PL, Blank FS, Smithline HA, Henneman EA. Emergency department medication lists are not accurate. J Emerg Med. 2011; 40 : 613-616.

OBJECTIVE

The aim of this communication is to present efficiency and quality results to stem from a patient centered organization starting in the ED including the medication reconciliation.

METHODOLOGY

A practice survey evaluates the information quality of the medication list of patients age 65 or older admitted through the ED to inpatient services. The medication lists are carried out and transmitted by the ED to the units care. During the month of November 2011, 29 patients are included.

Then medication reconciliation as a new process is implemented which starts in the ED. During the year 2012, 2022 patients age 65 or older are included. Indicators measure and analyze its efficiency and its quality.

RESULTS

The patient population of the Lun ville hospital concerns 90 000 inhabitants. The ED receives about 17 000 patients per year, 4 000 are hospitalized and 2 000 are age 65 or older.

The first practice survey shows that only 24.1% of the patients have a complete medication list and 54.7% of medication prescription lines are identified way of complete by ED personnel before hospitalization of the patients in a unit care. There 81.3% of medication prescription lines are then identified. Both lists are compared to those formalized by pharmacists.

During the second period, the efficiency indicators which concern the eligible reconciled patients and the reconciled patients within 24 hours are respectively 95.5% IC95% = [94.5% - 96.4%] (1930/2022) and 55.0% IC95% = [52.8%-57.2%] (1062/1930). Quality indicators measure 917 reconciled patients with at least 1 intercepted and corrected medication error (47.5% IC95%=[45.3%-49.7%]) and 2241 medication errors which are intercepted and corrected (1,16/reconciled patient). The type of medication errors is mainly omission (55%) and dosage error (26%). The severity of the medication errors is evaluated as significant for 18.5% of them and major for 3.1%. 2.4% represent the percentage of patients who could have been injured if no reconciliation.

DISCUSSION

The practice survey leads to start medication reconciliation by pharmacists from the ED where the reconciliation is faster and safer achieved. The permanent collect of indicators is a way of sensibilization the medical community to make safe patient's medication management.

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Rez de Jardin poster area

REDUCING THE LENGTH OF STAY IN ED : IT IS POSSIBLE... IT NEEDS A NEW MANAGEMENT !

Marion Guerrier, Frédéric Cocu, Katia Maisonnier, Kosta Ivanov, Christophe Audoux, David Poubel, Laurent Laumailleur Sophie Racine, Eric Revue

Emergency Department, Louis Pasteur Hospital, Chartres (Le Coudray), France

Corresponding author: erevue@ch-chartres.fr

Keywords: input throughput output, overcrowding management, indicators EMS Lean concept

Introduction:

Overcrowding is an international and complex problem in the Emergency Department. Many indicators are used to evaluate the patient's flow in crowded periods. We analyzed the effect of an entire reorganization of the Emergency Department (ED) and Emergency Mobil Unit (EMU) with the objective to reduce our length of stay (LOS).

Methods:

A comparative analysis of data 5 years (2007 to 2011) before and 1 year (2012) in a General Hospital after reorganization of Input-Throughput-output process in ED with Lean Method: analysis of Triage Level, Number of ED visits, LOS, hospitalization rate, % of patients left without being seen (LWBS). Implementation of a protocol of Nurse and Physician Triage (Canadian CTAS) with reorganization of patients' flow in lying waiting area, of waiting time in Short Stay Unit (SSU) of protocols for blood analysis and imaging, implication of physician Emergency Mobile Unit (EMU or "SMUR") in the ED.

Results:

Despite an increasing number of ED visits (39600/year + 10 %) and extra hospital EMU responses (1500/year; +20 % total time average 68 minutes, and 1 transfer/day, average 190 minutes) the LOS was reduced by half (8h36 to 3h30) in less than 5 months. All the 16 Emergency Physicians and 50 nurses were included in the study. The reduction of waiting time from 2h10 to 20 min (-50 %) with establishment of Triage protocol in 5 levels performed by a Team Triage with nurses and physicians. The Team Triage was effective during crowded periods (10 AM to 8 PM) 7days/week. The hospitalization rate was 35% with half in Short Stay Unit where the occupation rate was 100% and time to discharge was 24 hours. The throughput organization of the ED using protocols could reduce the number of blood analysis to < 20%. The abolition of patients in hallways on stretchers (8,6% to 0%) could be possible. The patients' rate transfer in other hospitals was less than 2%. The reduction of patients LWBS was from 6% to less than 0,5%.

Discussion:

Reduction of LOS in ED needs an entire reorganization in the patient flow from the admission to discharge. A Triage Emergency Team in 5 levels of severity performed by Nurses and physicians could reduce time to first medical contact. The reduction of LOS in Short Stay Unit permitted to perform the hospitalization rate and to clear patients in hallways on stretchers. The Physicians EMU 's involvement in the management of vital emergencies in the Triage process in the input organization had an effective impact to

regulate the admissions' flow, despite 5 prehospital responses per day. Analysis of ED data, in particular input-throughput-output patients' flow, time to admission, time to discharge, LOS, % of admission, are necessary to create a model in the ED with participation of all co-workers with the objective of changing the overcrowding situation.

Conclusion:

Despite the increasing number of ED visits, an entire reorganization of the input-throughput-output process permitted to decrease significantly from 50% the Length of Stay and suppress waiting time in stretchers in hallways for the lying patients. A computerized model is in progress to perform our data on the workflow analysis in other ED.

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Rez de Jardin poster area

LARGE INFORMATION CAMPAIGN FOR CITIZENS – EFFECTS ON PATIENT FLOW IN EMERGENCY DEPARTMENT

Veli-Pekka Rautava, Ari Palomäki

Emergency department, Kanta-Häme Central Hospital, Hämeenlinna, Finland

Corresponding author: veli-pekka.rautava@khshp.fi

Keywords: Public information, Patient flow, Emergency department

Introduction:Overcrowding in emergency departments (ED) is a widely known problem. It causes problems and delays in ED and has a negative impact to the patient safety [1]. The aim of this study was to analyze if a comprehensive and wide information campaign for citizen effect on patient flow into the ED.

Methods: A substantial reform of emergency care took place in the province of Kanta-Häme in Southern Finland. Three separate out-of-hours services in primary health care (PHC) and one ED in the hospital were combined into one large ED in April 2007. Basic principles of the new ED were: 1) ED is only for those patients, who are seriously ill or injured, and need immediate care 2) PHC (health care centers) take care of acute ordinary illnesses and non-serious injuries during the office hours. To achieve these principles several interventions were implemented (regional five-scale triage system, information plan, ED's internet pages, citizens were systematically informed by mail, articles in the newspapers and interviews in the radio and television). The number of patient visits decreased significantly ($p < 0.0001$) in 2007, but started to increase about 10 % per year in next four years. Systematical and wide information campaign by mail, radio and newspapers were repeated and number of patient visits were followed a year after the campaign.

Results: During a 12-month period before the information campaign the mean number of the GP patient visits was 73,2 per day. During a following 12 months after the campaign the number was diminished to 61,7 per day. This change was not associated with the increase of the patient

visits taken care by specialists and hospital residents. P-value < 0.0001.

Conclusions: A comprehensive and wide information campaign for citizens can notably reduce patient flow into the ED.

References:

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Rez de Jardin poster area

CRITICAL CARE IN EMERGENCY MEDICINE: AN IMPORTANT REALITY

Renzo Camajori Tedeschini (1), Germana Ruggiano (2)

1. Emergency Department, Ospedale S. Giovanni D. Dio ASL 10 Florence, Florence, Italy
2. Emergency Department, Ospedale S. Maria Annunziata ASL 10 Florence, Florence, Italy

Corresponding author: germana.ruggiano@asf.toscana.it

Keywords: Critical care medicine, High dependency unit, Emergency Department organization

Critical Care Medicine is an important part of Emergency Medicine as critical patients usually present to the Emergency Department and need high assistance well before being admitted to an Intensive Care Unit. Recent evidence indicates an increase in the number of critically ill patients, both in the emergency department (ED) and the intensive care unit (ICU.)

In the management of critical clinical situations such as acute myocardial infarction, acute stroke, multi-organ trauma, or sepsis, is often time constrained to achieve a successful outcome, and the EM physician must have deep knowledge of Critical Care Medicine.

In our Emergency Medicine we created an High Dependency Unit in 2002. Its purpose was to manage and treat critical patients who need a higher level of care than can be given on an ordinary ward, but who don't fit ICU admission criteria. Each year around 350 patients have been admitted to our HDU with a mean mortality rate during HDU stay of 6-7%, and a subsequent intrahospital mortality rate of 15%. The Mean APACHE II score was 17.2 (that is associated with a 26.2 % mortality rate). The mean HDU stay is about 3.5 days. The rate of ICU admission from the Emergency Department was 1.31% before HDU was created, and 0.96% afterwards, a net reduction of 27%. The in-hospital mortality rate in the medical wards was 3.7 % before the HDU, and 2.9% afterwards, a reduction of 22%.

In our reality, the HDU is a critical care area for the first 24-48 hours, but it also an important continuous source of study and cultural training for the Emergency physician.

Emergency physician often have to perform invasive procedure in emergency clinical situations; it is thus necessary that the Emergency physician is technically proficient in these procedures. The HDU is a site where the Emergency physician can lean and hone these technical

skills. The HDU also allows an observation of the evolution of critical disease by the Emergency Physician (EP).

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Rez de Jardin poster area

COMPARISON UNINTENTIONAL AND INTENTIONAL INJURY IN PATIENTS REFERRED TO TWO MAJOR GENERAL HOSPITAL IN TEHRAN, IRAN, IN 2012_2013

Hossein Alimohammadi (1), Ali Arhami (1), Hojat Drakhshanfar (2), Hamidreza Hatamabadi (1), Vishtasb Nikmanesh (1), Mehdi Samiei (1), Ali Shahrami (2)

1. Emergency medicine, Shahid Beheshti medical university- Imam Hossein hospital, Tehran, Iran, Islamic Republic of
2. Emergency department, Shahid Beheshti medical university- Imam Hossein hospital, Tehran, Iran, Islamic Republic of

Corresponding author: alizarife@yahoo.com

Keywords: intentional injury, unintentional injury, costs incurred

Trauma is one of the leading causes of long-term mortality and morbidity especially in third world countries. In addition, the economic costs of these injuries will impose to individual family, healthcare centers, insurance organizations and also have the psychological and social effects on the community. The best and most effective means for reduction of harmful effects of trauma is prevention, so the first step is to know the extent of the risk factors to prevent it.

OBJECTIVES:

The aim of this study was to compare the incidence of intentional injuries and unintentional injuries, regarding to demographic characteristics, job status, severity of injury and injury mortality and days of hospitalization and costs incurred health care system.

METHODS:

A prospective observational study, which is conducted over a one year period. This study is done in the emergency department of two major general hospitals in Tehran, Iran, which handle more than 150000 patients in a year. The subjects consisted of trauma patients admitted to the emergency room. Data was collected by interviewing patients and completing the questionnaires done by emergency medicine residents.

RESULT

During the 11-month period, 1800 patients were interviewed. 600 cases were intentional injuries and 1200 patients were unintentional injuries. 85 percent of them were men. The estimated maximum cost per patient from admission to discharge from the hospital for intentional injuries was \$77 and for unintentional injuries was \$112.

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Rez de Jardin poster area

CLINICAL AUDIT OF TRAUMA PATIENTS' HANDOVER BY EMERGENCY MEDICINE RESIDENTS IN EMERGENCY UNIT OF IMAM HOSSEIN HOSPITAL

Ali Shahrami, Hossein Alimohammadi, Afshin Amini, Behroz Hashemi, Hamidreza Hatamabadi, Hamid Kariman, Pantea Motahar, Masomeh Nazemi Rafi, Ali Tabatabaee

Emergency department, Shahid Beheshti medical university- Imam Hossein hospital, Tehran, Iran, Islamic Republic of Iran

Corresponding author: alizarife@yahoo.com

Keywords: Clinical Audit, Handover, Emergency department

The accuracy and reliability of handovers in emergency department has been questioned for a long time, multiple patient encounters, overlapping, lack of undivided attention to patient, interruptions in history taking and physical exam, over-crowding cited as reasons. The primary purpose of handovers is to transmit clinical information in an organized way to ensure quality- care for the patient. A standardized approach in handovers allows suitable and expedient management of patient with minimal errors and fragmentation of information, resulting in single-cognitive image of patient.

In present study at emergency unit of Imam Hossein hospital trauma center in east of Tehran, with an annual admission of more than 85,000 patients, we aim at designing an analysis based on stages of clinical audit, to improve the handover process and reduce level of degradation of information during transmission, when done traditionally using verbal contact and unstructured notes.

All the handovers done in a period of one month during "shift-change" were included in the study handover forms designed using suggestions from ten emergency medicine attending, physicians based on present standards were used, after proper education and updating of residents about the need and correct handling of handover forms.

A cluster-randomized intervention study was used to analyze clinical audit handovers of 570 trauma patients in 6 handovers for 9 items by emergency medicine residents and the results at present are as follows:

Information regarding 472 patients out of 570 was transmitted to "receiver-resident" during shift-change, demographic detail of 181, mechanism of trauma of 62, physical examination of 170, clinical assessment of 73, consultation of 34, probable diagnosis of 31, action-plan of 80 and treatment strategy of 59 patients was not communicated. Although 361 of these patients had multiple trauma or probable critical organ damage vital signs of two were notified. Further study is underway.

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Rez de Jardin poster area

NEAR-SYNCOPE IN THE EMERGENCY DEPARTMENT: A HETEROGENEOUS MANAGEMENT THAT CAN BE OPTIMIZED

Richard Chocron (1), Anne-laure Féral-pierssens (2), David Razazi (1), Sébastien Beaune (2), Philippe Juvin (1)

1. Emergency Department, Hôpital Européen Georges Pompidou, Paris, France

2. Emergency department, Hôpital Européen Georges Pompidou, Paris, France

Corresponding author: richard.chocron@gmail.com

Keywords: near-syncope, severity signs, adverse outcomes

Background: « Malaise » or near-syncope is used to define different situations of transient loss of consciousness, including syncope. Near-syncope is a frequent motive of consultation and it accounts for 3 to 5% of emergency department(ED) visits in France. While French and European consensus exist, the management of near-syncope is actually heterogeneous. It then would be particularly relevant to introduce a universal computer-based clinical strategy helper based on updated severity signs. Objective: This article presents the first step of an interventional study which assesses the interest of such clinical strategy flow chart in the care management of patients presenting near syncope. Method: This retrospective observational study concerns an ED of a university hospital. We conducted a health records review of near-syncope patients older than 16 years old (y.o.) admitted to the ED over a 3 months period. From the latest recommendation we selected the following severity sign: clinical (age>70 y.o., palpitation, cardiac sign, neurological sign, abnormal ECG) historical (family history of sudden cardiac death, cardiac history) anamnestic (recurrent, syncope during exertion or supine, unclear story). Results: Out of n=329 patients (mean age 50 y.o. 3% of all visits at the same period) expressing near-syncope for initial motive of consultation, 21.4% were later admitted and 11.8% discharged from itself. The concordance rate between ED physicians judgment and the last consensus increases continuously with the number of severity signs presented by patient. The clinical strategy concordance was of 54.2% when patients presented at least 3 severity signs (SS) (44.2% for ≤2SS). Among patients presenting 2 SS, cardiopathy history and episode recurrences appeared to be leading. Conclusion: Concordance of physicians management and judgment concerning near-syncope is increasing with the number of SS presented by patients. Indeed, more than half of our patients are admitted concordantly with recommendation when at least 3 SS are presented. However, management stays heterogeneous and needs to be optimized. The introduction of a clinical tool helper has great potential to help physicians in their decision making.

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Rez de Jardin poster area

MORTALITY IN THE EMERGENCY DEPARTMENT OF THE GENERAL HOSPITAL OF ALBACETE, SPAIN, FROM 2007 TO 2011: INDEX OF QUALITY OF HEALTH CARE.

Tanilu Christie Grande Montalvo, Graciela Cueto González, Francisco Javier Lucas Imbernón, Raul Salmerón Ríos, Carmen Llanos Val Jimenez, Ricardo E. Reolid Martinez, Marta Ballesteros Merino, María Martínez-Moratalla de la Prida

Emergency Department, General Hospital of Albacete, Albacete, Spain

Corresponding author: tanilu_grande@yahoo.com

Keywords: Mortality rate, Sepsis, Index of quality of Health Care

Introduction: In the last years, the dying process has changed to shift progressively from home and family to the doctor and hospitals. The high average age of the population served, the structural weaknesses of Primary Health Care and the gradual loss in urban areas of the role to be played by the general practitioner in emergency care, make more and more often patients go to the Emergency Department of General Hospital of Albacete with evolved diseases, with poor quality of life and unsolvable problems which lead inevitably to death. Registration of death in the Emergency Department of the General Hospital of Albacete is an epidemiological data and serves also as a health care quality indicator.

General Objective: To describe the epidemiological and clinical characteristics of patients who died the Emergency Department of the General Hospital of Albacete in Spain. **Specific Objectives:** To determine the causes of death, analyze the process of Health care in the Emergency Department and determine the steps that can be improved.

Methodology: Type of study: descriptive and relational retrospective study, the subject were the patient who died in the Emergency Department of General Hospital of Albacete during the years 2007-2011, excluding patients from pediatrics and gynecology departments. **Study variables:** Age, sex, clinical data from ER process, consultation, length of stay, expected death, Karnofsky index and location of the patient at the time of death. For the statistical analysis we used SPSS Statistics v20.0.0.

Results: Six hundred and fourteen subjects were included in this study from 2007 to 2011, 12.86% (n = 79) already dead on arrival at the Emergency Department. The mortality rate was 0.10% (535 deaths/515.000 ER) (103.88 deaths/100.000 ER). The mean age was 79.70 years and 50% were female, 26.2% had consulted for the same reason in the ER in the past two weeks. Approximately 18% of the subjects had cancer and 38% of them had metastases, 57.3% had serious alterations in heart rate and 57% had alterations of the respiratory rate, 32.3% had a Glasgow Scale <10, the 28, 1% of the subjects had moderate to severe cognitive impairment, 75.4% had parameters of expected death, 66.8% had a Karnofsky index <50. Cardiopulmonary resuscitation were made in 23% of the subjects. Seventy-four percent of the subjects died in Observation Unit. The main cause of death was sepsis in

39.5%, Acute decompensated heart failure by intercurrent illness in 14.5% of the subjects, 9.4% died by ischemic heart disease, Neoplasms was the cause of death in 9% of subjects, by politrauma cause in 8.7% and due to Acute Pulmonary embolism in 7% of cases. Autopsy was requested in 20.7% of cases.

Conclusions: The mortality rate in the Emergency Department of the General Hospital of Albacete is similar to other Hospital Emergency Services. The main cause of death is sepsis which led us to make a review the process of septic patient care and the coordination with the various units involved. The Observation Unit is where most exits occur although fatalities had been detected in the area of radiology and in the waiting room.

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Rez de Jardin poster area

20 YEARS OF EMERGENCY MEDICINE IN TARGU MURES COUNTY

Cristian Boeriu (1), Lavinia Orac (1), Marius Smarandoiu (2), Anamaria Szabo (1)

1. SERVICE D'URGENCE, HOPITAL UNIVERSITAIRE TRAGU MURES, TARGU MURES, Romania

2. Paraamedics, University of Medicine Victor Papilian, Sibiu, Romania

Corresponding author: lavy79ro@yahoo.com

Keywords: SMURD : MODILE SERVICE OF EMERGENCY MEDICINE, prehospital care, emergency system developing

The story of the development of emergency medicine in Targu Mures county and then through all Romania is indeed a success story.

20 years have passed from a post revolutionary nonexistent emergency medicine in Romania to a systematic development that includes now: a 5 years residency program, improved pre hospital care (ambulances and helicopters), telemedicine use, a brand new department etc.

We want to present the essential steps of this development, hoping that this might help/inspire others who are in the process of implementing emergency medicine in their countries. This presentation is also intended to be a way of thanking to all those who were involved in advancing emergency care in my country: paramedics, volunteers, nurses, doctors and last but not the least common Romanian people in general, who understood and supported us from the very beginning.

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Rez de Jardin poster area

**INTERHOSPITAL PATIENT TRANSFER:
CHARACTERISTICS OF PATIENTS WHO ARE
TRANSFERRED FROM THE EMERGENCY
DEPARTMENT OF A UNIVERSITY HOSPITAL.**

Alain Tran (1), Said Laribi (2), Penelope Troude (1), Fabien Martinez (1), Bertrand Galichon (2), Christophe Segouin (1), Patrick Plaisance (2)

1. Public health, APHP, Hôpital Lariboisière, Paris, France

2. Emergency Department, APHP, Hôpital Lariboisière, Paris, France

Corresponding author: said.laribi@lrb.aphp.fr

Keywords: transfer, emergency, organisation

Introduction: The transfer of patients from one medical facility to another is an international issue for Emergency Departments (ED). It is a situation of fragility and discomfort for patients as well as being a financial issue for the transferring hospital (potential loss of income). Lariboisière hospital is a university hospital located in Paris, which is part of the Assistance Publique-Hôpitaux de Paris (AP-HP) the regional and university hospital network for the greater Paris region. Lariboisière hospital is one of the biggest ED of Paris with 72000 patients in 2011, corresponding to approximately 200 patients every 24h.

The main goal of this work was to describe the process of interhospital patient transfer from our ED, describe the characteristics of patients and the reason for transfer.

Methods: All patients older than fifteen yo seen in our ED from December 2012 to January 2013 and who required hospitalisation were eligible.

Physicians were interviewed through a self-administered questionnaire including: patient identification, birth date, medical diagnosis, short-stay unit hospitalisation, medical specialty, social characteristics, possibility of hospitalisation in our hospital, and in case of transfer: date, destination and motive for transfer.

Results: Among the 1371 eligible patients, a questionnaire has been filled out for 1125 patients (82 %). Among these 1125 patients, 30% were transferred to another hospital. Among the 979 non psychiatric patients, there was no significant difference in the proportion of transfer according to the week or the day of transfer. Nevertheless, the proportion of transfer varied from 17 % to 27 % depending on the week of the transfer. The highest proportion of transfer was observed during the week before the holiday.

Descriptive analysis has been restricted to the 218 non-psychiatric transferred patients. Half of transferred patients were older than 74. There was as much women as men among the transferred patients. Concerning social characteristics, at least 15 % of transferred patients had social issues including no health coverage, homelessness, bedridden patient, low level of French. Two third of transferred patients had stayed in the short-stay unit and one third required surgery. Regarding medical diagnosis, 25 % of transferred patients had respiratory diseases, 18 % had vascular surgery pathologies, 18% had orthopaedic pathologies and 11 % had urological pathologies.

The most frequent reason to transfer was lack of room availability (64%), followed by lack of specialty (22%). Concerning destination of transfer, 70% of patients were transferred to non-AP-HP hospitals.

Discussion/ Conclusion: The proportion of transfer in the study for all the participants was 30 % but this proportion was only 23% after exclusion of patients with mental disorders. Excluding mental disorders, half of the transferred patients were older than 75. At least 15% of transferred patients had a social issue that might complicate the cares or lengthen the stay. As expected in a university hospital with most of specialties, most of patients were transferred due to the lack of available room (64%).

The highest proportion matches with a progressive closure of rooms in the hospital during the week before the holiday, in order to anticipate holiday. However, the number of patients requiring hospitalisation did not decrease this week or during the holiday. The transfer of patients is an issue for the transferring hospital as well as for patients, so it is important to reduce its proportion as much as possible. Nevertheless, the lack of rooms in the hospital restricts the possibility of hospitalisation and then prevents the decrease of transfer. Thus, working on room availability in hospital may help decreasing the proportion of transfer.

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Rez de Jardin poster area

BED OCCUPANCY OF HELSINGBORG GENERAL HOSPITAL IS ASSOCIATED WITH DECREASED ODDS OF ADMISSION FOR PATIENTS IN THE EMERGENCY DEPARTMENT.

Mathias Blom (1), Kjell Ivarsson (1)

1. Akutcentrum, Helsingborgs lasarett, Helsingborg, Sweden

Corresponding author: blom.mathias@gmail.com

Keywords: Emergency department admissions, In-hospital bed occupancy, Emergency department crowding

Background

A conceptual model of emergency department crowding highlights the association between scarcity of in-patient beds and prolonged boarding-times in the emergency department. Whether the lack of in-patient beds affects the decision to admit a patient lacks support in the international body of scientific literature.

Helsingborg general hospital in southern Sweden frequently operates at occupancy levels exceeding 100%, resulting in a profound interest for the issue from both clinicians and managers at the hospital.

Objective

The objective of the present study is to reveal any association between the hospital occupancy level of Helsingborg general hospital and the odds for admission of patients presenting in the hospital ED in 2012.

Methods

The ED information system Patientliggaren® was used to identify all patients presenting in the ED of Helsingborg hospital in 2012 and to get information on their baseline characteristics. Data on hospital occupancy level was retrieved from the hospital informatics unit.

The ED of Helsingborg hospital uses a “triage-to-specialty” approach to emergency care, with separate units for patients presenting with medical, surgical and orthopedic problems, as well as a unit staffed by emergency physicians capable of handling all conditions.

Binary logistic regression models were developed for each unit, to evaluate any association between hospital occupancy level at the hour of patient presentation and the odds for admitting a patient. Models were designed to rule out confounding from shift of presentation, patient age, triage priority and high workload in the ED (indicated by shifts experiencing more visits than the 75th percentile for the current shift type and unit) as well as their statistical interaction.

The appropriateness of the model was addressed by Nagelkerke’s R², as well as through inspection of the standardized residuals and Cook’s distance. Association between hospital occupancy and odds for admission was quantified as odds ratio (OR) for admission for each 5% increase in hospital occupancy level (ranging from <95% to >105%).

Results

A total of 56 175 patient visits were included in the study. Of these, 18 362 patients presented in the medicine unit, 13 569 in the surgery unit, 14 179 in the orthopedics unit and 10 065 in the emergency physician unit.

The overall proportion of admitted patients was 17 661/56 175 (31.4%). The proportion of admitted patients for each unit was as follows: medicine 8 073/18 362 (44.0%), surgery 4 303/13 569 (31.7%), orthopedics 2 012/14 179 (14.2%), Emergency physician unit 3 273/10 065 (32.5%).

For the medicine unit, a significant correlation was seen between increasing hospital occupancy level and decreased odds for admission with OR 0.89 (CI 0.83-0.96) for occupancy level of 95-100% (p=0.003), OR 0.88 (CI 0.81-0.96) for 100-105% (p=0.005), OR 0.80 (CI 0.69-0.93) for >105% (p=0.004) compared to when operating at <95% occupancy level. Nagelkerke’s R² = 0.254.

For the orthopedics unit, a similar correlation was observed for occupancy level of 100-105% (p=0.001) OR 0.78 (CI 0.68-0.91). Nagelkerke’s R² = 0.264.

For the emergency physician unit, a trend to an association between decreased odds for admission and occupancy level of >105% was observed OR 0.85 (CI 0.71-1.02) (p=0.081). Nagelkerke’s R² 0.221.

No significant correlation (p=0.144) between hospital occupancy level and odds for admission was seen in the surgery unit. Nagelkerke’s R² = 0.152.

Discussion

A significant correlation between increasing hospital occupancy level and decreased odds for admission was observed for the medicine unit and orthopedics unit. The authors call for a humble interpretation of the results, as the predictive power of the models was highly limited. Models of better predictive power, taking diagnosis, comorbidity and vital parameters into account are under development and readers could look forward to more information on the matter shortly.

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Rez de Jardin poster area

HOW MAJOR SPORTING EVENTS INFLUENCE DEMAND IN EMERGENCIES?

Lucia Pardo Romera (1), Maria Dolores Pascual Muñoz (1), María Dolores Gambin Ruíz (1), Daniela Rosillo Castro (2)

1. Emergency department, Hospital General Universitario Reina Sofía, Murcia, Spain

2. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: Emergency department, Football, assistance

OBJETIVES: the purpose of our study is to determine whether there are differences in the demand for care in our emergency department between a normal day and days of the end of the World Cup and soccer UEFA Euro won by our country

METHODOLOGY: We chose the two Sundays prior to the finals in both matches, in which our national football team did not participate in any sporting event and we compare with the final days of the championships. Select the time zone from 20.30 - 22.30 since this took place both parties. We conducted a retrospective review of medical records of patients seen during those days. The variables studied were: incidence, sex and severity.

RESULTS: We obtained a total of 429 patients in the days of the finals in both parties, of which 213 claimed in the World Cup and at Euro 216. 518 corresponded to the previous Sunday in the World Cup final, while 469 in the UEFA Euro. The World Day came 103 males (48.4%) of which only 8 (7.76%) at the time of the party, 110 women (51.6%) during the day and 8 (7.27%) during the meeting. Getting a claim in that time slot of 42.8% in men and 57.14% women to the level IV (less urgent), compared to a 44.44% women and 55.55% men at Level III (emergency).

On Sunday before the World Cup final (27 June and 4 July) came 247 men (47.7%), of whom 21 (8.5%) during the selected interval and 271 women (52.3%), 32 (11.8%) during treatment. With demand of 55.5% men and 44.5% women of level IV. For level III got 46.1% of men and 53.9% women.

During the day of the Final of UEFA Euro 89 men demanded assistance (41.4%), compared to 126 women (58.6%). Of these came during the match 6 men (37.5%), of which 2 (33.33%) were Level IV, 4 (40%) level III and 10 women (62.5%), 4 (66.66%) Level IV and 6 (60%) Level III.

On Sunday before the UEFA Euro (17 and June 24) we have 55 patients in total, with 25 men (45.5%) and 30 women (54.5%). From which we obtain 50% for both sexes to Level IV, while in Level III have 15 men (60%) and 10 women (40%).

CONCLUSIONS: After this we can say that we found a slight decrease in the demand for care in the final selection over other days studied.

We observed a significant decrease in the time zone of the game, but not a great variation in sex being slightly higher

in women. Regarding severity level we can say that there is variability, with Level III over the incident.

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Rez de Jardin poster area

INTENSIVE USE OF ED SERVICES IS ASSOCIATED WITH INCREASED ODDS OF PATIENTS LEAVING THE ED OF HELSINGBORG GENERAL HOSPITAL AGAINST MEDICAL ADVICE.

Mathias Blom (1), Kjell Ivarsson (2)

1. Akutcentrum Helsingborg, Lund University, Helsingborg, Sweden
2. Akutcentrum, Helsingborgs lasarett, Helsingborg, Sweden

Corresponding author: blom.mathias@gmail.com

Keywords: Leaving against medical advice, Intensive use of ED services, Emergency department crowding

Background

There exists a body of literature indicating a link between many patients experiencing long ED length of stay (EDLOS) and patients deciding to leave the ED against medical advice. Considering EDLOS being dependent on many different factors, the authors suggest that it is valuable to investigate the association between patients leaving against medical advice and a more concrete measure of ED utilization.

Leaving against medical advice has gained interest as a performance indicator of Swedish emergency care since the Swedish Social Board exhorted all Swedish EDs to systematically track this measure in 2011.

Objective

The objective of the present study is to reveal any association between intense utilization of ED resources (measured as visits per shift) and the odds for leaving against medical advice for patients presenting in the ED of Helsingborg general hospital in 2012.

Methods

The ED information system Patientliggaren[®] was used to identify all patients presenting in the ED of Helsingborg general hospital in 2012 and to gather data on their baseline characteristics.

The ED of Helsingborg hospital uses a "triage-to-specialty" approach to emergency care, with separate units for patients presenting with medical, surgical and orthopedic problems, as well as a unit staffed by emergency physicians capable of handling all conditions.

Binary logistic regression models were developed for each unit, to evaluate any association between the utilization of ED resources (indicated by shifts experiencing more visits than the 75th percentile for the current shift type and unit) and the odds for leaving against medical advice. The models were designed to rule out confounding from shift of presentation, patient age, triage priority and hospital occupancy level.

The appropriateness of the model was addressed by Nagelkerke's R², as well as through inspection of the

standardized residuals and Cook's distance. Association between utilization of ED resources and odds for leaving against medical advice was quantified as the odds ratio (OR) for leaving against medical advice for patients presenting on a shift experiencing many visits compared to presenting on other shifts.

Results

A total of 56 175 patient visits were included in the study. Of these, 18 362 patients presented in the medicine unit, 13 569 in the surgery unit, 14 179 in the orthopedics unit and 10 065 in the emergency physician unit.

The overall proportion of patients leaving against medical advice was 1 106/56 175 (2.0%). The proportion of admitted patients for each unit was as follows: medicine 377/18 362 (2.1%), surgery 319/13 569 (2.4%), orthopedics 258/14 179 (1.8%), Emergency physician unit 152/10 065 (1.5%).

For the medicine unit, a significant correlation was seen between the odds for leaving against medical advice and presenting on a shift subject to many patient visits (OR 1.71, CI 1.39-2.11) ($p < 0.0001$). Nagelkerke's R² = 0.189.

The same pattern was observed for the surgery unit (OR 1.66, CI 1.32-2.09) ($p < 0.0001$) (Nagelkerke's R² = 0.132) and for the orthopedics unit (OR 1.57, CI 1.22-2.02) ($p < 0.0001$) (Nagelkerke's R² = 0.081). However, the inverse pattern was true for the emergency physician unit (OR 0.69, CI 0.49-0.99) ($p = 0.041$) (Nagelkerke's R² = 0.125).

Discussion

A significant correlation between intense utilization of ED resources and the odds for patients leaving against medical advice was observed for all units. The inverse association in the emergency physician unit is likely to be explained by the often observed propensity of nurses to direct older patients with great co-morbidity and diffuse symptomatology to this unit rather than to the other units. This group of patients is unlikely to leave against medical advice. Future studies aim to better describe the characteristics of patients leaving against medical advice, though it is a troublesome task as the data for these patients is often scarce due to their premature leave.

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Rez de Jardin poster area

PATIENT WAITING TIMES AT THE KOMFO ANOKYE TEACHING HOSPITAL: A STUDY IN AN URBAN EMERGENCY DEPARTMENT OF A DEVELOPING COUNTRY

Peter Agyei-baffour (1), Peter Donkor (2), Beth Ebel (3), Paa Kobina Forson (4), Charles Nathan Mock (3), Kwaku Nyame (4), George Oduro (4), Chris Oppong (4), Rockefeller Oteng (5)

1. Community Health Department, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
2. School of Medical Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, United States
3. Harborview Injury Prevention Centre, University of Washington, Seattle, United States

4. *Emergency Medicine, Komfo Anokye Teaching Hospital, Kumasi, Ghana*

5. *Emergency Medicine, University of Michigan, Michigan, United States*

Corresponding author: Kaforson@yahoo.com

Keywords: Emergency department length of stay, triage, Emergency department

BACKGROUND: There are reports of long waiting times of patients in emergency departments(ED) and has been linked to poor outcomes of patients.

Some studies have suggested strategies to reduce length of stay including fast tracking, patient streaming system and lean theory model.

The ED at KATH sees 30,000 patients each year and has challenges with overcrowding.

OBJECTIVE: To assess the length of stay of ED patients and explore strategies to reduce length of stay.

METHODS: A review of 260 charts of patients sampled by stratified proportional sampling in the KATH ED over 6 months in 2011. ED length of stay (EDLOS), triage time and time to ED doctor assessment and were compared to the waiting times as prescribed by the modified South African Triage System (SATS).

95 physicians and nurses completed questionnaires that described their views on ED overcrowding, patient length of stay and possible solutions to these challenges.

Data analysis was done using STATA 11.0.

RESULTS: Most patients (86%) were assessed within 10 minutes of registration at the KATH ED. Average triage times were 5mins in the ED. The lower severity zones were associated with longer times to MD assessment but there long EDLOS in all zones of care.

Inappropriate ED attenders and inadequate space were identified as causes of overcrowding in the ED. Poor patient database and prolonged specialty consultation were causes of long length of stay.

CONCLUSION: KATH ED has a challenge with long length of stay. A study on lean theory has been conducted and an electronic database system has been designed and being piloted following this study. Follow-up impact study is being conducted.

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Rez de Jardin poster area

VIOLENCE AGAINST HEALTH WORKERS: FREQUENCY AND PERCEPTION OF THE PHENOMENON.

Alberto Lazzeri (1), Alessia Vega (1), Giulietta Griot (1), Gian Alfonso Cibinel (2)

1. *S.C. Medicina e Chirurgia d'Accettazione e d'Urgenza, ASLTO3, Ospedali Riuniti di Pinerolo e ZOHE, E-Health Open Zone, Pinerolo, Italy*

2. *S.C. Medicina e Chirurgia d'Accettazione e d'Urgenza, ASLTO3, Ospedali Riuniti di Pinerolo, Pinerolo, Italy*

Corresponding author: alberto.lazzeri@unito.it

Keywords: violence, healthcare workers, frequency and perception

Health care workers of hospitals are potentially exposed to various risks. Some work environments and the multiple tasks performed have a wide variety of hazards. Among these is particularly relevant the risk of violence.

The aim of this study was to evaluate the incidence and perception of the phenomenon of violence against health workers during their professional activities, by patients and / or their caregivers or even colleagues. We also tried to estimate the risk factors, understand the procedures and potential consequences of an event of conflict. Finally, we analyzed the possible options and preventive strategies and training to contrast this issue.

The study was conducted by administering a questionnaire formulated by 22 items. It has been taken into consideration two different realities in Piedmont Region: the Emergency Departments of the S. Croce and Carle Hospital of Cuneo and of the ASL TO 3 – United Hospitals of Pinerolo - Turin. The interview included a total of 130 health workers. This research was then extended through an on-line survey in other hospitals of Central and Southern Italy (Rome, Sandro Pertini Hospital - Naples, St. Paul's Hospital and Polyclinic and Catania, Polyclinic) recruiting other 90 healthy workers.

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Rez de Jardin poster area

CHARACTERISTICS OF OLDER FREQUENT ATTENDERS TO AN INNER-CITY HOSPITAL EMERGENCY DEPARTMENT

Kate O'Donnell (1), David Robinson (2), Kathleen Bennett (1), Geraldine McMahon (1)

1. *Emergency Department, St James Hospital, Dublin, Ireland*

2. *Gerontology Department, St James Hospital, Dublin, Ireland*

Corresponding author: kodonne2@tcd.ie

Keywords: older people, frequent attenders, emergency department

Introduction:

Previous studies of frequent attenders (FAs) to emergency departments (ED) have examined all age-groups. However, with changing demographics older people account for increasing ED attendances. The characteristics of older FAs are poorly understood.

Methods: A retrospective study evaluating ED attendance data over a 3-year period (2009-2011) to the ED of a university teaching hospital. FAs were defined as 4 or more attendances within a 12-month period. Re-attendance or return patients (for same complaint) within a 24-hour period were not included. Patient demographics, presenting complaint and disposition were compared to a cohort of non-FAs. Chi-square tests and logistic regression were used to compare frequent and non-frequent attenders.

Results: There were 137,150 ED attendances between 2009-2011. 21.6% were aged >65 years (n=29,635). Of those eligible for the study (n=19,310 with 28,602 attendances) 4.4% were FAs. FAs accounted for 16.6% of all attendances by patients over 65 years (n=4744). The mean age was 77.2 years (SD, 7.7), with no statistical difference by age. Men were more likely to be FA than women (p=0.003). FAs were significantly more likely to attend with dyspnoea, chest pain and abdominal pain (p<0.0001) than non-FAs. Analysis by referral source showed no significant difference.

Fewer FAs (n=2415) were admitted than non-FAs (n=13234) (51% vs 55.5%, p<0.0001). 15% (n=709) versus 12% (n=2831) were discharged to self-care. There were similar rates of referral back to GP (12% v 12%) or referred to OPD 7% (n=330) v 9.9% (n=2355)

Conclusions:

A small amount of patients contributed disproportionately to overall ED activity in the over 65-year age group. Complaints differ from younger frequent attenders where psychosocial issues and alcohol related presentations predominate. Further prospective study to fully characterise this cohort would be important to inform interventions to reduce ED attendance in the older frequent attenders.

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Rez de Jardin poster area

MANAGEMENT OF TRIAGE IN EMERGENCY DEPARTMENT IN REGIONAL HOSPITAL DURRES, ALBANIA

Ferid Domi (1)

1. Emergency Department, Regional Hospital Durres, Durres, Albania

Corresponding author: feridomi@hotmail.com

Keywords: management, triage, application, reduced dead patients, reduced patients seen, level of triage, regional hospital durres

Background: Triage can be formulated as selection of patients or classification of patients correlated with specific signs that determine level of emergency. It is a process of clinical evaluation of patients before decision of diagnosis and definitive treatment. It is very important in case of a service full of patients and limited number of medical staff, and in this situation patient who needs emergently help must be seen the first.

In regional hospital of Durres, Albania for the first time triage has began applied in year 2010.

In Albanian emergency department (ED) is applied precedence of emergency with four levels: first level red-emergency cases with very high risk for life, must be seen immediately, second yellow-high urgency, must be seen for 5-10 minute, third green-medium urgency, must be seen for 10-30 minute, and fourth white-light level of urgency, can wait till two hours.

We have compared management of ED in year 2009 when application of triage was not done in front of year 2010 when began. We had conclusion that application of triage in year 2010 reduced number of patients seen in ED with 10752 (61170 patients in 2009 and 50418 in 2010). Classification of patients in emergency levels was in order: first level 7041 patients, second level 11855, third level 14288, fourth 17134. Application of triage reduced number of dead patients 11 less (27 in year 2009 and 16 in 2010). Application of triage reduced number of patients seen in ED, because patients without any acute problem did not wait for two or more hours in ED, for them was more easy to go visited at family doctor. After application of triage in our ED is reduced too much expenses for unnecessary manipulations and examinations.

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Rez de Jardin poster area

CRITICAL CARE UNIT IN EMERGENCY DEPARTMENT

Sedat Kocak (1), Himmet Nak (1), Basar Cander (1), Mehmet Ergin (1), Mehmet Gul (1), Sadik Girisgin (1)

1. Emergency department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

Corresponding author: skocak@konya.edu.tr

Keywords: critical care, emergency department, intensive care

Background: Critical care unit (CCU) or acute care unit in emergency departments (ED) is still discussed at Turkey. It is well known that the patients who needs critical care are always problematic. Our ED have had level 3 CCU for 8 years. In this writing, we discussed performance of our CCU for last year in terms of patients' clinical and demographic status.

Methods: During 2011, the demographic characteristics, diagnoses, durations of treatment, mechanical ventilation requirements, and mortality data of all age groups patients whose followed up and treated in our emergency intensive care unit were evaluated. We collected data from hospital data base system.

Results: In 2011, the number of admission to our ED was 42,636. The number of patients admitted to our CCU was 1325 (3.1%), 722 (5.5%) of whom was male and mean age of all was 60.6 year. The final diagnosis were cerebrovascular accidents, multiple trauma, sepsis, malignancies and related complications. While 83.4% of all were nontraumatic and medical cases, 16.6% of were admitted due to trauma. There was 25% of patients who had needed mechanical ventilation with different time interval. The mean admission time was 4.5 days and 947 of all (71.4%) was transferred to other departments to continue their follow up, 222 of all (16.8%) was discharged from CCU and unfortunately 156 patients (11.8%) died during follow up period.

Discussion: The important percentage of ED visits are belonging to patients who need critical care and every years this number has been increased. These patients stay

at ED for a long time due to multiple comorbidities, unavailable bed at CCU, discordance between clinical departments, difficult in diagnosis and problems in patient transfers between hospitals. These patients have been remain for a long time in the emergency room due to multiple problems, lack of intensive care beds, interdisciplinary conflict, diagnostic difficulties and transfer problems. In addition, these patients make busy to emergency physicians for a long time and they can not get enough critical care who need to take. From this perspective, emergency critical care unit will remove an important need.

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Rez de Jardin poster area

TIME IS MONEY – THE ECONOMIC IMPACT OF POC ON THE ED

Ulf Martin Schilling (1)

1. Emergency department, University hospital Linköping, Linköping, Sweden

Corresponding author: ulf.martin.schilling@gmail.com

Keywords: point of care, economy, costs

Background: With Swedish ED's getting independent units in increasing numbers as specialized emergency physicians are taking over, economic pressure is transmitted to the ED. The use of POC-systems is getting more and more promoted as these systems allow rapid analysis of blood-samples. In this study, we analyzed the potential economic impact of the use of the iSTAT POC system at the ED of Linköpings university hospital.

Methods: Prices for the test-batteries Chem8+, CG4+ and TNI and for the analyzers were given by the manufacturer. A three years amortization was assumed for the analyzers. Prices for all tests included in these batteries were researched by the hospitals central laboratories official catalogue using the price for acute analysis. With staffing being the major cost at the ED, the cost for each single minute a patient attended the ED was calculated using the calculated total staffing costs per patient on the hypothesis that any reduction in time to process a patient could be transmitted into reduced staffing. Fixed costs as for local rents, for example, were omitted in the analysis. The difference in time for the available results of analysis by POC and by the central laboratory was researched in a study with 41 patients by direct comparison.

Results: The total of iSTAT-tests costs a 33US\$ per patient. The similar tests performed acute by the central laboratory cost 144US\$. This means that for approximately the same analysis performed by the central laboratory, costs increase by 111US\$/patient or 4.440.000 US\$ on 40.000 patients. The delay between POC-results and central laboratory results was 48.5 minutes (SD±28.67 min). On a total of 40.000 patients this would be 32333 hours per year. With staffing distributed evenly during the year, one minute staffing for the ED would cost 24.08 US\$. With 40.000

patients per year, statistically every 13.14 minutes a new patient will arrive at the ED. With an average stay of 3.5 hours (210 minutes) there will be constantly 16 patients at the emergency department, resulting in a staffing cost of 1.5 US\$/patient/minute. The time spared by POC would translate into indirect savings of 2.910.000 US\$ (48.5 min x 1.5 US\$/min x 40.000 patients).

Potentially, 7.350.000 US\$ could be saved by the stringent use of POC iSTAT on 40.000 patients in our setting. It must be kept in mind that not all patients can or must be diagnosed using the panel of analysis provided by the actual applications, and that the omission or adding of further samples might affect the realizable savings, as well as it might not be possible to translate time saved into 100% savings in staffing costs.

Beside the pure economic impact for the hospitals ED, a reduction in waiting time could help to reduce overcrowding and related problems.

Conclusions: The stringent use of POC might result in major economic impact for the ED if the patients could be treated using POC only and all potential indirect savings being realized.

Considering the potential savings on waiting times, POC might result in increased patient safety, patient satisfaction and help to counter the problem of overcrowding at the ED.

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Rez de Jardin poster area

CLINICAL EVALUATION, VALIDATION AND CROSS-TESTING OF THE POINT-OF-CARE SYSTEM ISTAT™ AT THE EMERGENCY DEPARTMENT VERSUS CENTRAL LABORATORY ANALYSIS.

Ulf Martin Schilling (1)

1. Emergency department, University hospital Linköping, Linköping, Sweden

Corresponding author: ulf.martin.schilling@gmail.com

Keywords: point of care, validation, core laboratory

Background: In the emergency department (ED), numbers of blood samples are taken on a daily base. Due to their fast results, point of care analysis systems (POC) are applied increasingly at the ED. In this study, we validated the quality of the POC iSTAT™ (Abbot point of care™) for the most common blood samples taken at the ED of Linköpings university hospital.

Methods: Clinically stable patients aged 18+ presenting to the ED due to shortness of breath or chest pain were identified at the triage point of the ED. Eligible patients were enrolled in the study on a voluntary base. 41 patients chose to participate. In all patients, the following tests were performed on venous blood: iSTAT Chem8+ (sodium Na+, potassium K+, chloride Cl-, ionCa++, glucose glu, urea BUN, creatinin Crea, hematocrite Hc, hemoglobin Hb), and CG4+ (i.e. venous bloodgas VBG + lactate). Similar tests were performed parallel at the central laboratory of the hospital. The TNI analysis was tested but omitted for clinical

consideration due to the routine use of hsTNI by central laboratory instead. All sampling and POC-analysis was performed by one single nurse, and all samples of each patient were taken to central and local analysis at the same time. As the POC system was evaluated for potential use, the results presented by iSTAT were not used for clinical application. Statistical analysis was performed using Pearson's correlation coefficient on each single item.

Results: The results of the POC analysis were available 48.5 minutes earlier (SD±28.67 min) than the central laboratories results. (fig 1)

The Chem8+ results between iSTAT and central laboratory correlated in a high degree, with the least correlation at time-relating items as K⁺ ($\kappa=0.77$), Cl⁻ ($\kappa=0.82$) and ionCa⁺⁺ ($\kappa=0.86$). All other items ranged between $\kappa=0.9$ (Na⁺) and $\kappa>0.95$ (glu, BUN, Crea, Hk, Hb). (fig 2) For the CG4+, pH revealed a κ of 0.87, pCO₂ $\kappa=0.9$, base excess BE $\kappa=0.9$, HCO₃⁻ $\kappa=0.72$, pO₂ $\kappa=0.62$, SpO₂ (saturation) $\kappa=0.77$. Lactate analysis showed a $\kappa=0.94$. (Fig 3) The majority of the results from the central laboratory had a pH, BE and HCO₃⁻ lower than the POC, with pCO₂ and lactate elevated for the central laboratory results which might be concordant with ongoing metabolism during time delay. Interestingly, central analysis showed a generally higher SpO₂ and pO₂ than POC which could not be explained by other means than contamination during processing. The deviating values might have resulted in inadequate treatment in the clinical context. When an arterial blood gas was analysed by POC and central laboratory (20 samples), we found the following results: HCO₃⁻ $\kappa=0.9$, SpO₂ $\kappa=0.93$, all other $\kappa>0.95$. (Fig 4)

Conclusion: The electrolyte analyses performed by the POC-system iSTAT correlate to a very high degree with the analysis provided by our central laboratory. Using a VBG, the correlation was not satisfactory with a very high degree of suspicion regarding the results provided by the central laboratory. The analysis was repeated with arterial blood samples showing very high correlation between POC and central analysis. When confronted with this fact, the information was provided that venous BG was not analyzed at the central laboratory. As VBG was used as standard analysis temporarily when changing the system of triage at the ED, the previous unawareness regarding this fact due to a lack in communication must be seen as major risk for ED-patients. Even if accepting the Swedacc accreditation of central laboratories, our results suggest that one should not trust central laboratory results unquestioned and that constant bilateral communication between the clinician and the laboratory is required to ensure patient safety.

The POC iSTAT-system might be considered a potential POC for use at the ED. Furthermore, our findings suggest that POC might serve as independent control system for the clinician to find potential problems in the process of blood sample analysis.

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Rez de Jardin poster area

END OF LIFE IN THE EMERGENCY DEPARTMENT - A ONE YEAR RETROSPECTIVE STUDY

Cédric Gil-Jardiné (1), Nicolas Morel (1), Marie Floccia (2), Guillaume Valdenaire (1), Matthieu Biais (1,3)

1. Pôle Urgences/SAMU/SMUR, CHU Bordeaux, Bordeaux, France
2. Pôle de gériatrie et gérontologie clinique, CHU Bordeaux, Pessac, France

3. Université Victor Segalen Bordeaux 2, Bordeaux, France

Corresponding author: cedric.giljardine@gmail.com

Keywords: End of life, palliative care, emergency department

Introduction :

End of life management in the Emergency department (ED) is a more and more frequently asked question in France but also in anglo-saxons countries. According to sources, 75 to 85% of French died today in hospital against 38% and 58% in the 1970s and 1990s.. This is a relatively new phenomenon that mainly evolved and gradually increased during the 20th century. It's related to the evolution of the concept of death which has been the result of an illness. Medicine supports diseases, it must support the death. Thus, in the emergency services, we realize that the management of end of life is far from an exceptional situation.

Objective :

The main objective of this study was to determine the demographics of patients who died in the ED of the University Hospital of Bordeaux.

Patients and methods :

We conducted a retrospective two-center study in the general ED of the university hospital of Bordeaux, Saint André (HSA) and Pellegrin (HP). Each has its own medical orientations. HSA is a medical emergency unit particularly specialized in internal medicine, cardiology and gastrology. HP is divided into two units called « Emergency Care » (EC) and an intensive care unit (ICU). There is both a Trauma Center and Stroke Center. We included all patients who died in service during the year 2012. It was carried out using the computerized quotation system of the hospital. Statistics were performed using chi-2 and Student tests.

Results :

In total, 504 patients died in our EDs during the year 2012, 308 in HP and 196 in HSA. This represents 25% of in-hospital deaths of the two sites involved in the study and 16% of the entire hospital. We find 48% of men and 52% women. The average age of the entire population is 75.2 years (SD: 19.6 years), with extremes at 1 year and 108 years. It is much higher excluding the UK: 84.3 years (SD: 11.1 years). The percentage of patients older than 75 years is higher in HSA (83.7% vs. 53.7%, $p<0.01$) in contrast to the percentage of patients under 65 years (8.1% vs. 34.1 %, $p<0.01$). The average length of stay was 30.5 hours (95% CI: [27.75 to 33.25]). The stays are shorter HP ($p<0.01$). Thus, there are more patient whose stay exceeds 3 days in HSA than in HP (20% vs. 4%, $p<0.01$). If patients died at the HP ICU are excluded, these differences are not significant except for the length of stay, still longer in HSA (37 hours vs. 26 hours, $p=0.01$). Only 20% of patients who died lived in institutions before admission and more particularly to HP where a large majority of patients who died from their home (76.1%). Sex ratio is different between the two sites

(women: 60% for HSA vs 40% for,HP, $p < 0.01$). Inside HP, the patients are younger in the ICU than in EC (respectively 63 vs. 82 years, $p < 0.01$).

Discussion :

Deaths in our emergency department represent 15% of in-hospital deaths, which is higher than the national average. The differences between the dead people in different sites are linked to the specific recruitment. In our study, this difference is thus related to the existence of Stroke and Trauma Center at HP. Patients in the ICU are more often men and are generally younger. We can therefore say that the patients suffering from trauma and neurovascular diseases are more severe and therefore with more lethal diseases. It is also interesting that patients who died outside the ICU are relatively congruent in HSA and HP. More generally speaking, the patients who have to die in the emergency services mostly live at home (HSA: 60% vs. HP: 90%) which let us imagine an acute episode at the origin of the emergency presentation. Residence times are often short often do not leave time to refer patients to other services.

Conclusion :

In the ED, death arrives rapidly in good health patients, relatively with often brutal diseases. Stay of these patients in the service are often short, making them difficult to transfer.

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Rez de Jardin poster area

STAY LONG TERM IN THE INTENSIVE CARE UNIT: WHOM ARE THE PATIENTS? AND WHAT ARE THE CONSEQUENCES?

Nadia Harbouze (1), Hanane Ezzouine (2), Bouchra Abdous (1), Boubaker Charra (3), Abdellatif Benslama (4)

1. Anesthesiology and intensive care, university teaching hospital Ibn Rushd-Casablanca-Morocco, casablanca, Morocco
2. anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-Morocco, casablanca, Morocco
3. anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-morocco, casablanca, Morocco
4. anesthesiology and intensive care, university teaching hospital Ibn Rushd.CASABLANCA.MOROCCO, casablanca, Morocco

Corresponding author: ezzouinehanane@yahoo.fr

Keywords: STAY LONG COURSE, INTENSIVE CARE UNIT, EVOLUTION

STAY LONG COURSE IN INTENSIVE CARE IS AN EVENT THAT ITS IMPACT ON PATIENT AS WELL AS ON THE MEDICAL AND NURSING TEAM .Nous have carried IN MEDICAL INTENSIVE CARE UNIT OF UTH IBN RUSHD -CASABLANCA A observational study OVER 3 YEARS FOR PATIENTS STAYING IN INTENSIVE CARE OVER 15 daily.The sTUDY INCLUDED 21 PATIENTS. THE mean aGE OF PATIENTSwas 51 years old. THE SEX RATIO MAN / WOMAN wAS 3.2. neurological and infectious diseases were the most reasons for the admission in the ICU. 33% OF PATIENTS hAD A HEART DISEASE BEFORE.95% OF PATIENTS hAD BLADDER TUBE

AND CENTRAL VENOUS CATHETER, 100% WERE intubated and VENTILATED .THE MEAN STAY IN THE ICU WAS 36 daYS.The urinary infection is common in 47% Pulmonary: 17-80% Blood: 8-38%, catheter: 9-42%.

the germs found WERE pseudomonas: 11-52%; Klebsiella: 5-23%; Acinetobacter: 10-47% Yeast: 8-38%.

Recourse to vasoactive amines was needed was 6-28%. Deaths rate during the study period is 17-80%

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Rez de Jardin poster area

JOB SATISFACTION IN EMERGENCY NURSE PRACTITIONERS

Mohammadali Fahimi (1)

1. Emergency Department, Ahwaz General Hospital, Ahwaz, Iran, Islamic Republic of

Corresponding author: fahimi76@yahoo.com

Keywords: Emergency, Nurse, Satisfaction

Introduction:

Job satisfaction plays an important role in providing an optimum health care in medical-related organizations. Emergency departments with the high level of stress, impacts the staff quality of life and job satisfaction. The recent study is an assessment of the job satisfaction in Iranian emergency nurse practitioners.

METHODS:

The recent cross-sectional study was performed on 144 nurse practitioners working in the emergency departments of three distinct general hospitals across Iran. The job satisfaction was evaluated using a questionnaire with five distinct categories of job satisfaction, the communication with the supervisor and colleagues, the promotion opportunities, the satisfaction from the salary and the job environment. Statistical analysis was performed using SPSS 13.05 .

RESULTS:

The participants were 33 men (27.3%) and 88 women (72.7%). The mean age of the participants was 32.7 0.8 years old. The mean scores of job satisfaction, communications with supervisor and colleagues, promotion opportunities, income level and the job environment were 59.8 1.06 (out of 110) of 55), 16.4 0.6 (out of 35) 16.1 0.5 (out of 35) respectively.

CONCLUSIONS:

The findings may motivate hospital leaders in order to make changes for a better atmosphere to enhance the work life of emergency staffs and nurses and improve the job satisfaction for better quality care delivery.

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Hall Accueil Expo poster area

RELATIONSHIP BETWEEN END-TIDAL CARBON DIOXIDE AND HCO₃ IN NON INTUBATED PATIENTS WITH SUSPECTED METABOLIC DISORDER

Elham Pishbin, Sharifi Mohammad Davood, Ghazaleh Doustkhah Ahmadi, Ehsan Bolvardi, Hamidreza Reihani

Emergency Department, Imam Reza hospital, Mashhad University of Medical Sciences, Mashhad, Iran, Islamic Republic of

Corresponding author: pishbine@mums.ac.ir

Keywords: Arterial Blood Gas, end tidal co₂, Metabolic disorder

Background

Patients who are admitted to the emergency departments (ED) often need to be scrutinized in terms of metabolic disorders; since the arterial blood gas (ABG) sample has been used to investigate these problems. On the other hand, End tidal CO₂ (EtCO₂) measurement via capnography in the emergency department has become widespread in recent years. Based on previous studies, it seems that there is a relationship between EtCO₂ and ABG parameters level. We decide to evaluate the association of EtCO₂ with measured serum bicarbonate (HCO₃) and to assess whether EtCO₂ via nasal capnography in non-intubated E.D patients could be used as a predictor of metabolic acidosis?

Method

This prospective cross-sectional study has been carried out during a 6-month period in ED of Imam Reza hospital, Mashhad, Iran. During the study period, every ED patient (age>15 years) requiring ABG analysis for any medical indication, regardless of presenting symptoms, had a simultaneous ETCO₂ measurement. Patients with COPD, decreased level of consciousness and those who did not complete the consent form were excluded. The demographics and clinical outcomes of the patients were recorded and analyzed by descriptive tests, Student T-test, Pearson correlation and Logistic regression with SPSS Version 11.5.

Result

Sixty four patients were enrolled with the mean age of 55.4 years (range, 15-90 years). Most frequent presenting symptom was nausea and vomiting (24 patients) and most frequent final diagnosis was renal failure (29 patients). Sixteen patients had normal metabolic status, 38 patients had acidosis and 10 patients had alkalosis. Linear regression analysis revealed a significant relationship between ETCO₂ and Ph, HCO₃ and PaCo₂ with Pearson correlation coefficients of 0.368, 0.869 and 0.795 respectively (P<0.001). ETCO₂ and HCO₃ were in a significant relationship in patients with acidosis with Pearson correlation coefficients of 0.882 (P<0.001) but it was not true for patient with alkalosis.

Conclusion

ETCO₂ and ABG parameters are in a meaningful relationship in all patients and the relationship is significantly stronger in patient with acidosis compared to others. If confirmed by a larger study, ETCO₂ measurement can be used as a screening tool to predict the presence of acidosis in ED patient suspicious to have metabolic disorder.

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Hall Accueil Expo poster area

PROGNOSTIC FACTORS OF MORTALITY IN ACUTE RENAL FAILURE AT THE EMERGENCIES

L. Ait Sayad (1), K. Khaleq (1), B. Boumahtta (1), F. Benaissa (1), K. Yaqini (1), H. Louardi (1)

1. Accueil des urgences, CHU Ibn Rochd, Casablanca, Morocco

Corresponding author: lamyasayad@gmail.com

Keywords: acute renal failure, prognostic factors, mortality

INTRODUCTION: The acute renal failure (ARF) is defined as a brutal and constant fall of the renal function responsible for a toxin retention and a dysregulation of the homeostasis of the extracellular fluids and electrolytes. The absence of diagnostic criteria contributed to the diversity of evolutivity and mortality of ARF in the literature. The goal of our work is to study the various aspects forecast of mortality at emergencies.

MATHERIELS AND METHODS: Retrospective study conducted to HUC of Casablanca during a period of 2 years and half from January 2009 to June 2011. The criteria of inclusions were: all patients hospitalized for different pathology at the emergency department having an ARF. This ARF was maintained when faced with: an increase of creatinine in blood >5mg/L or > 50% compared to the initial value, or a diuresis < 0,5ml/Kg/h for more than 6 hours or the appearance of complication making necessary the recourse to dialysis. Were excluded from the study ARF on chronic renal failure. 20 items were studied bearing on epidemiology, clinic, classification of RIFLE and AKIN, mechanism of ARF, biology, radiology, therapeutic methods and complications secondary to ARF. The results were seized and analyzed through the software SPSS 16.0 (p ≤ 0.05 is considered significant).

RESULTS: On 7500 admissions, 237 cases of ARF were listed so one incidence of 3,16%. The mean age of the patients deceased was 51± 20.24 years with a slight male predominance (sex-ratio =1.4). Total mortality was 37.1%. The leading causes of mortality objectified in the study were: a septic shock (48.13%), a heart rhythm disorders (29,54%), a syndrome of acute respiratory distress (13.63%), an ARF obstructive from neoplastic origin (11.36%), a cerebral commitment among polytraumatized patients (7.95%) and a multiviscerale failure (3.4%). The univariate logistic analysis made possible to raise the following factors as factors of bad prognosis correlated with high mortality : the case history of heart failure (p=0,042), the dehydration (p= 0.000), the jaundice (p= 0.31), the hypotension (p=0.003), the desaturation (p= 0.005), the respiratory distress (p= 0.024) , the impaired consciousness of traumatic or metabolic or infectious origin (p= 0.003), the pre-renal mechanism by hypovolemia (p= 0.000), the stage R and F of the classification of RIFLE and stage 3 of AKIN, the resort to the rehydration(0.02), the vascular filling (p=0,043) , required recourse to vaso-active

drugs ($p=0.01$) and mechanical ventilation ($p=0.000$), and the complications of ARF: sepsis ($p=0.02$), multiviscerale failure ($p=0.050$) and heart rhythm disorder ($p=0.000$). The multivariate study conclude that oliguria is an independent predictor factor of mortality with an OR=13,806% and an IC (95%) = 1,125 - 169,516.

DISCUSSION: ARF at the emergencies is serious and is burdened with important morbi-mortality. Classification RIFLE had a forecast interest but remains little used in our context. It is necessary to define the risk situations and to begin an early treatment to allow an optimal recovery of the renal function

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Hall Accueil Expo poster area

THE SEPTIC ACUTE RENAL FAILURE AT THE EMERGENCIES

L. Ait Sayad (1), K. Khaleq (1), B. Boumahtta (1), M. Nafaa (1), M. Moussaoui (1), H. Louardi (1)

1. Accueil des urgences, CHU Ibn Rochd, Casablanca, Morocco

Corresponding author: lamyasayad@gmail.com

Keywords: acute renal failure, sepsis, epidemiology, treatment, evolution

INTRODUCTION: The severe sepsis is defined as being a septic state associated to an organic failure. The acute renal failure (ARF) complicating a sepsis account for 41.4% to 48% (1). The goal of this work is to study the epidemiologic, therapeutic and prognostic aspects of septic ARF.

MATHERIELS AND METHODS: Retrospective study conducted on 30 months in HUC of Casablanca. All the adults admitted at the emergency department having an ARF secondary to a sepsis were included. This ARF was retained on: an increase in the creatinine in blood $>5\text{mg/L}$, or $>50\%$ compared to the initial value, a diuresis $<0.5\text{ml/Kg/h}$ during more than 6 hours and appearance of complication making necessary the recourse to dialysis. The studied items went on epidemiology, therapeutic and evolution of these ARF. The data were treated and analyzed through the software SPSS 16.0 (a value of $p \leq 0.05$ is considered significant).

RESULTS: 237 cases of ARF were retained whose 36 cases secondary to sepsis which represents 15,2% of the whole of ARF hospitalized. The mean age of the patients was 52.57 ± 18.78 years with a male predominance (59,5%). The causes of septic ARF were: Community pneumopathies (14 cases), bacterial meningitides (8cases), sepsis of orthopedic origin (4 cases), the pancreatitis (3cases), the angiocholytes (4 cases), Communityperitonites (3 cases), leptospirosis (1case). The treatment of septic ARF consisted of a medical treatment and a substitution treatment. The medical treatment consisted on: a vascular filling in 100% among patients having a sepsis. The antibiotherapy was managed at a rate of an mono-antibiotherapy among 24 patients and of an bi-antibiotherapy among 12 patients. 25 % of patients required the recourse to vaso-active drugs:

Noradrenalin. The treatment by extrarenal purification was carried out at 11.11% of the patients. The evolution was marked by occurred of a death in 58.33% cases while the recovery of a normal renal function was observed in 41,66% cases. The causes of mortality of the septic ARF found in our study are: hyperkaliemy, heart rhythm disorders and multiviscerale failure syndrome.

CONCLUSION: The association of an ARF to a sepsis is provider of a raised mortality in our context (74.5%). The optimization of hemodynamic and the early irradiation of the infectious site make possible to attenuate the severity of ARF. The new biomarkers could help with the tracking of the patients at the risk at emergencies but remain under study.

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COMPARISON OF SHORT TERM PROTOCOLS OF N-ACETYLCISTEIN, BICARBONATE AND SALINE IN PREVENTION OF CONTRAST-INDUCED NEPHROPATHY IN EMERGENCY DEPARTMENT PATIENTS WITH MODERATE OR HIGH RISK UNDERGOING DIAGNOSTIC COMPUTED TOMOGRAPHY

Ahmet Kama (1), Serkan Yilmaz (2), Elif Yaka (3), Erkan Dervisoglu (4), Murat Pekdemir (5)

1. emergency medicine, kocaali university, kocaali, Turkey
2. Emergency Department, Kocaeli University, Kocaeli, Turkey
3. Emergency Department, Kocaeli University, Kocaeli, Turkey
4. nephrology, kocaali university, kocaali, Turkey
5. Emergency Medicine, Kocaeli University, Kocaeli, Turkey

Corresponding author: mdserkan@hotmail.com

Keywords: contrast induced nephropathy prophylaxis,, short term,, emergency department

INTRODUCTION

Contrast induced nephropathy (CIN) is a common cause of acute renal failure. There is a growing interest in prevention of CIN due to the increased use of contrast enhanced radiological studies in the emergency department (ED). Isoosmolar nonionic radiocontrast agents, hydration, avoiding concomitant use of nephrotoxic agents and use of prophylactic agents are suggested preventive measures against CIN. N-acetyl cistein, bicarbonate and 0.9 % NaCl are the established prophylactic agents with certain protocols. However, these protocols may be inconvenient in the emergency department. Furthermore, contrast exposure is frequently unavoidable in emergency settings, even in high risk patients, due to possible life threatening pathologies. While applying different prophylaxis regimens,

there is no evidence about the short term prophylaxis protocol for contrast nephropathy.

Objective: The purpose of this study was to compare the efficacies of short-term protocols of normal saline, n-acetylcysteine, and sodium bicarbonate prophylaxis in emergency department patients with moderate and high risk of CIN who received contrast agent.

METHODS

This prospective, single center, randomized clinical trial was conducted in the emergency department of a tertiary academic hospital within one year period. Adult patients requiring contrast enhancing imagings were examined with respect to risks of CIN according to Mehrane Risk Scoring system. Patients with moderate-high risk scores who consented to participate were eligible. Patients with continuous renal replacement therapy or reported contrast allergy were excluded.

Enrolled patients were randomly assigned to receive 150 mg/kg NAC in 1000 cc saline, 1 mEq/kg bolus plus 1 mEq/kg/hr infusion sodium bicarbonate or 1 ml/kg bolus plus 1 ml/kg/h saline through continuous infusion for 3 hours.

A follow-up after 48-72 hours was arranged for discharged patients while data of admitted patients were obtained through medical records. Creatinine clearance was calculated according to the Cockcroft -Gault equation both at the index visit and 48-72 hours after radiocontrast injection.

Contrast-induced nephropathy was defined as a change in serum creatinine over baseline by 48h-72h, 25% above baseline or an absolute increase in the serum creatinine level of at least 0.5mg/dL

Statistical analysis was performed using SPSS 16 and results were reported with 95% confidence intervals considering $p < 0.05$ as statistically significant. Categorical variables were presented with rates while continuous variables were expressed as means or medians. The distributions were examined using Kolmogorov-Smirnov test. The Kruskal-Wallis test or ANOVA, where appropriate, were used to compare baseline characteristics of the groups. Chi-Square test was used to test the efficacies of prophylactic agents to prevent CIN.

RESULTS

Of the 107 patients randomized in the study, 36, 36 and 35 patients were assigned to NAC, NaHCO₃ and saline therapies, respectively. Mean age of the patients was 71 (95% CI 68-86) and 58 (54,2 %) were male.

Groups were similar regarding baseline characteristics and nephropathy risks. Of the 16 patients (14,9%) who developed CIN eventually, 7 (19,4%) were from NAC patients while 4 (11,1%) from NaHCO₃ and 5 (14,2%) from saline patients. Five of the patients received continuous renal replasman therapy, 3 were from NAC patients and 2 from NaHCO₃ patients. No significant difference was determined in terms of preventing CIN between groups ($p = 0.606$). There were also not significant alterations in creatinin and creatinin clearance of groups ($p = 0.202$, $p = 0.401$)

CONCLUSION

Any of the short term protocols with normal saline, n-acetylcysteine, or sodium bicarbonate was superior to

others in patients admitted to the ED requiring radiocontrast imaging who have moderate and high risk of CIN.

Since CIN and renal replacement therapy rates were similar, short term protocols were found to be a promising prophylaxis method when compared with standard long term protocols in patients exposed to contrast agent in the ED.

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Rez de Jardin poster area

COMPARISON OF EXPRESSIONS OF INFLAMMATORY CYTOKINES IN THE SPINAL CORD BETWEEN THE ADULT AND AGED BEAGLE DOGS

Jun Hwi Cho (1), Joon Ho Bae (2), Yoon Sung Kim (2), Hui Young Lee (3), Chan Woo Park (4), Moo Ho Won (5)

1. *Emergency Medicine, Kangwon National University, Chuncheonsi, Korea, (South) Republic of*
2. *Emergency Medicine, Kangwon National University Hospital, Chuncheon, Korea, (South) Republic of*
3. *Internal Medicine, Kangwon National University, Chuncheon, Korea, (South) Republic of*
4. *Emergency Medicine, Kangwon National University Hospital, Chuncheon, Kiribati*
5. *Neurobiology, Kangwon National University, Chuncheonsi, Korea, (South) Republic of*

Corresponding author: cjhemd@kangwon.ac.kr

Keywords: Aging, Spinal cord, Cytokine

Objective and Methods: Aging is an inevitable process that occurs in the whole body system accompanying with many functional and morphological deceases. Inflammation is known as one of age-related factors, and inflammatory changes could enhance mortality risk. In this study, we compared immunoreactivities of inflammatory cytokines, such as interleukin (IL)-2 (a pro-inflammatory cytokine), its receptor (IL-2R), IL-4 (an anti-inflammatory cytokine) and its receptor (IL-4R) in the cervical and lumbar spinal cord of the adult (2-3 years old) and aged (10-12 years old) beagle dogs using immunohistochemistry and western blotting.

Results: IL-2 and IL-2R-immunoreactive cells were easily found throughout the whole gray matter of the adult spinal cord; in the aged spinal cord, numbers of the cells and their protein levels were apparently increased compared with those in the adult dog. Change patterns of IL-4- and IL-4R-immunoreactive cells and their protein levels were also similar to those in IL-2 and IL-2R; however, IL-4- and IL-4R immunoreactivity in the periphery of the cytoplasm in the aged dog was much stronger than that in the adult dog.

Conclusion: These results indicate that the increases of inflammatory cytokines and their receptors in the aged spinal cord might be related to maintaining a balance of inflammatory reaction in the spinal cord during normal aging.

Po-510*Rez de Jardin poster area***NEURONAL DAMAGE USING FLUORO-JADE B HISTOFLUORESCENCE AND GLIOSIS IN THE SOMATOSENSORY CORTEX INDUCED BY VARIOUS DURATIONS OF TRANSIENT CEREBRAL ISCHEMIA IN GERBILS**

Joon Ho Bae (1), Jun Hwi Cho (2), Yoon Sung Kim (1), Hui Young Lee (3), Chan Woo Park (4), Moo Ho Won (5)

1. Emergency Medicine, Kangwon National University Hospital, Chuncheon, Korea, (South) Republic of
2. Emergency Medicine, Kangwon National University, Chuncheonsi, Korea, (South) Republic of
3. Internal Medicine, Kangwon National University, Chuncheon, Korea, (South) Republic of
4. Emergency Medicine, Kangwon National University Hospital, Chuncheon, Kiribati
5. Neurobiology, Kangwon National University, Chuncheonsi, Korea, (South) Republic of

Corresponding author: cjhemd@kangwon.ac.kr

Keywords: Ischemia, Neuronal damage, Reperfusion

Objective: Although many studies regarding ischemic brain damage in the gerbil have been reported, studies on neuronal damage according to various durations of ischemia-reperfusion (I-R) have been limited. In this study, we examined neuronal damage/death and glial changes in the somatosensory cortex 4 days after 5, 10 and 15 min of transient cerebral ischemia using the gerbil.

Methods: To examine neuronal damage, we used Fluoro-Jade B (F-J B, a marker for neuronal degeneration) histofluorescence staining as well as neuronal nuclei (NeuN, neuronal marker) immunohistochemistry.

Results: In the somatosensory cortex, some NeuN positive (+) neurons were slightly decreased only in layers III and VI in the 5 min ischemia-group, and the number of NeuN+ neurons were gradually decreased with longer ischemic time. F-J B histofluorescence staining showed a clear neuronal damage in layers III and VI, and the number of F-J B+ neurons was gradually increased with time of I-R: in the 15 min ischemia-group, the number of F-J B+ neurons was much higher in layer III than layer VI. In addition, we immunohistochemically examined gliosis of astrocytes and microglia using anti-gial fibrillary acidic protein (GFAP) and anti-ionized calcium-binding adapter molecule 1 (Iba-1) antibody, respectively. In the 5 min ischemia-group, GFAP immunoreactive astrocytes and Iba-1 immunoreactive microglia were distinctively increased in number, and their immunoreactivity was stronger than that in the sham-group. In the 10 and 15 min ischemia-groups, numbers of GFAP and Iba-1 immunoreactive cells were much more increased with time of I-R; in the 15 min ischemia-group, their distribution patterns of GFAP and Iba-1 immunoreactive cells were similar to those in the 10 min ischemia-group.

Conclusion: Our finding indicates that neuronal death/damage and gliosis of astrocytes and microglia were apparently increased with longer time of I-R.

Po-511*Rez de Jardin poster area***DIFFERENCES OF CALCIUM BINDING PROTEINS IMMUNOREACTIVITIES IN THE YOUNG HIPPOCAMPAL CA1 REGION FROM THE ADULT FOLLOWING TRANSIENT ISCHEMIC DAMAGE**

Jun Hwi Cho (1), Yoon Sung Kim (2), Joon Ho Bae (2), Hui Young Lee (3), Chan Woo Park (4), Moo Ho Won (5)

1. Emergency Medicine, Kangwon National University, Chuncheonsi, Korea, (South) Republic of
2. Emergency Medicine, Kangwon National University Hospital, Chuncheon, Korea, (South) Republic of
3. Internal Medicine, Kangwon National University, Chuncheon, Korea, (South) Republic of
4. Emergency Medicine, Kangwon National University Hospital, Chuncheon, Kiribati
5. Neurobiology, Kangwon National University, Chuncheonsi, Korea, (South) Republic of

Corresponding author: cjhemd@kangwon.ac.kr

Keywords: Ischemia, Hippocampus, Calcium

Objective and Methods: It has been reported that the young were much more resistant to transient cerebral ischemia than in the adult. In the present study, we compared the chronological changes of CBPs (CB-D 28k, CR and PV) immunoreactivities and levels in the hippocampal CA1 region of the young gerbil with those in the adult following 5 min of transient cerebral ischemia induced by the occlusion of both the common carotid arteries.

Results: In the present study, we examined that about 90% of CA1 pyramidal cells in the adult gerbil hippocampus died at 4 days post-ischemia; however, in the young hippocampus, about 56% of them died at 7 days post-ischemia. We compared immunoreactivities and levels of calcium binding proteins (CBPs), such as calbindin 28k (CB-D 28k), calretinin (CR) and parvalbumin (PV). The immunoreactivities and protein levels of all the CBPs in the young sham were higher than those in the adult sham. In the adult, the immunoreactivities and protein levels of all the CBPs were markedly decreased at 4 days post-ischemia, however, in the young, they were apparently maintained. At 7 days post-ischemia, they were decreased in the young, however, they were much higher than those in the adult.

Conclusion: In brief, the immunoreactivities and levels of CBPs were not decreased in the ischemic CA1 region of the young 4 days after transient cerebral ischemia. This finding indicates that the longer maintenance of CBPs may contribute to a less and more delayed neuronal death/damage in the young

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Rez de Jardin poster area

NEUROPROTECTIVE EFFECT OF A NEW SYNTHETIC ASPIRIN-DECURSINOL ADDUCT IN A RAT MODEL OF ISCHEMIC STROKE

Jun Hwi Cho (1), Yoon Sung Kim (2), Joon Ho Bae (2), Hui Young Lee (3), Chan Woo Park (4), Moo Ho Won (5)

1. Emergency Medicine, Kangwon National University, Chuncheonsi, Korea, (South) Republic of
2. Emergency Medicine, Kangwon National University Hospital, Chuncheon, Korea, (South) Republic of
3. Internal Medicine, Kangwon National University, Chuncheon, Korea, (South) Republic of
4. Emergency Medicine, Kangwon National University Hospital, Chuncheon, Kiribati
5. Neurobiology, Kangwon National University, Chuncheonsi, Korea, (South) Republic of

Corresponding author: cjhemd@kangwon.ac.kr

Keywords: Ischemia, Aspirin, Neuroprotection

Objective: Stroke is a major cause of death. This study investigated the preventative effect of a new synthetic drug on brain function in experimentally induced ischemic stroke.

Methods: Male Sprague-Dawley rats were administered aspirin (ASA), decursinol (DA) or ASA-DA before and after ischemic insults. Brain and neuronal damage were examined by TTC staining, PEP-CT, NeuN immunohistochemistry and F-J B histofluorescence. Gliosis was also observed by GFAP and iba-1 immunohistochemistry.

Results: Pre-treatment with 20 mg/kg, but not 10 mg/kg, of ASA-DA protected against ischemic neuronal death and damage, and its neuroprotective effect was much more pronounced than that of ASA or DA alone. In addition, treatment with 20 mg/kg ASA-DA reduced the ischemia-induced activation of astrocytes and microglia.

Conclusion: Our findings indicate that ASA-DA, a new synthetic drug, prevents against transient focal cerebral ischemia, which provides a resource for the development of its clinical application for stroke.

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Rez de Jardin poster area

EVALUATION OF NEUROLOGICAL MANIFESTATIONS OF SYSTEMIC LUPUS IN EMERGENCY DEPARTMENT. A SYSTEMATIC ANALYSIS FROM MEILAHTI HOSPITAL EMERGENCY 2008-2013.

Riitta Luosujarvi (1), Jukka Tolonen (2), Nina Forss (3), Veli-pekka Harjola (4)

1. Department of Medicine Division of Rheumatology, Helsinki University Central Hospital, Helsinki, Finland
2. Department of Medicine, Helsinki University Central Hospital, Helsinki, Finland

3. Department of Medicine Division of Neurology, Helsinki University Central Hospital, Helsinki, Finland
4. Department of Medicine Division of Emergency, Helsinki University Central Hospital, Helsinki, Finland

Corresponding author: jutolonen@gmail.com

Keywords: SLE, Neurology, Emergency

Background. There are 1500 systemic lupus erythematosus (SLE) patients in Finland, 90% of the are female and the diagnosis is set mostly < 30 years.

SLE has numerous different clinical symptoms.

Neurological manifestations of the disease are not the most prevalent but they may be difficult in form of differential diagnosis

Materials and methods. We have screened all visits of SLE patients in Meilahti Hospital Emergency Department (ER) 2008-2013. Data are collected from database.

Visits were classified neurological when the main responsibility for treatment was assessed for neurologist. We also evaluated the number of the patients needed spinal fluid examination in ER. In addition independent observer estimated if neurological symptoms were SLE-related.

Results. 37 SLE patients had 123 visits in Meilahti Emergency Department. Number of visits per patient varied from 1-14 (mean 2.8). 22 visits were classified as neurological. 10/22 visits could be classified SLE related. Spinal fluid examination was made for four patients in ER. 1 had bacterial meningitis, 1 septicaemia and 2 SLE-related neurological symptoms.

Discussion and conclusions. Neurological manifestation of systemic lupus were also in our ER relatively rare which may increase difficulties recognizing them.

It is important to remember that from rheumatoid diseases especially systemic lupus may have neurological manifestations which may be serious.

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Rez de Jardin poster area

THE ROLE OF RISK FACTORS IN MORTALITY OF ISCHEMIC STROKE.

Mohammad Manouchehrifar (1)

1. Emergency Department, Shohada'e Haftom'e Tir Hospital, Tehran, Iran, Islamic Republic of

Corresponding author: arashmanouchehrifar@yahoo.com

Keywords: Ischemic Stroke, Risk factors, Mortality

BACKGROUND: Stroke is a heterogeneous, multifactorial disease

regulated by modifiable and nonmodifiable risk factors. we aimed to

determine relationship between age, sex, hypertension (HTN), diabetes mellitus (DM), abnormal electrocardiogram (ECG), abnormal Doppler

sonography of cervical arteries(DSOCA), focal neurologic deficit (Dysarthria, Paresis) and mortality after 90 days of stroke. METHODS: The study population consisted of 301 first-ever stroke patients (159 female, 142 male) included in the emergency department for five month, filled the form in several visites and documented the risk factors and signs; then mortality of patients after 90 days of stroke, were assisted, and in last step the significance of them in mortality determined by statistical chi-square test. RESULTES: HTN was significantly effective risk factor,(p < 0.001), in 90 days mortality of stroke. Abnormal ECG (p = 0.006), and abnormal DSOCA (p = 0.023) were effective in mortality after 90 days of stroke; whereas the relationship between sex (p > 0.05), age (p > 0.05), DM (p = 0.935) with mortality, wasn't significant. Paresis (p = 0.018), as a sign of VI severity in stroke,was effective in mortality but dysarthria,as another sign, wasn't effective, (p = 0.07). CONCLUSIONS: An improvement in acute-stroke management, possibly evolution of cerebrovascular risk factors, and decrease mortality is reflected by changes in the risk factors and outcome of first-ever stroke patients, that presented in emergency department.

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Rez de Jardin poster area

HEADACHE IN A YOUNG MALE... THE CLOT THICKENS. CEREBRAL VEINOUS SINUS THROMBOSIS AND CROHN'S DISEASE

Charles Miller (1)

1. *Infectious diseases, Oxford Radcliffe Trust, Oxford, United Kingdom*

Corresponding author: charles.miller04@imperial.ac.uk

Keywords: Headache, Cererbral veinous sinus thrombosis, Crohn's disease

Cerebral venous sinus thrombosis is a rare but serious cause of headache. In this case, we present a young male with poorly controlled Crohn's disease who presented with a two week history of headache and fluctuating left sided sensory and motor symptoms. Computed tomography demonstrated changes consistent with either a subarachnoid haemorrhage or venous sinus thrombosis. The ensuing magnetic resonance venogram confirmed

superior sagittal venous sinus thrombosis and an infarct of his right superior frontal lobe. The patient was commenced on low molecular weight heparin and steroids. He required multi-disciplinary input from the stroke physicians, neurologists, gastroenterologists, dieticians and physiotherapists. He made a full neurological recovery and is now on long-term azathioprine. The purpose of this report is to highlight the consideration of venous sinus thrombosis in the diagnosis of headache and as an extra-intestinal complication of Crohn's disease.

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Rez de Jardin poster area

DENGUE VIRAL INFECTION COMPLICATED BY ACUTE TRANSVERSE MYELITIS

Amar Satyam (1), Sohil Pothiwala (1)

1. *Emergency Department, Singapore General Hospital, Singapore, Singapore*

Corresponding author: amarsatyam@yahoo.com

Keywords: acute transverse myelitis, dengue, complication

Background: Dengue fever is endemic in more than 100 countries, mostly in the developing world and also in tropical countries like Singapore. Neurological complication like encephalopathy, encephalitis, seizures and polyneuropathy like Guillain-Barre, Miller-Fisher have been reported, but is rare and the exact incidence is unknown. Spinal cord is infrequently affected following dengue virus infection. Acute transverse myelitis is a rare manifestation with very few cases reported in the literature.

Case report: We report a case of a 43 yrs old Chinese gentleman who was initially admitted for 1 week of fever and diagnosed to have dengue with positive dengue serology and polymerase chain reaction (PCR). After discharge, he presented a day later with acute retention of urine and fever and was catheterized and discharged home with follow up with urology. He presented a day later again with complains of bilateral lower limb weakness and was noted to have flaccid paraplegia on examination. He was re-admitted and MRI of the spine was reported to have diffusely scattered T2 hyperintensity seen within the cord with post contrast enhancement, suggestive of transverse myelitis. He was treated with intravenous immunoglobulin and antiviral medications. After rehabilitation, he was eventually discharged with full neurological recovery.

Discussion: Spinal cord is rarely involved in peri-infectious and post-infectious period following dengue viraemia, causing a spectrum of neurological manifestation. Acute transverse myelitis is a rare manifestation that can occur in either the early (peri-infectious) or late (post-infectious phases) of dengue fever. The exact mechanism of transmission of virus is poorly understood but it can be attributed to direct invasion, immune mediated, and neurotrophic effect. There is a possible relationship of acute flaccid paraparesis with peri-infection and spastic paraparesis with post infection. In view of positive dengue

PCR 1-2 days after acute retention of urine, this may be related to direct invasion by the dengue virus, although it was not detected in CSF. There was clinical suspicion for an infectious myelopathy as he presented with fever and systemic illness; and we must consider the possibility of dengue in endemic areas. When faced with a patient with an acute myelopathy, a magnetic resonance imaging is invaluable. Once a demyelinating pathology is identified, appropriate treatments should be initiated early with IVIG, steroids and supportive. While the time of onset may be hours to days, the time to either partial or complete recovery may require months.

Conclusion: Emergency physicians should be aware that acute transverse myelitis in dengue is a rare but potentially debilitating condition, which can be reversed with early diagnosis and management.

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Rez de Jardin poster area

CHRONIC MIGRAINE AND DAILY CHRONIC HEADACHE: RETHINKING DIAGNOSIS. TWO CASES REPORT

Ana Isabel Condon Abanto (1), Sara Visiedo Sanchez (1), Teresa Escolar Martínez-berganza (1), Jose Luis Del Rio Aisa (1), Miguel Rivas Jiménez (1), María Peña Lopez Galindo (1)

1. Emergency department, HCU Lozano Blesa, Zaragoza, Spain

Corresponding author: anusketa_85@hotmail.com

Keywords: DAILY CHRONIC HEADACHE, INTRACRANEAL PRESSURE, OPHTHALMOLOGIC EVALUATION

When the daily chronic headache and chronic migraine evolve torpid form make us rethink the initial diagnosis, thinking about, benign intracranial hypertension syndrome. We present two cases in which this disease was confirmed in the absence of papilledema.

Case 1

55-Year-old patient diagnosed of chronic migraine, with failure of multiple treatments prophylactics in monotherapy and combination therapy. Also failure of treatment with botulinum toxin and without sustained efficacy of treatment with neurostimulator. MRI, cerebral angioMRI, ophthalmologic evaluation with perimetry were normal. Lumbar puncture with an opening pressure of 35 cm of H₂O, compatible with benign intracranial hypertension without papilledema was performed. Continuous monitoring of the PIC that was pathological by what has been recently placed lumboperitoneal shunt was carried out.

Case 2

49-Year-old patient in follow-up on the unit's headaches by chronic daily headache of 2 years of evolution and failure therapeutic amitriptyline, amitriptyline and topiramate, escitalopram, prednisone in short guideline, botulinum toxin and occipital block with levobupivacaine. Complementary studies (MRI, Transcranial doppler,

ophthalmologic and biochemical CSF analysis) were normal and we considered the realization of lumbar puncture with measurement of opening pressure resulting in pathologic (31 cms H₂O). Confirmed the diagnosis of benign intracranial hypertension without papilledema using continuous recording 24 hours of intracranial pressure, it was the placement of derivation lumboperitoneal, with a good clinical response.

The absence of affectation perimetry or papilledema, on the study of etiological of chronic migraine and chronic daily headache, does not exclude a possible benign intracranial hypertension syndrome, so, in refractory cases of these diseases and, even if the eye study is normal, must confirm or rule out our suspicion by the CSF opening pressure measuring.

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Rez de Jardin poster area

THE USEFULNESS OF THE KURASHIKI PREHOSPITAL STROKE SCALE IN IDENTIFYING THROMBOLYTIC CANDIDATES IN ACUTE ISCHEMIC STROKE

Je Sung You, Hyun Soo Chung, Sung Phil Chung, Jieun Jang, Hahn Shick Lee

Emergency Medicine, Yonsei University College of Medicine, Seoul, Korea, (South) Republic of

Corresponding author: youjsmd@yuhs.ac

Keywords: stroke, prehospital stroke scale, thrombolysis

Background: Patients with acute ischemic stroke should be rapidly triaged to a stroke center with the highest quality of stroke care in order to assess the severity of a stroke within an appropriate time. However, the important information about the severity of a stroke cannot be provided by widely used prehospital stroke scales. The Kurashiki prehospital stroke scale (KPSS) was constructed using four metrics including level of consciousness, disturbance of consciousness, motor weakness, and language, with total scores ranging from 0 to 13. The maximum of 13 points represented the most severe symptoms. The KPSS was developed in 2008 to assess the severity of stroke. We investigated the usefulness of KPSS for assessing the severity of stroke compared to the National Institutes of Health Stroke Scale (NIHSS) in patients who are candidates for intravenous or intra-arterial thrombolysis who arrived at the hospital within 6 hours of symptom onset.

Methods:

We conducted a retrospective analysis of a prospective registry database of consecutive patients included in the Emergency Stroke Therapy program. In the emergency department, the KPSS was assessed by emergency medical technicians. Intravenous thrombolysis and intra-arterial thrombolysis were administered to patients with an acute stroke of less than 3 hours duration and selected patients with a major stroke presenting less than 6 hours from symptom onset. A cutoff KPSS score was estimated for candidates of thrombolysis by comparing between the KPSS

and NIHSS and patients who actually received thrombolytic therapy. Clinical outcomes were compared between patients around the estimated cut-off. The independent predictors of outcome were determined using multivariate logistic regression analysis.

Results

Excellent correlations were demonstrated between KPSS and NIHSS within 3 hours ($R=0.879$) and 6 hours ($R=0.869$) of hospital admission. The optimal threshold value was 3 for KPSS in patients within 3 hours and 6 hours by Youden's method. For actual usage of IV-tPA and IA-UK, the cut-off value of 3 provided 98.1% sensitivity and 70.7% specificity for administration of IV-tPA within 3 hours and 95.5% sensitivity and 74.3% specificity for administration of IV-tPA or IA-UK within 6 hours. There were significant differences for KPSS score cut-offs <3 or >3 for actual usage of intravenous-tissue plasminogen activator (IV-tPA) ($p<0.0001$) or intra-arterial urokinase (IA-UK) ($p<0.0001$). Significant associations with $KPSS \geq 3$ were revealed in actual IV-tPA usage (OR 125.598; 95% CI 16.444-959.368, $p<0.0001$), and actual IV-tPA or IA-UK usage (OR 58.733; 95% CI 17.272-199.721, $p<0.0001$).

Conclusion

The KPSS is an effective prehospital stroke scale for identifying candidates for IV-tPA and IA-UK as indicated by excellent correlation with the NIHSS in the assessment of stroke severity in acute ischemic stroke.

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A CASE OF FOLLICULAR LYMPHOMA PATIENT RELAPSING WITH PARANEOPLASTIC SENSORY NEURONOPATHY (GANGLIONOPATHY)

Hakan Akgun (1), Mustafa Cakar (2), Yusuf Emrah Eyi (3), Kadir Ozturk (4)

1. department of neurology, gulhane school of medicine, Ankara, Turkey
2. department of internal medicine, gulhane school of medicine, Ankara, Turkey
3. department of emergency medicine, gulhane school of medicine, Ankara, Turkey
4. department of gastroenterology, gulhane school of medicine, Ankara, Turkey

Corresponding author: kadirozturk3041@gmail.com

Keywords: lymphoms, paraneoplastic sensory neuronopathy, ganglionopathy

A 45-year old female diagnosed with follicular lymphoma suffered from numbness in her hands and feet one month after the achieving remission by control Positron Emission Tomography (PET) which was performed following the 8 courses of chemotherapy. As the patient was diagnosed as emotional gangliopathy by neurological examination and electromyography (EMG), pulse steroid therapy was commenced. Despite the treatment sensory-motor axonal neuropathy progressed and involved the motor function. Since there was no regression of the symptoms with

plasmapheresis the abdominal ultrasonography (USG) was performed and a tumor compatible with relapse was seen. There was no other pathology rather than primary tumor in serum biochemistries and radiological examinations, the patient was considered as paraneoplastic polyneuropathy. There was an improvement in motor functions after the high doses of chemotherapy and autologous stem cell transplantation (ASCT) but numbness in both hands and feet went on though alleviated to some extent. The sensory-motor axonal neuropathy continued at upper and lower extremities in control EMG.

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Rez de Jardin poster area

ACUTE-PHASE REACTANTS AND CYTOKINES IN ISCHEMIC STROKE: DO THEY HAVE ANY RELATIONSHIP WITH SHORT-TERM MORTALITY?

Mustafa Sahan (1), Ahmet Sebe (2), Ayca Acikalın (2), Onur Akpınar (3), Filiz Koc (4), Mehmet Oguzhan Ay (5), Muge Gulen (5), Metin Topal (5), Salim Satar (5)

1. Emergency Department, Elazig Education and Research Hospital, Elazig, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Cardiology Department, Adana BSK Metropark Hospital, Adana, Turkey
4. Neurology Department, Cukurova University, School of Medicine, Adana, Turkey
5. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Stroke, Acute-phase reactant, Mortality

BACKGROUND: Many unknown risk factors play a role in the etiopathogenesis of stroke. The appearance of inflammatory cells within the damaged tissue after cerebral ischemia suggests that an inflammatory response may play a role in stroke pathogenesis. In our study, we examined whether an association exists between the acute-phase reactants and the levels of cytokines, the volume and diameter of the stroke, and short-term mortality in patients who were diagnosed as acute ischemic a stroke after admission to the Emergency Department.

MATERIALS AND METHODS: A total of 50 consecutive patients who applied to the Emergency Service with acute ischemic stroke were enrolled in the study. Their stroke volume were calculated and serum samples were obtained as soon as they arrived into the Emergency Service. The patients were evaluated according to the Glasgow Coma Scale (GCS) and National Institutes of Health Stroke Scale (NIHSS).

RESULTS: There was no significant correlations between stroke volume and levels of cytokine and acute-phase reactants in dead patient group or in living patient group. A correlation and statistical significance was found between stroke volume and hospital stay time in living patient group.

In addition, GCS and NIHSS scores were correlated with stroke volume and was found a significant statistically.

CONCLUSIONS: Scales such as GKS and NIHSS, which evaluate the functional state of patients, are the best indicators for defining prognosis in our daily practices. In addition, we found a positive correlation between levels of CRP (C reactive protein) and prognosis. However, we did not observe a statistically significant correlation between prognosis and other acute-phase reactants such as TNF-alpha, IL-6, IL-8, IL-10, fibrinogen, and leukocytes.

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HASHIMOTO ENCEPHALOPATHY – A RARE CAUSE OF ALTERED MENTAL STATE

P Stuart (1), Anna Van Der Velden (1)

1. Emergency Medicine, Albert Schweitzer Hospital, Dordrecht, Netherlands

Corresponding author: amvdvelden@hotmail.com

Keywords: encephalopathy, coma, Hashimoto

Hashimoto's encephalopathy is an uncommon syndrome associated with Hashimoto's thyroiditis. It's a somewhat controversial disorder, most often characterized by a subacute onset of confusion with altered level of consciousness, seizures, and myoclonus. The disorders is more common in women.

A-69-year-old woman was presented to the ED by EMS. She was found with a decreased level of consciousness after being diagnosed with what was believed to be a depression. Over the last month her condition had deteriorated and she had been experiencing speaking difficulties, myoclonus and catatonic posturing.

Her medical history was significant for hypertension and a TIA. Her medical record showed the use of salicylic acid, lorazepam and citalopram. The patient had not had access to medication other than her own.

On presentation, she was displaying spontaneous symmetrical pathological extension of her arms, wandering eye movements and a Cheyne Stokes-like breathing pattern. Because of her decreased level of consciousness (GCS 4) the patient was intubated. Her physical examination was significant for pathological Babinski reflexes and a high muscular tone in both legs. No fever was noted.

A head CT showed no abnormalities. Laboratory results were unremarkable. A lumbar puncture showed normal opening pressure and an increase in protein.

The patient was mechanically ventilated for 2 days. She was treated with acyclovir and cefotaxime because of suspected viral encephalitis and aspiration pneumonia. She spontaneously improved in mental state and motor skills. Laboratory results showed an abnormally high level of anti-TPO antibodies (2925 kIU/L, normal range <35 kIU/L), indicating a Hashimoto encephalopathy. Laboratory thyroid markers were within normal levels.

After 4 weeks, the patient was discharged to a revalidation centre for further treatment.

Clinical manifestations of Hashimoto's encephalopathy most often include an acute to subacute onset of confusion with alteration of consciousness. Two patterns of presentation have been described:

1. A stroke-like pattern of multiple, recurrent, acute to subacute episodes of focal neurologic deficits with a variable degree of cognitive dysfunction and alteration of consciousness.

2. A diffuse, progressive pattern, characterized by slowly progressive cognitive impairment with dementia, confusion, hallucinations, or somnolence. Some cases have a more fulminant presentation in which rapid deterioration to coma occurs.

In addition to confusion and mental state changes, other neurologic sign are common in both groups: seizures, status epilepticus, myoclonus, tremor, diffuse hyperreflexia, pyramidal tract signs, psychosis with visual hallucinations and paranoid delusions.

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TRANSIENT LOSS OF CONSCIOUSNESS: IS IT AN EPILEPTIC SEIZURE?

Tanzer Korkmaz (1)

1. Emergency department, Abant İzzet Baysal University, Bolu, Turkey

Corresponding author: tanzerkorkmaz@gmail.com

Keywords: Loss of consciousness, epileptic seizure, PRL and CPK

Objectives: Assessment and diagnose of patients presenting with transient loss of consciousness (T-LOC) is not always easy because of the presence of clinical conditions, such as epileptic seizure, syncope or pseudoseizures, with similar presentations. In this study, we aimed to evaluate the diagnostic values of a scoring system (specific scoring system based on the symptoms), serum PRL and CPK parameters in order to determine their usability in diagnosing epileptic seizure in the ED.

Methods: Patients who presented with non-traumatic T-LOC and who were not diagnosed during the initial assessment during the six month period were included in the study. PRL and CPK values were obtained and scoring forms were filled out for each one of the patients.

Results: Total of 45 patients were diagnosed with epileptic seizure during the three month follow-up and the median age of the patients was 24±3.4. There was no statistically significant relationship present between the high PRL and CPK values and scoring system value ≥ 1 and diagnosis of epileptic seizure compared to the other conditions diagnosed. The specificity value was calculated as 90% in the presence of high PRL and scoring system value ≥ 1, in which case the likelihood of epileptic seizure diagnosis is 5.8 times greater.

Conclusion: The PRL and CPK had low sensitivity and specificity values whereas the scoring system had high sensitivity and increasing specificity with higher PRL values. It is recommended that the suggested parameters, scoring system, PRL and CPK values are used in larger studies to validate their usability as diagnostic tools.

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GLASS FRAGMENT CAUSING CAUDA EQUINA SYNDROME

Karin Rappard (1), Abel Wei (1)

1. Emergency department, Radboud Hospital, Nijmegen, Netherlands

Corresponding author: karinrappard@hotmail.com

Keywords: glass, cauda equina syndrome, diagnostic work-up

Introduction

Penetrating injuries near the spine are important causes of cauda equina syndrome.

Case description

A 26-year-old man visited the ED after falling from shoulder height on a glass. He had a wound on his back at the level L5-S1. Initially he reported hypoesthesia in the left calf and toes, which resolved before it could be ascertained. Exploration of the wound showed no injuries of muscles nor glass. Neurological examination was normal. The wound was sutured and the patient returned three days later for follow-up.

On follow-up he complained of headache, nausea and photophobia. The neurologist diagnosed it as a mild concussion after the fall. Thereafter local swelling of the wound occurred. Puncturing the wound showed seroma. It looked like the complaints were improving, but then he developed hypoesthesia of the left leg and buttock, erectile dysfunction and urinating problems. Neurological examination also revealed a loss of rectal tone and absent Achilles tendon reflex. A MRI and CT showed multiple glass fragments at the level L5-S1. The patient underwent surgery three times and eventually the cauda equina syndrome improved slowly.

Background

Causes of penetrating spinal injuries are gunshot injuries, stab wounds and penetrations by other sharp, knife-like objects and glass.¹ A meticulous neurologic examination is of utmost importance with penetrating intraspinal injuries.¹ Thorough exploration of the wound as the sole diagnostic tool is insufficient for the detection of a foreign body, because the entrance wound may be a considerable distance from the spine itself.^{3,4} When the foreign body is radiopaque, like glass, conventional radiography can be a very useful tool for detection. The density and the size of the glass foreign body determines its radiopacity. The glass in our patient would, according to the literature, be visible on conventional radiography.⁴ If it's not visible on conventional radiography and there's a strong suspicion

ultrasound, CT or MRI should be considered.⁴ Surgery is indicated when there is a retained foreign body, sepsis, granuloma, persistent CSF leak and myelographic evidence of compression.⁵ Removal of a retained intraspinal fragment can improve neurological outcome but will be influenced by age, energy transfer to the neurovascular structures and timing of neural decompression.²

Conclusion

The diagnostic work-up of patients suspected with a corpus alienum near the spine should include at least conventional radiography, because missing a retained foreign body can cause cauda equina syndrome with persistent neurological deficit, even after surgery.

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THE HEADACHE PATIENTS JOURNEY THROUGH THE EMERGENCY DEPARTMENT: A SERVICE EVALUATION.

Mohammad Naushad Chaudhry (1), Thiagarajan Jaiganesh (2), Niranjanan Nirmalanathan (3)

1. St Georges University of London (SGUL), St Georges Hospital, London, United Kingdom

2. Emergency Department, St George's Hospital, London, United Kingdom

3. Neurology Department, St George's Hospital, London, United Kingdom

Corresponding author: m1000249@sgul.ac.uk

Keywords: headache, emergency, neurology

The objective of this study was to evaluate the assessment, management and re-attendance rates for patients presenting with headache to the Emergency Department (ED) at a large London Teaching Hospital.

Headache is an extremely common complaint. A previous study conducted in 2010 found that more than 50% of adults in the general population suffered from headache disorders in the previous year. 4.4% of consultations in primary care and 1-4% of all visits to Emergency Departments (ED) worldwide are for headaches. Emergency management of headache should be focused on excluding serious diagnoses and providing a management plan and continuity of care for the benign diagnoses to reduce re-attendance.

A retrospective study was carried out. Medical records of 100 consecutive adult patients presenting to the ED between the 1st and 31st January 2012 were reviewed using a standardised proforma. Re-attendance rates of these patients between January and July 2012 were also evaluated.

The main outcomes were as follows: 57 patients were female, 43 were male with a mean age of 37. The majority self-presented to the ED (72%). The average wait from admission through to discharge was 3.6 hours. 43% of patients were discharged with no diagnosis as an unspecified headache. Of those provided with a clear

diagnosis, we found the commonest diagnoses of primary headache to be that of migraine (19%), cluster (6%) and tension type (4%). Secondary headaches made up a much smaller percentage of diagnoses and were as follows: subarachnoid haemorrhage (2%), viral meningitis (3%) and bacterial meningitis (1%), 2% of the patients evaluated were diagnosed with headache as a result of high blood pressure. 10% of patients received no analgesia and 45% were given potentially inappropriate analgesia (e.g. opiates) in the context of benign primary headache disorders. With respect to investigations undertaken, 36% of patients had a CT scan – all of which were normal. 17 patients had a lumbar puncture performed of which 4 were abnormal. In 30% of cases headache was documented as “sudden-onset and severe” but the time to maximum severity was not documented in any. This made it difficult to identify the true incidence of thunderclap headaches within this cohort.

19 of the 100 patients studied re-attended the ED with a primary complaint of headache within 6 months. Of this group 47% were given a diagnosis of unspecified headache on initial presentation.

In conclusion, a prompt and accurate diagnosis of headache primarily based on history, is essential. A high rate of diagnosis of unspecified headaches is concerning. This could reflect the high turn-over of junior medical staff. However, a larger scale audit carried out in multiple centres would provide more robust evidence for the above. Our audit findings suggests that there may be a need in the ED for a protocol-driven pathway for the assessment and management of all headaches, including implementing appropriate pain relief and follow-up clinics.

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A SMALLER PROPORTION OF EMERGENCY DEPARTMENT PATIENTS WITH SYNCOPE ARE HOSPITALIZED IN SOUTH KOREA THAN IN THE UNITED STATES

Stephen Allegra (1), Chong Kun Hong (2), Seong Youn Hwang (3), Barnet Eskin (1), John Allegra (4)

1. Emergency department, Morristown Medical Center, Morristown, United States

2. Emergency Department, Bundang Jesaeng General Hospital, South Korea, Seongnam City, Korea, (South) Republic of

3. Emergency Department, Samsung Changwon Hospital, Changwon, Korea, (South) Republic of

4. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: jallegra@gmail.com

Keywords: syncope, hospitalization rates, emergency patients

Study objectives: The United States (US) spends a greater proportion of its gross domestic product (GDP) on health care than any other country. One reason for this may be that US physicians order more testing and hospitalizations because of greater concerns about malpractice litigation.

Syncope is a common emergency department (ED) complaint for which hospitalization is usually of little benefit. The proportion of GDP spent on health care is much lower in South Korea than in the US. We hypothesize that a smaller proportion of ED syncope patients are hospitalized in Korea than in the US.

Methods: Design: Retrospective cohort of ED visits. Setting: An urban South Korean ED with annual volume of 36,000 and 17 New York and New Jersey EDs with annual visits from 26,000 to 86,000. Subjects: Consecutive patients seen by ED physicians from 1/1/2010 to 12/31/2012. Protocol: We identified patients > 60 years old with a primary or secondary syncope ICD code and calculated the proportion hospitalized. We compared these proportions with the Student t-test (alpha = 0.05) and calculated 95% confidence intervals (CI).

Results: The total visits in the databases were: 110,029 and 2,645,748 in Korea and the US, respectively. Of these 213 and 21,417 were for syncope in patients ≥ 60 years old, respectively. The mean ages of these syncope patients were 73 and 78 years and 54% and 55% were female, respectively. The proportions hospitalized were 24% in Korea and 72% in the US. The difference in these proportions is 48% [95% CI: 42% to 54% (p< 0.001)].

Conclusion: We found that a smaller proportion of ED patients with syncope are hospitalized in South Korea than in the US. This may be due to lower physician risk tolerance in the US which may be one of the reasons why the proportion of GDP spent on health care is 2.5 times higher in the US compared to South Korea. Further study is warranted to determine if outcomes in syncope patients are comparable between the US and South Korea and whether opportunities exist to render care in the US in a more cost effective manner.

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MIGRAINE WITH PROLONGED AURA (GLOBAL DYSPHASIA): A CLINICAL REMINDER. MIGRAINE, DYSPHASIA, HEADACHE.

Muhammad Cheema (1), Asif Khan (1), Sheikh Saleem (1)

1. Acute Medicine, Arrowe Park Hospital, Wirral, United Kingdom

Corresponding author: drmrcheema@hotmail.com

Keywords: Migraine, Dysphasia, Headache

Migraine is a very common condition being more prevalent in females. Recent advances in medicine have demonstrated the high complexity in the clinical presentations, variable clinical features and diagnosis of this condition. Many studies have shown the overlap of signs and symptoms between migraine and stroke/transient ischaemic attacks. Here, we describe such a complex case with classical migraine headaches associated with global dysphasia. A 65 year old lady presented with unilateral left sided headache and global

dysphasia. There was no convincing history of any vascular disease, head trauma or signs of infections. Neurological examination did not show any focal neurological deficits apart from global dysphasia. CT head and LP ruled out life threatening conditions. After 18 hours, symptoms resolved spontaneously and patient was diagnosed to have migraine with prolonged aura of global dysphasia. We urge a high index of suspicion for atypical presentations of migraine especially with prolonged aura as these may easily be confused with stroke and transient ischaemic attacks.

Learning Points:

- Migraine can present with variable symptoms that may mimic cerebrovascular conditions especially migraine with prolonged aura.
- A diagnosis of migraine should be considered once life threatening conditions like cerebrovascular accident and meningeal infections have been ruled out in patients with headache and dysphasia.
- Though rare, migraine can be accompanied with a variety of aural presentations of dysphasia.

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A RARE CAUSE OF ISCHEMIC STROKE IN YOUNG AGE: INFECTIVE ENDOCARDITIS

Oguz Urgan, Serkan Emre Eroglu, Ozge Onur, Omer Faruk Celik, Mehmet Fatih Korcak, Haldun Akoglu, Arzu Denizbasi, Cigdem Ozpolat (US)
Emergency department, Marmara University Pendik Research and Training Hospital, Istanbul, Turkey

Corresponding author: drseroglu@gmail.com

Keywords: Endocarditis, Embolism, Stroke

Introduction: The introduction of antimicrobial therapy has changed infective endocarditis (IE) from a virtually always fatal illness into a potentially curable disease. Nevertheless, IE is still a life-threatening clinical condition, and morbidity and mortality rates remain high. The long-term prognosis of IE has been described primarily in relation to clinical outcome measures—for example, such complications as cerebrovascular accident (CVA), cardiac failure, need for cardiac surgery, relapse rate, and mortality. Those patients who develop endocarditis, may present with classic signs or symptoms low grade fever, a new murmur, etc. Occasionally, some patients including the one presented, will present with symptoms of embolic phenomena.

The diagnosis of CVA is extremely common in emergency medicine; however, CVA resulting from IE is extremely uncommon. This case reports such an event.

Case: A 19 years old male was admitted to emergency room (ER) with changes in mental status. His Glasgow Coma Scale was 14, and other vital signs were normal. His physical examination was normal. His initial lab revealed leukocytosis with left shift. After one hour of admission to ER, motor deficiency of left upper and lower extremity developed. In his cranial CT and MRI, there was acute

ischemic infarction at right parietal lobe. Because of atypical clinical situation and young age of the patient, echocardiography made. Transthoracic echocardiography showed vegetations on the mitral valve. The patient admitted to the coronary care unit with diagnosis of IE and embolic CVA.

Discussion: Infective endocarditis may be an etiology for stroke. Reports revealed that neurologic events are the most frequent complications in IE patients requiring intensive care unit admission. Functional independence is lost in up to one-third of these patients, and neurologic failure is a major determinant of mortality. The diagnosis of IE must be made as soon as possible to initiate antimicrobial therapy and identify patients at high risk for complications.

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MITOCHONDRIA-TARGETED NEUROPROTECTION IN SWINE MODEL OF CEREBRAL ISCHEMIA

Olga Suchadolskiene (1), Giedre Baliutyte (2), Laima Juozapaviciene (3), Birute Kumpaitiene (1), Kestutis Stasaitis (1), Zilvinas Dambrauskas (4), Vincentas Veikutis (5), Vilmante Borutaite (2), Dinas Vaitkaitis (1)

1. Department of Disaster Medicine, Lithuanian University of Health Sciences, Kaunas, Lithuania

2. Institute of Neurosciences, Lithuanian University of Health Sciences, Kaunas, Lithuania

3. Department of Anaesthesiology, Lithuanian University of Health Sciences, Kaunas, Lithuania

4. Department of Surgery and Institute for Research of Digestive System, Lithuanian University of Health Sciences, Kaunas, Lithuania

5. Institute of Cardiology, Lithuanian University of Health Sciences, Kaunas, Lithuania

Corresponding author: olga@smp.lt

Keywords: Cerebral ischemia, neuroprotection, mitochondria

Background: Stroke is an important cause of morbidity and mortality with few effective therapies that require timely recanalization of occluded cerebral blood vessels. However, reperfusion can cause neurovascular injury, leading to cerebral edema, brain hemorrhage, and neuronal death by apoptosis/necrosis. These complications, which result from excess production of reactive oxygen species in mitochondria, significantly limit the benefits of stroke therapies. Mitochondrial dysfunction is one of the major events responsible for activation of neuronal cell death pathways during cerebral ischemia. We suggest the primary target of an ischemic insult may be dysfunction of mitochondrial oxidative phosphorylation system, particularly damage to complex I of the respiratory chain (reflected in the decreased respiration with pyruvate but not succinate), and occurs before signs of neuronal death can be detected (by histological methods and TUNEL staining), in swine model of global cerebral ischemia. We have developed a global cerebral ischaemia model using pig

to investigate mitochondria-targeted neuroprotection of methylene blue and cyclosporine A in vivo.

Methods: Fifteen pigs (18-29 kg) were anesthetized and randomly assigned to the one of the following groups: 1- control, 2- bilateral carotid occlusion + hypotension (MAP 40-50 mmHg), 3- bilateral carotid occlusion with hypotension+methylene blue, 4- bilateral carotid occlusion with hypotension+ cyclosporine A. In order to investigate mechanisms of cerebral ischemia and the effects of neuroprotection, we assessed the mitochondrial respiration (high-resolution respirometry and histological structure (light microscopy and TUNEL assay) of brain tissue in healthy control animals and after 3 hours of brain ischemia (3 groups).

Results: We found that LEAK respiration (which was measured in the presence of pyruvate + malate but without ADP) was not affected by ischemia, methylene blue or cyclosporine A. OXPHOS capacity with pyruvate + malate as substrates decreased by 79% after bilateral carotid artery occlusion and hypotension compared to the control level, resulting in the decrease of RCI (ADP/PM) by 73%. However, pre-treatment with methylene blue (25 mg/kg) or cyclosporine A (2,5mg/kg) improved mitochondria respiration rate by 162% and 256% respectively. OXPHOS capacity with succinate as substrate decreased by 53% after bilateral carotid artery occlusion and hypotension compared to the control level. However, injection of methylene blue or cyclosporine A improved mitochondria respiration rate by 51% and 79% respectively. Mitochondrial respiration rates after addition of atractyloside and cytochrome c were the same in all experimental groups suggesting that intactness of mitochondrial outer membrane was not affected by cerebral ischemia.

Conclusion: We determined that pre-treatment with methylene blue or cyclosporine A prevents ischemia-induced mitochondrial dysfunction and brain injury.

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TRAUMATIC CAROTID DISSECTION: CASE REPORT AND LITERATURE REVIEW.

Elisa Saleme (1), Tania Guerrero (1), Arturo Fuentes (1), Adriana Ron (1), Hector Montiel (1)

1. Emergency department, ABC Medical Center Methodist Hospital Network, Mexico City, Mexico

Corresponding author: elisa.saleme.md@gmail.com

Keywords: Traumatic vascular dissection, Stroke in young patients, Diagnosis in the emergency department

Introduction. They are a major cause of stroke (20% under 45 years). However, these are a rare and underdiagnosed. Those associated with use of seatbelt are rare but involve direct cervical trauma. The following describes the case of a patient who came to the emergency department(ED) with a frontal car crash. We performed a computed

tomography(CT) with no evidence of injury, five hours after of her admission she presented a sudden neurological deficit. Performing magnetic resonance imaging(MRI) we found evidence of subacute ischemic events at left cerebellum, bilateral occipital lobe and left thalamus.

Clinical case. Female 44 years with the following background: morbid obesity (BMI 51.4), diabetes mellitus type 2. Came to the ED after a car accident. She was at the pilot seat and wear seatbelt. At the primary review: A: permeable airway without cervical immobilization and abrasive injury at left infraclavicular region. B: spontaneous breathing decreased breath sounds on the right chest. C: hemodynamic instability with tachycardia and hypotension resolved in the ED. D: Glasgow scale: 13, no evidence of neurological focalization. E: exposed and explored finding tenderness in right anterolateral chest without subcutaneous emphysema and the presence of abdominal abrasive injury without communication with the abdominal cavity. At the initial brain and chest CT scan we only detected rib fractures from 3rd to 8th right chest, nodular lesions in both lungs with a right dominant and pneumothorax (5%). Five hours after of her arrival she presented rapid neurological deterioration (conjugate gaze fixed to the right) requiring advanced airway management. A brain MRI was performed with a stroke protocol that reported stroke in the territories of the posterior cerebral and cerebellar arteries in left brain and left vertebral artery and carotid dissection. We made a carotid doppler study, which reports high strength spectral pattern of left vertebral artery(distal occlusion)and dissection of the left carotid. With poor prognosis and poor clinical course died 10 days after.

Discussion. The frequency of the carotid artery and vertebral dissection as a cause of stroke has only been recognized in the past decade.

The majority (81%) of dissections were associated with the sudden movement of the neck.

Neck pain is a reliable sign of the onset of dissection, followed by a variable time after neurological deficits.

Traumatic dissection of the carotid artery is uncommon, especially traumatic. More common in young adults, with an average presentation age of 44 years, there are no gender predominance. The symptoms are variable, from asymptomatic presentation to headache, hemicranial pain an also carotidynia, in most cases syncope or transient ischemic attacks.

The signs and symptoms of stroke began within 24 hours after dissection, some occurred even several weeks after the onset of neck pain.

Mokri found that patients with traumatic dissections were more likely to have acute neurological deficits in a higher percentage of patients with spontaneous dissections. The prognosis, result may be less favorable to the traumatic group.

There are structural changes may predispose to dissection of the extracranial carotid artery as fibromuscular dysplasia, however atherosclerosis is a predisposing factor it remains uncertain.

It is well known that the only clear risk factor for cerebrovascular disease is hypertension, commonly present in patients with dissection.

The gold standard is a vascular magnetic resonance of brain, associated with other images like a doppler of supra-aortic trunks (being limited value especially with stenosis of 50% or less). The images initially made in the ED can delay the onset of immediate treatment that try to limit the damage, plus they are not available in all medical units. Unfortunately not in all cases, the brain imaging provide timely diagnostic information.

there are no studies that determine the treatment, but the current recommendation is to start anticoagulant therapy after excluding the possibility of bleeding by TAC. Several articles report the successful treatment by endovascular via in the early hours. The mortality of this disease is about 20-40%, with permanent neurological deficits in 40-80% of survivors.

It is important to suspect this disease from the reception of patients in the ED despite having an asymptomatic patient in the early hours of a trauma.

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TOTAL SERUM MAGNESIUM LEVELS ON CLINICAL OUTCOMES OF STROKE PATIENTS.

Ali Arhami Dolatabadi (2), Reza Farahmand Rad (1), Akram Zolfaghari Sadrabad (1), Hamid Kariman (2)

1. Emergency department, shahid sadooghi hospital, tehran, Iran, Islamic Republic of

2. Emergency department, Imam Hosseien Hospital Research Center, tehran, Iran, Islamic Republic of

Corresponding author: azolfaghari88@yahoo.com

Keywords: Serum magnesium, stroke, neuroprotective factors

Abstract: Introduction: Magnesium (Mg) ion has two possible role in protecting neurons and glia from ischemic damage, effect on cerebral blood flow and neuronal action. This study evaluated the total serum Mg levels at arrival to the hospital and its correlation with clinical outcome in patients with stroke.

Methods and materials: In a cross sectional study 316 patients who diagnosed with stroke were enrolled. Blood samples were drawn from the patients and controlled total Mg levels in all patients. In next step recurrent transient ischemic attack (TIA), recurrent myocardial infarction or stroke, unstable angina and death as clinical outcomes were follow-up for period of 3 and 6 month after admission in all patients. The collected data were analyzed using the SPSS software. Continuous data were demonstrated as mean \pm standard deviation. P- Value less than 0.05 were considered significant. Results: The mean total serum Mg levels in initial of study were 2.1 ± 0.4 mg/dl (range 1.3 -4.2 mg/dl). In this study 78 cases of patients have at last one clinical finding after 3 month period of follow up and 15 cases of patients have at last one clinical finding after 6 month follow up. Death was the most common finding in 3

month (16.8%) and recurrent stroke was the most common finding in 6 month follows up (2.5%).

Discussion: The results of our study cannot show a significant correlation between total serum Mg levels and clinical outcomes after 3 and 6 month follow up. (P>0.05)

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FIRST EVER EPISODE OF TRANSIENT GLOBAL AMNESIA: IS THERE A SEASONAL VARIABILITY?

Chiara Busti (1), Alessandra Mancuso (1), Maurizio Paciaroni (1), Michele Pellizzaro Venti (2)

1. Division of Internal Vascular Medicine ? Stroke Unit, S.M.Misericordia Hospital, Perugia, Italy

2. Division of Internal Vascular Medicine ? Stroke Unit, S. Maria della Misericordia Hospital, Perugia, Italy

Corresponding author: michelepellizzaroventi@live.it

Keywords: transient global amnesia, seasonal variability, retrospective studies

Background and purposes: Transient global amnesia (TGA) is a common neurological disorder characterized by the temporary and reversible impairment of short-term memory. Incidence of TGA ranges between 3 and 8 per 100 000 people per year and 75% of attacks occur in people aged between 50 and 70 years (ref). Generally TGA is a benign disorder, but the differential diagnosis with other diseases is of paramount importance. High-resolution imaging data suggest an involvement of memory circuits in the mesiotemporal region, particularly the CA1 subfield of the hippocampal formation. Various factors have been proposed to contribute to the etiology of TGA, such as migraine, epilepsy, focal ischemia and cerebral venous flow abnormalities. The aim of this study was to assess if there a seasonal correlated peak of incidence of this disease.

Methods: TGA patients admitted to the Division of Internal Vascular Medicine – Stroke Unit of the S. M. Misericordia Hospital, Perugia, Italy between April 2006 and March 2013 were retrospectively evaluated for clinical characteristics, risk factors, cerebral magnetic resonance imaging (MRI) and date of onset.

Results: 35 patients (mean age \pm SD, 63,5 years \pm 6,2; Male/Female = 20/15) had a final diagnosis of TGA. History of hypertension was present in 27/35 patients (77%), diabetes mellitus in 2/35 (6%), cigarette smoking in 7/35 (35%), dyslipidemia in 19/35 (54%), history of coronary artery disease in 4/35 (11%) and history of ischemic stroke in 1/35 (3%). MRI was performed in 25 cases and the typical hippocampal lesions were detected in 8/25 patients (32%). A seasonal pattern, with higher frequency of TGA in winter or autumn (23/35, 65%;) compared to summer or autumn (12/35, 35%) was observed.

Conclusion: Although the cause of seasonal variability in TGA patients is unclear, it needs confirmation in larger study.

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Rez de Jardin poster area

LUMBAR PUNCTURE PERFORMED IN EMERGENCY DEPARTMENT: SENSIBILITY AND SENSITIVITY OF CLINICAL FINDINGS AND LABORATORY TESTS IN THE DIAGNOSIS OF MENINGITIS

Mohamed Modhaffar (1), Asma Ben Hamida (1), Saloua Houimli (2), Kamel Majed (2), Chokri Hammouda (2), Nebiha Borsali Falfoul (2)

1. emergency department, Hôpital La Rabta, Tunis, Tunisia

2. Emergency department, Hôpital La Rabta, Tunis, Tunisia

Corresponding author: modhaffar@yahoo.fr

Keywords: Lumbar puncture, Meningitis, Brudzinski sign

Introduction: Lumbar puncture is a medical technique performed routinely in emergency for the diagnosis of life-threatening diseases of the central nervous system (meningitis, subarachnoid hemorrhage). As many medical techniques, lumbar puncture is known to be associated with many serious complications (fatal tentorial or cerebellar herniation, iatrogenic infection, post lumbar puncture headache) which can put the physician in front of a difficult choice especially when the clinical findings are atypical. The purpose of this study is to evaluate the sensitivity and specificity of clinical and biological findings in patients with suspected meningitis.

Methods: We have collected clinical data records between 1 january and 31 december 2012 of all Rabta emergency patients for whom a lumbar puncture was performed.

Results: During 2012, 116 lumbar punctures were performed in our emergency. The average age of patients was 38 years, ranging from 14 to 90 years and a sex ratio of 2. Lumbar puncture was positive in 50.9% of cases and negative in 49.1%. Patients were hospitalized in infectious diseases department or in the emergency in 49.1% and 11.2% in intensive care unit. 39.7% of patients were discharged after the result of the lumbar puncture. The study of clinical signs showed: for headaches, sensitivity of 88%, specificity of 27.7%, positive predictive value (PPV) of 48% and a negative predictive value (NPV) of 76.9%; for fever, sensitivity was of 92.5%, specificity of 2.5%, PPV of 41.6% and a NPV of 33.3%. The clinical triad (headache, fever, vomiting) had a sensitivity of 55.5%, a specificity of 55.5%, a PPV of 48.38% and a NPV of 62.5%. The confusion had a sensitivity of 25.9%, a specificity of 83.3%, a PPV of 53.8% and a NPV of 60%. For meningeal stiffness, the sensitivity was of 70.3%, specificity of 41.6%, a PPV of 47.5% and a NPV of 65.2%. The signs of Kernig and Brudzinski had a sensitivity of 51.8%, a specificity of 91.6%, a PPV of 82.3% and a NPV of 71.73%.

Concerning biological results, CRP had a sensitivity of 44.4%, a specificity of 44.4%, a PPV of 37.5% and a NPV of 59.2%. The leukocytosis had a sensitivity of 51.8%, a specificity of 63.8%, a PPV of 56% and a NPV of 69.9%

Conclusion: Our results showed an acceptable sensitivity for headache and fever and an interesting specificity of Kernig

and Brudzinski signs. However, fearing the risk of missing a case of meningitis, this technique continues to be practiced in excess. The recommendations of learned societies offer the use of biomarkers such as procalcitonin, not yet available in our emergencies.

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Rez de Jardin poster area

IATROGENIC ACUTE HEMIPLEGIA CAUSED BY PARADOXICAL CEREBRAL AIR EMBOLISM AFTER FORTUITOUS CENTRAL VENOUS CATHETER REMOVAL: AN ILLUSTRATIVE CASE

M^aantonia Estecha Foncea (1), Jonathan Pérez Vacas (2), Nicolas Zamboschi (3), Carmen Trujillano Fernández (3), Pilar Martínez López (3), Ángel Crespo Alonso (4)

1. Unidad de Críticos y Urgencias, Hospital Virgen de la Victoria, Málaga, Spain

2. Intensive Care Medicine., Hospital Universitario Virgen de la Victoria, Málaga, Spain

3. Intensive Care Medicine, Hospital Universitario Virgen de la Victoria, Málaga, Spain

4. Hyperbaric Medicine Unit, Hospital El Ángel, Málaga, Spain

Corresponding author: mae404@hotmail.com

Keywords: paradoxical air embolism, central venous line complication, hyperbaric oxygen therapy

We report the case of a 55 years old woman that suffered an air embolism on the tenth postoperative day after the resection of the fourth portion of the duodenum because of perforation of a diverticulum in that portion of the intestine. One day before scheduled discharged from the hospital, being seated, started to complain of dizziness and lost conscious. Intensivist on duty was alerted.

On arrival, we found her unconscious, with patent airway, bilateral ventilation and hemodynamically stable. A central venous line had been unintentionally removed. Patient had spontaneous decerebration movements, pupils were symmetric and reactive, oculocephalic and corneal reflexes were preserved; and there were conjugated laterolateral periodic ocular movements. Nueromuscular stretch reflexes were symmetrical and brisk. Cutaneous plantar reflexes were extensor in both feet.

Head CT showed air bubbles in the frontoparietal cortex grooves, specially in the right side, where they adopted linear appearance, suggesting air embolism as the most likely diagnosis. CT images are shown.

Transtoracic ultrasound exam was performed with no significant findings in the heart nor bubbles in its cavities.

Suspecting paradoxical air embolism 100% oxygen was administrated and urgent hyperbaric therapy was performed according to modified Lille protocol, with periods at 4 ATA and 100% oxygen at 2.8 ATA and 1.9 ATA (two sessions). A clear neurological improvement was noticed, specially in the level of consciousness, and left hemiparesis as well.

Head CT evolution at 24 and 72 hours after the embolism are shown: Air bubbles improved and some grooves blurring at the right frontoparietal convexity did appear, as an early sign of ischemic injury due to gas embolism.

Brain MRI at day 7 showed multiple lesions in both hemispheres, mainly cortical, with marked diffusion restriction supporting embolic ischemic origin. Bilateral parietal and right occipital cortex was involved.

Transesophageal echocardiography was performed 7 days after onset of symptoms, showing a persistent foramen oval.

Initial treatment was continued with 15 additional sessions of hyperbaric oxygen therapy (100% oxygen at 1.9 ATA), after which the patient remained conscious, oriented, with mild left hemiparesis with crural predominance, that doesn't prevent her from walking. There were no sensorial deficit.

Images of patient management during hyperbaric sessions are shown (chamber and helmet setting), as well as clinical situation two weeks after the embolism, walking with assistance.

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Rez de Jardin poster area

SPONTANEOUS DISSECTION OF THE CAROTID AND VERTEBRAL ARTERIES: DIAGNOSTIC TRAP IN EMERGENCY MEDICINE

Paul Gayol (1), Elodie Gintz (1), Eric Bayle (1), Fadi Khalil (2), Manana Potocnik (2), Remi Beaujeux (3), Christian Marescaux (4), Pascal Bilbault (2)

1. Emergency Department, Strasbourg University Hospital NHC (Nouvel Hôpital Civil), Strasbourg, France

2. Emergency department, Strasbourg University Hospital NHC (Nouvel Hôpital Civil), Strasbourg, France

3. Radiovascular and interventional radiology department, Strasbourg University Hospital NHC (Nouvel Hôpital Civil), Strasbourg, France

4. Neurovascular Unit, Strasbourg University Hospital NHC (Nouvel Hôpital Civil), Strasbourg, France

Corresponding author: paul.gayol@chru-strasbourg.fr

Keywords: neurological emergencies, cervical artery dissection, ischemic stroke

INTRODUCTION: neurological emergencies represent 15 percent of the activity of the emergency medicine, and about 26 percent of these diseases are stroke. Dissections of the carotid (CD) and vertebral (VD) arteries represent 2 percent of ischemic stroke, and 10 to 25 percent of them in young adults. Their clinical presentation is characterized by local signs (headache, neck pain and Horner's syndrome are the most frequent) and signs of brain and/or retinal ischemia. **METHODS:** we performed a retrospective and comparative study of all patients admitted in the ED and/or in the neurology department and having a cervical artery dissection (CAD), CD or VD. The exclusion criterion was dissections secondary to vascular surgery. The specific aims of this study were (1) to compare the clinical presentation

and management of this infrequent pathology over two successive time periods (January 2008 to December 2009, and January 2010 to May 2011); and (2) to evaluate practices concerning the use of medical imaging techniques, and treatment of this patients. **RESULTS:** during the first time period (2008-2009), 38 patients were enrolled (16 CD and 22 VD), of whom 25 were women (66 %), with an average age of 46 years. Regarding CD, 44 % of them did not present local signs, while 81.3 % presented ischemic signs. Regarding VD, 86 % of them presented one or several local signs, and the signs of ischemia had a similar rate. Twenty six percent of patients had a brain MRI with MRA and cervical MRA as initial imaging tests (18 % of VD). Anticoagulation (NFH) was started in 68.4 % of patients. During the second time period (2010-2011), 28 patients were enrolled (19 CD and 9 VD), of whom 18 were men (65 %), with an average age of 47 years. Concerning CD, 47 % of the patients did not present local signs, while 84 % presented signs of ischemia. Concerning VD, 89 % of patients presented one or several local signs, and 100 % had ischemic signs. Sixty one percent of patients had a brain MRI with MRA and cervical MRA as initial imaging tests (89 % of VD). Anticoagulation (NFH) was prescribed to 72 % of patients. **CONCLUSION:** this study, compared to others authors, found a similar clinical description. Regarding diagnostic procedures performed during the period 2008-2009, few patients had a definite diagnosis of CAD with a brain MRI/MRA and cervical MRA as investigations of first choice. On the contrary, these imaging techniques were used for most of patients during the period 2010-2011. Finally, administered therapy reflected the CADISP recommendations 2007.

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USING THE CANADIAN CT HEAD RULE IN THE APPLICATION OF COMPUTED TOMOGRAPHY IN CRANIOCEREBRAL TRAUMA

Daniela Rosillo Castro (1), María Pancorbo Carro (1), Ines García Rosa (1), Rogelio Aznar Galipienzo (2), David Levy Espinosa (3), Natalia Trigueros Ruiz (1)

1. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

2. Emergency department, Hospital General Universitario Reina Sofía, Murcia, Spain

3. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: Craniocerebral trauma, Computered Tomography, Glasgow score

INTRODUCTION

Craniocerebral trauma is a common reason for consultation in the emergency department. Unclear risk of intracranial injury in the mild craniocerebral trauma, but probably ranges from less than 1% in patients with Glasgow score of

15 and completely asymptomatic and between 1% and 5% in the patient who has experienced loss of consciousness, amnesia, vomiting and / or seizures. There are many rules for performing computed tomography (CT) in the mild head injury, one of the most important and that is validated is: Canadian CT Head Rule (CCHR).

OBJECTIVE

The reason for the study is to determine the characteristics of patients seen in our emergency department suffering mild TBI (Glasgow 13-15) who underwent cranial CT, if the CT was correctly noted, the presence or absence of intracranial injury in these patients.

Methodology

This is an observational retrospective review of medical records. We selected patients who discharge diagnosis of mild TBI had them and those who had undergone CT. The variables studied were age, sex, symptoms associated with craniocerebral trauma, to assess whether it was done properly or not the TC used the Canadian CT Head Rule: With neurological deficit, seizures, alcohol intoxication, anticoagulation, suspected fracture, 2nd more vomiting , > 65 years, amnesia of the episode. Just as your destination on discharge.

RESULTS:

In 2011 we attended our emergency department in 511 patients with a discharge diagnosis of craniocerebral trauma . Of these cranial CT was performed in 243 patients. The 47.6% of the total. The mean age of these patients was 55 years. 58% male 42% female. clinical spectrum accompanying the TBI: Unconsciousness 33.7% , amnesia 25.5%, neurological deficit 23.4% , headache 14.8%, . vomiting 7.4%, penetratin injury 2.1% , agitation 2.1%, rinorraquia and otorraquia 2% , seizures 0.8% , Canadian CT Head Rule Criteria: The CT will be held TBI patients:> 65 years: 42%, amnesia episode 25.5%, with neurological deficit 23.4%. anticoagulación 10.7%, alcohol poisoning 10.1% , more vomiting of two 5.8% , suspected fracture 1.2%. CT exams: met the criteria for 73.4% and 26.4%. Of which showed any LIC met criteria for 14% of patients who did not meet the 0.5% criteria. Were high from solving area 64.7% of patients remained in observation beds 24 hours 21.2% of patients admitted to our hospital for 5.8% and moved to the neurosurgical referral hospital for 8.3%.

Conclusion.

CT was performed at 50% of patients of which are properly specified in terms of Canadian criteria 3 out of 4. Yet the percentage of pathological CTs is low (1 in 10). Following these rules would escape limited number of TCs one pathological (1.2%). The fact rely on the reviews stories and not be a prospective, means we can not ensure that the use of such rules would make this percentage was reduced to 0%, so it would be a study done at the time of establishing a protocol on the service.

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IS THERE A MISDIAGNOSIS OF SUBARACHNOID HEMORRHAGE IN EMERGENCY DEPARTMENTS?

Hector Alonso Valle (1), Luis Gerardo Castrillo-riesgo (1), Miguel Angel Hernandez (2), Ruben Martin Laez (3), Enrique Peraita (1)

1. EMERGENCY DEPARTMENT, HOSPITAL MARQUES DE VALDECILLA, SANTANDER, Spain
2. INTESIVE CARE, HOSPITAL MARQUES DE VALDECILLA, SANTANDER, Spain
3. NEUROSURGERY, HOSPITAL MARQUES DE VALDECILLA, SANTANDER, Spain

Corresponding author: hectoravt@telefonica.net

Keywords: subarachnoid hemorraghe, diagnosis, mortality

Introduction:The signs and symptoms of subarachnoid hemorrhage (SAH) range from subtle prodromal events to the classic presentation. Prodromal events often are often misdiagnosed. Sentinel, or "warning," leaks with minor loss of blood from the aneurysm are reported to occur in 30-50% of aneurysmal SAHs.

Setting:We review the prodromal events who suffer patients presented at the ED with a final diagnosis of SAH during year 2010. The study was conducted in Marques de Valdecilla Hospital, and university 900 beds centre with neurosurgical and intensive care unit,

Results: There were 73 patients with a final diagnosis of non- traumatic SAH. The main symptoms detected were headache in 57 (78%), loss of consciousness in 34(43,5%) and nausea and vomiting in 24 (32,8%). On examination neck stiffness was detected in 40 (54,8%) patients and abnormal neurological examination in 29 (39,7%). The in hospital mortality was 28% and ICU admission 66%. 17 (23,28%) of the patients were previously assessed at the ED, all of them with headache. Other symptoms complained in this group were: vomiting (70%) and loss of consciousness (28%). Mortality in group previously reviewed didn't change significantly in comparison with the other group(18,75% vs. 28,0%)

Conclusions: "Warning bleeds" are relatively common in the ED and Early diagnosis prior to rupture will improve outcomes

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CEREBRAL THROMBOPHLEBITIS REVEALING A CATASTROPHIC SYNDROME ANTI PHOSPHOLIPIDES

Hanane Ezzouine (1), Nadia Harbouze (2), Bouchra Abdous (2), Boubaker Charra (3), Abdellatif Benslama (4)

1. anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-Morocco, casablanca, Morocco
2. Anesthesiology and intensive care, university teaching hospital Ibn Rushd-Casablanca-Morocco, casablanca, Morocco

3. *anesthesiology and intensive care, university teaching hospital Ibn Rushd-casablanca-morocco, casablanca, Morocco*

4. *anesthesiology and intensive care, university teaching hospital Ibn Rushd.CASABLANCA.MOROCCO, casablanca, Morocco*

Corresponding author: ezzouinehanane@yahoo.fr

Keywords: cerebral thrombophlebitis, catastrophic antiphospholipids syndrome, favorable evolution

Antiphospholipid syndrome

(APS) is classically defined by the association a clinical thrombotic event

or obstetrical sustainable presence antiphospholipid antibodies. the syndrome catastrophic antiphospholipid (SAPLC) is a complication often characterized by rapid onset multifocal thrombosis up predilection microcirculation.

we report the case of a young patient, 22 years old without pathological history who was admitted to the ICU unconscious glasgow scale at 11 with fever. cerebral scan didn't reveal any abnormalities, lumbar puncture concluded to meningitis which was treated. But the evolution was abnormal as the patient developed hemiparesia. The magnetic resonance imaging confirmed a cerebral thrombophlebitis. The etiologic analysis found lupic anticoagulant positive and antiphospholipid antibodies positive. All the investigations concluded to the catastrophic antiphospholipid syndrome. The evolution was favourable with anticoagulation and corticoids.

The SAPLC is very rare disease, which complicates less

1% of APS, whether primary

or associated with systemic lupus. it can be opening and revealing of APS or

occur during development, in the aftermath an infection, a surgical and / or cessation of anticoagulation.

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FREQUENT PREMATURE CONTRACTIONS; ATRIAL VERSUS UTERINE. -ELECTRO-CARDIOVERSION IN PREGNANCY-

Stacey Mans (1)

1. *Emergency department, UMCN St. Radboud, Nijmegen, Netherlands*

Corresponding author: s.mans@seh.umcn.nl

Keywords: electro-cardioversion, pregnancy, contractions

Case-report:

Frequent premature contractions; atrial vs. uterine.

-Electro-cardioversion in pregnancy-

Atrial arrhythmia are rare during pregnancy in women without previous arrhythmia. In patients with congenital disease it is more common. More foetal complications occur in women who develop arrhythmias during

pregnancy. 1 Electro-cardioversion (ECV) is a therapy of choice, normally a minor procedure requiring sedation.

Case

A 32 year old woman 24 weeks of gestation was presented with AF. She complained of palpitations, fatigue and near-collaps. She had a history of a complete transposition of the great vessels for which she underwent a Senning procedure and a non-sustained ventricular tachycardia and used the following medication; metoprolol 2dd100mg, digoxine 1dd0.25mg and acenocoumarol.

At physical examination her vital signs were; pulse 120bpm, RR177/116mmHg, saturation 100%.

ECG: showed AFI 115/min, right axis, QRS 94ms, QTc465, High R in V1-V3, negative T in V1-V3.

Extended laboratory results showed no abnormalities (i.e. INR 3.9 K3.9).

The decision was made to do an ECV. Prior cardiocography (CTG) showed no abnormalities.

ECV was done in an upright position, because of gestation, sedation by 100mg propofol, the pads were positioned anterior-posterior, and a shock of 70J; was followed by sinus rhythm.

During and after ECV vital signs remained normal.

Afterwards CTG showed a normal-to-low foetal heart rate (100-125bpm) and contractions every 8 minutes.

She was admitted to the obstetrics-ward to continue CTG and start adelat to prevent premature delivery.

Eventually contractions became less and were in complete remission after 4 hours. The next day the patient went home.

Discussion

The hyperemic uterine muscle and amnion fluid are great conductors of electricity. Several case-reports describe successful ECV without complications or harm to the foetus. The ESC-guidelines describe energy requirements are similar for pregnant and non-pregnant women. 1 Some case reports however advise lower energy levels of 10-50J. 2 In one case there was a notably hypertonic uterus, causing bradycardia in the fetus, followed by cesarean-section; the current used was 50 J. 3

Propofol rapidly crosses the placenta and distributes into the fetus. 4 Ketamine has been described as a cause of uterine contractions, this property has not been assigned to propofol. Propofol is a category B medicine in pregnancy. There are no controlled data in human pregnancy and studies done are about general anesthesia. 4, 5

Conclusion

When performing an ECV in pregnancy, CTG and the possibility to perform a caesarean section must be available. The contribution to premature uterine contractions is unclear.

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PERIMORTEM CESAREAN DELIVERY: A CASE REPORT

Mehmet Oguzhan Ay (1), Mursel Kocer (1), Muge Gulen (1), Mustafa Acin (1), Zikret Koseoglu (1), Akkan Avci (1), Nalan Kozaci (2), Salim Satar (1)

1. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

2. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Perimortem caesarean, resuscitation, emergency

Perimortem caesarean section is a rare practice underwent during resuscitation of the mother to save the lives of mother and child. We aimed to draw attention to the latest necessary informations of perimortem cardiopulmonary arrest interventions in pregnant. In this report, we described a successful perimortem caesarean section during resuscitation attempt of a 48 years old and 37 weeks pregnant women who has developed cardiopulmonary arrest. The patient has a diagnosis of diabetes mellitus before. The healthy baby girl was born after caesarean delivery in the fifth minutes of resuscitation. Resuscitation of the mother was successful and normal cardiac activity was achieved after a caesarean section, but cardiac arrest was seen again during the follow-up of the patient. Cardiopulmonary resuscitation is not effective in the third trimester because of the low cardiac output due to the aortokaval compression of the uterus. For this reason, emergency caesarean section should be done in the first 5 minutes of the resuscitation to improve the survival of the mother and baby.

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AN INCREASE IN INITIAL SHOCK INDEX IS ASSOCIATED WITH THE REQUIREMENT OF MASSIVE TRANSFUSION IN EMERGENCY DEPARTMENT PATIENTS WITH PRIMARY POSTPARTUM HEMORRHAGE

Chang Hwan Sohn (1), Won Young Kim (1), Bum Jin Oh (1), Seung Mok Ryoo (1), Dong Woo Seo (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: postpartum hemorrhage, massive transfusion, shock index

The aim of this study was to determine whether initial shock index (SI) was independently associated with the requirement of massive transfusion (MT) in emergency department (ED) patients with primary postpartum hemorrhage (PPH). A retrospective cohort study of ED patients with primary PPH was performed at university-affiliated, tertiary referral center between January, 2004 and May, 2012. Patients were classified to two groups: MT group (patients who received ≥ 10 units of packed red blood cells (pRBC) within 24 hours of ED admission) and non-MT group (patients who received < 10 units). Variables of the two groups were compared using univariate and multivariate analyses.

A total of 126 patients was included in this study. Of these patients, 26 (20.6%) were included in MT group and 100 (79.4%) in non-MT group. Patients in MT group had significantly lower blood pressure (BP), and higher heart rate (HR) compared with patients in non-MT group ($P < 0.01$). Initial SI was significantly higher in MT group than in non-MT group (1.3 vs. 0.8, $P < 0.01$). In multivariate logistic regression analysis, initial SI and HR were the only variables associated with the requirement of MT, with an odds ratio of 9.47 (95% CI, 1.75-51.28; $P < 0.01$) and 1.06 (95% CI, 1.02-1.09; $P < 0.01$), respectively

In conclusion, initial SI was independently associated with the requirement of MT in ED patients with primary PPH. Routine calculation of initial SI can help clinicians to identify patients who may benefit from timely and appropriate use of MT to improve clinical outcomes.

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A COMPARISON OF THE EFFECTS OF 'MAD HONEY,' NORMAL HONEY AND PROPOLIS ON FRACTURE HEALING

Osman Aynaci (1), Abdulkadir Gunduz (2), Nizamettin Guzel (1), Suleyman Caner Karahan (3), Ahmet Mentese (4), Aynur Sahin (2), Suleyman Turedi (5), Suha Turkmen (2), Esin Yulug (6)

1. Department of Orthopaedic Surgery, KTU School of Medicine, Trabzon, Turkey

2. Department of Emergency Medicine, KTU School of Medicine, Trabzon, Turkey

3. Department of Medical Biochemistry, Y?ld?z? Guven Hospital, Trabzon, Turkey

4. Department of Medical Biochemistry, KTU School of Medicine, Trabzon, Turkey

5. Department of Emergency Medicine, KTU School of Medicine, Trabzon, Turkmenistan

6. Department of Histology and Embryology, KTU School of Medicine, Trabzon, Turkey

Corresponding author: drsuhaturkmen@hotmail.com

Keywords: Mad honey, propolis, fracture

Introduction

Interruptions in fracture healing have become an increasingly significant health problem. These have an adverse effect on patients' state of mind and also lead to significant labor force and material losses. Studies have therefore largely concentrated on accelerating fracture healing. Propolis has a known antioxidant effect and is used in the treatment of several diseases. Grayanotoxin containing 'mad honey' is also used as an alternative therapy for various reasons. This study was intended to compare the effect of 'mad honey' and propolis on fracture healing using radiological and histopathological analysis.

Method

Femur fracture was surgically performed on 48 rats, followed by fixation. Animals were then divided into 8 groups; 2 control (15- and 30-day) and 6 treatment (15- and 30-day normal honey, 15- and 30-day 'mad honey' and 15- and 30-day propolis). Rats were sacrificed at the end of these periods, and radiological and histological examinations were performed. Radiographic images were scored by an experienced orthopedist using the Lane and Sandhu radiological scoring system. The histological scoring system of Huo et al. was used in the histological analysis of prepreparates.

Results

Radiological healing in the propolis group after 15-day therapy was statistically better than in the control ($p=0.004$) and normal honey ($p=0.006$) groups. After 30-day therapy, healing in the propolis ($p=0.005$) and grayanotoxin containing 'mad honey' groups was significantly better than in the control ($p=0.007$) group. Histologically, there was a statistically significant difference between the 15-day propolis and the other groups. We also determined a statistically significant difference between the 30-day propolis and 'mad honey' groups and the other groups.

Conclusion

This study shows that propolis and grayanotoxin containing 'mad honey' can accelerate fracture healing.

Key words: Mad honey, grayanotoxin, propolis, fracture

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BILATERAL ANTERIOR SHOULDER DISLOCATION DUE TO EPILEPTIC SEIZURE: A CASE REPORT

Mustafa Yilmaz (1), Mehmet Oguzhan Ay (2), Mesude Atli (1), Kemal Golbasi (3), Besir Dikmen (3)

1. Emergency Department, Necip Fazil State Hospital, Kahramanmaraş, Turkey

2. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

3. Orthopedics and traumatology, Necip Fazil State Hospital, Kahramanmaraş, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Shoulder dislocation, epilepsy, seizure

Anterior dislocation of the shoulder joint is common, but two-sided simultaneous dislocations of shoulders in all

directions are rarely reported. Bilateral anterior shoulder dislocation can develop after the epileptic seizures, nocturnal hypoglycemia in patients with diabetes, trauma or during sports activities. In this report, we aimed to draw attention to shoulder dislocations, which can be developed without trauma in patients with epileptic seizures. 30 years old male patient came to our emergency department with complaining of pain in both shoulders. A detailed history revealed that he did not have a history of known diseases and trauma, and he had a bilateral shoulder pain after severe contractions. Neurological examination of the patient was normal. We revealed the presence of two-sided epaulette sign, and both of the patient's arm were in abduction and external rotation. Both sided anterior dislocations of the shoulders were detected by x-ray, and shoulder dislocations were reduced under sedoanalgesia. Physicians should keep in their mind that dislocation of the shoulders may develop in patients with epileptic seizures, and also these patients should be evaluated in terms of orthopedic pathologies.

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CASE REPORT: RECURRENT TEMPOROMANDIBULAR JOINT DISLOCATION IN A PATIENT WITH MYASTHENIA GRAVIS

Jen Heng Pek, Juliana Poh

Emergency Department, Singapore General Hospital, Singapore, Singapore

Corresponding author: jenheng_@hotmail.com

Keywords: Temporomandibular joint, Myasthenia gravis, Recurrent dislocation

Objectives: Recurrent temporomandibular joint (TMJ) dislocation is more common in females and one third has underlying systemic disease. This case highlights the clinical considerations when managing a patient with myasthenia gravis presenting with recurrent TMJ dislocation.

Methods: Case report.

Results: 66 year-old Chinese lady, with myasthenia gravis, presented to the emergency department with dislocation of bilateral TMJ. She had 2 prior episodes – once 30 years ago which was reduced in hospital, another 3 years ago which reduced spontaneously. For this current episode, the TMJ dislocated after yawning and relocated spontaneously several times for 2 days prior to her attendance. Manual reduction by the Nelaton manoeuvre was successful on the first attempt. However, the left TMJ dislocated when the open mouth view of the post reduction X-rays was taken. A second manual reduction was performed successfully. The patient was discharged with a soft collar applied to limit the range of mouth opening and advised against excessive mouth opening, yawning and soft diet. The patient dislocated her left TMJ the following day when putting on her dentures. The dislocation was once again easily reduced. There was no worsening of neurological power or

fatigue during this period. The patient was referred to the dental surgeon in view of her recurrent dislocation.

Conclusions: The recurrent dislocation of TMJ can be attributed to the hypofunction of the striated musculature, and associated TMJ damage. If conservative management fails, surgery and botulinum injections can be considered.

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A MISSED CALCANEUS FRACTURE DIAGNOSED WITH TOMOGRAPHY: A CASE REPORT

Yusuf Erdem (1), Yusuf Emrah Eyi (2), Bulent Karslioglu (3)

1. Orthopaedics and Traumatology Clinic, Gulhane Military Medical Academy, Ankara, Turkey
2. Emergency Medicine, Hakkari Military Hospital, Hakkari, Turkey
3. Orthopaedics and Traumatology Clinic, Hakkari Military Hospital, Hakkari, Turkey

Corresponding author: bukars@gmail.com

Keywords: calcaneus, missed, fracture

Calcaneal fractures occur commonly with axial loading mechanism after high-energy trauma such as falls and motor vehicle accidents. Because %70-75 of calcaneal fractures are intraarticular if not recognized and treated as needed, can lead to chronic pain and loss of labor.

Calcaneal fracture line can be clearly seen at most of the cases. But sometimes misdiagnosed because of ambiguous fracture line and dense soft tissue lesions. We made this compilation of late diagnosed calcaneal fracture case with the intention of drawing attention to this kind of injury.

CASE REPORT

21 year old male patient admitted to the emergency department with the complaint of heel pain after a fall from height. Immediately after fall patient was seen by a general practitioner. Ankle AP/L X-ray graphy had been taken and oral medical treatment started and short leg splint applied while no fracture observed. Patient referred to our hospital because of pain and edema ongoing for 10 days.

X-ray taken in our hospital and a significant fracture line wasn't seen. An increase at Gisanne angle (normally 1000, at our patient 1440) and normal Böhler angle (normally 25-400, at our patient 270) was measured. Lateral fibular fragment was seen at Broden radiograph. Fracture classified as Sanders Type IIIC on the basis of CT image.

RESULTS

Patient underwent open reduction and internal fixation surgery by orthopaedist. Shor leg cast applied after surgery. Cast removed and physical rehabilitation started after 2 months. Radiological evidence of union observed at postoperative 3rd month.

DISCUSSION

Calcaneal fractures as a result of high energy trauma occur at younger and more active person. Despite the diagnosis is

usually easy some cases need to be taken CT for classification and choice of appropriate treatment.

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POSTERIOR SHOULDER DISLOCATION BY ELECTRIC SHOCK

Emre Salçın (1), Fatih Mehmet Korçak (1), Ömer Faruk Çelik (1), Serkan Emre Eroğlu (1), Özge Onur (1), Haldun Akoğlu (2), Arzu Denizbaşı (2), Çiğdem Özpolat (1)

1. Emergency department, Marmara University Pendik Research and Training Hospital, İstanbul, Turkey
2. Emergency department, Marmara University Pendik Research and Training Hospital, İstanbul, Turkey

Corresponding author: drseroglu@gmail.com

Keywords: Electrical injury, Shoulder dislocation, Trauma

INTRODUCTION

Electrical injuries can cause dermal burns, motor and sensory deficit, fractures and dislocation of joints. Posterior shoulder dislocation is a very rare injury caused by direct trauma, convulsive seizure or electro convulsive therapy. More than %50 percent of posterior shoulder dislocation is miss diagnosed at first evaluation. Delaying on the diagnosis make difficult the reduction and increase the morbidity.

CASE

22 years old male presented with 220 Volt electrical injury in construction work. His left hand touched the wire for 2-3 seconds and he was complaining only from pain of his left shoulder. Vital signs were stable. In the physical examination left shoulder tenderness and limited shoulder motion were present. There were no history of trauma or seizure after electric shock. The ECG was normal. Laboratory test were okay except slightly elevated CPK (359 U/L (N:0-190)). On X-RAY posterior sholder dislocation was observed. Reduction was performed with sedoanalgesia. And patient discharged.

DISCUSSION and CONCLUSION

Posterior shoulder dislocation is a very rare injury that result from strong and sudden internal rotator muscle contraction caused by convulsive seizure or electrical shock. We should remember that electrical injury can cause any kind of bone an joint injury by sudden muscle contraction. A careful physical examination and a simple X ray can make the correct diagnosis. Early diagnosis and proper treatment mean well conclusion.

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A COMPARATIVE STUDY ON THE SEDATIVE EFFECT OF ORAL MIDAZOLAM AND ORAL PROMETHAZINE MEDICATION IN LUMBAR PUNCTURE

Hojjat Derakhshanfar (1)

1. Emergency Medicine department, Imam Hossein hospital, Tehran, Iran, Islamic Republic of

Corresponding author: hojjatderakhshanfar@yahoo.com

Keywords: Lumbar puncture, anxiety, premedication

Aim Lumbar puncture (LP) essentially is a painful and stressful procedure that indicated for diagnosis and therapeutic purposes. One way to reduce the anxiety is oral premedication. The aim of this study is to compare clinical effects of oral Midazolam and oral Promethazine.

Method This prospective randomized controlled clinical trial study was performed on 80 children 2-7 years old were candidate for LP. They were divided into two randomized equal groups. First group received oral Midazolam syrp 0.5 mg/kg and the other group received oral Promethazine syrp 1 mg/kg. Level of sedation, hemodynamic changes and any other complications monitored every 5 minutes from 30 minutes before the start of the procedure.

Results Midazolam group and Promethazine group were similar in age, gender and weight. Oral Midazolam significantly had shorter onset of sedation ($P<0.001$) and also shorter duration to maximal sedation ($P<0.022$). The two groups were similar with respect to sedative effect at all time. The only complication that was significantly more in Midazolam group, nausea and vomiting ($P<0.012$).

Conclusion Midazolam syrp and Promethazine syrp have same sedative effect in children. Both of these medications are easy to use in preschool children and none of them appeared to be superior to another.

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EVALUATION OF TERMINAL SEDATION IN CANCER PATIENTS TERMINAL IN AN EMERGENCY DEPARTMENT

Rafael Infantes-ramos (1), Cristina Fernández-figares (1), José Valero-roldan (1), Inmaculada López-leiva (1), Iván Villar-mena (2), Maria Del Pino Ortega De Leon (2)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Sedation, Terminal, Cancer

Introduction / Background : In recent years has increased the use of terminal sedation in the emergency department because of increased deaths from terminally ill patients.

Objetives: To analyze if carried out proper palliative sedation for terminally ill cancer patients in the emergency department.

Design: Descriptive retrospective, observational study.

Methodology:

Sample: 68 patients who died of advanced cancer disease during 2009,2010,2011. (precision=0.009; Alfa=0.05).

Instruments: medical records and nursing records of patients, Clinical Practice

Guideline for Paliative Care by Spanish Society Paliative Care, randomly chosen.

Statistical analysis: We conducted a descriptive phase of the following variables: age, sex, monitoring by palliative care unit, terminal sedation record, refractory symptoms, drugs used in terminal sedation. SPSS.V15

Results: We obtained a male predominance (62%) with a mean age of 83 years. 78% of the patients were followed up by the palliative care unit.

The most common symptoms were refractory agitation (55%) followed by dyspnea and pain. (33%, 9%).Terminal sedation was recorded in 76% of patients but only 11% were used appropriate drugs, used in 64.7% of cases sedative drugs were not pure and produced as secondary action sedation (morphine) with standard dose without conforming to the characteristics of the patient.

Discussion: All the clinical guidelines agree that the drug of choice to perform terminal sedation is midazolam, except in cases of agitation or delirium predominate where are neuroleptics (haloperidol, chlorpromazine and levomepromazine). But in any case an opioid such as morphine, as the sole sedative for performing main one terminal sedation as a sedative not pure but occurs secondarily sedation.

Conclusion: It is necessary to train emergency doctors in the terminally ill patient, and should therefore be promoted refresher courses imparted by palliative care service for better clinical and pharmacological care of these patients

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PAIN ASSESSMENT IN THE EMERGENCY DEPARTMENT – A COMPARISON BETWEEN TWO SCALES IN A SWEDISH HOSPITAL

Heilborn Umut (1), Göransson Katarina E (2), Djärv Therese (1)

1. Emergency department, Karolinska University Hospital Solna, Stockholm, Sweden

2. Emergency Department, Karolinska University Hospital Solna, Stockholm, Sweden

Corresponding author: therese.djarv@karolinska.se

Keywords: VAS, NRS, Patient preference

Background: Acute pain is one of the chief complaints at an emergency department (ED). Two commonly used scales used to assess intensity are the Visual Analogue Scale (VAS) and the Numeric Rating Scale (NRS). However it remains unknown which one is superior to use in the ED.

Hypothesis : Values on VAS correlate to values on NRS. Patients prefer NRS before VAS for assessing pain.

Methods: This study was cross-sectional with a consecutive sample, performed at the ED. Patients who visited the ED due to chest pain, abdominal pain or an orthopedic condition estimated their pain using both VAS and NRS and were interviewed regarding their view on the scales. Data was analyzed with chi square tests and manifest content analysis.

Results: 217 (70% of eligible) patients participated. Values on NRS and VAS highly correlated, $r_s = 0,959$. NRS was thought to be the most user-friendly scale by 133 patients (61%), the scale with the most precise description of the pain by 115 patients (53%) and totally preferred scale by 154 patients (71%). There was no difference between socio-demographic groups in pain score or preference for the scales. Patients with chest pain rated their median pain score lower than patients with orthopedic ailment, irrespective of the scale used. The majority of the patients thought that the scales described their pain in an adequate manner but that scales missed aspects such as character and variance. Scale error was the same for both scales.

Interpretation: NRS values correspond to VAS values, thus, pain assessed with different scales at different time points may be comparable. Since NRS is more simple to use and a majority of the patients preferred NRS to VAS, NRS may be most appropriate to use at the ED. In addition to pain score, aspects of pain such as character and variation over time, should be considered.

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IMPACT OF ACUTE PAIN MANAGEMENT ON LYMPHOCYTE DNA DAMAGE AND OXIDATIVE STRESS IN TRAUMA PATIENTS

Ozgur Sogut (1), Leyla Solduk (2), Mehmet Gokdemir (2), Halil Kaya (2), Ozgur Sogut (2)

1. Department of Emergency, Bezmialem Vakif University, Istanbul, Turkey

2. Emergency Medicine, University of Harran, Sanliurfa, Turkey

Corresponding author: drosogut@harran.edu.tr

Keywords: Paracetamol (acetaminophen), lymphocyte DNA damage, oxidative stress index

Background: Trauma-related acute pain, which comprises a large proportion of Emergency Department admissions, is a complaint that should be addressed seriously. Both deterioration of the current clinical condition and potential chronic pain can be prevented with proper pain management. Paracetamol (acetaminophen) is the most commonly prescribed analgesic for acute pain management. This drug may be administered via peroral (PO) or intravenous (IV) routes. However, the efficacy and safety of IV paracetamol in comparison compared with placebo and other analgesics are unclear. In this study, we investigated the effect of paracetamol on lymphocyte DNA damage and oxidative stress parameters.

Materials and Methods: Thirty-five patients who were admitted to our Emergency Department due to mild or moderate trauma were included in the study. Blood samples were obtained from the patients before and at 2 and 12 h after analgesic administration. Demographic characteristics, clinical findings and pain levels (visual analogue scale [VAS]) of the patients were recorded. Serum lymphocyte DNA damage and total oxidant status (TOS), total antioxidant status (TAS) and oxidative stress index (OSI) were studied as oxidative stress parameters.

Results: The mean age of the patients exposed to mild and moderate trauma was 39.70 ± 20.31 years. Serum lymphocyte DNA damage levels were 14.97 ± 12.38 AU (arbitrary units) in group 1 (before analgesia), 13.94 ± 9.28 AU in group 2 (2 h after analgesia), and 10.57 ± 8.73 AU in group 3 (12 h after analgesia). Significant differences were observed among the groups with respect to serum lymphocyte DNA damage ($p < 0.01$). Mean serum TOS and OSI values were lower in groups 2 and 3 compared to that in group 1. Furthermore, mean serum TAL values were higher in group 3 than in group 1. However, no significant differences were observed among the groups in terms of TAS, TOS, and OSI values.

Conclusions: We investigated the effect of paracetamol on lymphocyte DNA damage and oxidative stress parameters. Our preliminary results showed that acute pain developing in patients exposed to trauma leads to oxidative stress and that this condition resulted in oxidative DNA damage in human T lymphocytes. However, TOS and OSI as oxidative stress parameters decreased, and lymphocyte DNA damage decreased significantly, after treatment of trauma-related acute pain with paracetamol. DNA damage in lymphocytes of trauma patients might be explained by oxidative damage. Further controlled studies carried out with a large case series and other analgesics are necessary to support and extend these data.

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COMPARISON OF EFFECT OF INTRAVENOUS KETAMINE WITH INTRAMUSCULAR KETAMINE FOR ORTHOPEDIC PROCEDURES IN CHILDREN'S SEDATION

Mahdi Momeni (1), Morteza Saeedi (2), Laya Sharif Tehrani (3), Roya Basirani (4), Mohammad Reza Farnia (5)

1. Emergency department, Tehran University of Medical Science, Shariati Hospital, Tehran, Iran, Islamic Republic of

2. Emergency department, Tehran University of Medical Sciences, Shariati Hospital, Tehran, Iran, Islamic Republic of

3. faculty of medicine, Tehran Azad University faculty of Medicine, Tehran, Iran, Islamic Republic of

4. Emergency Department, Tehran University of medical Sciences, Shariati Hospital, Tehran, Iran, Islamic Republic of

5. Emergency department, Tehran university of medical sciences, Shariati hospital, Tehran, Iran, Islamic Republic of

Corresponding author: m_saeedi@tums.ac.ir

Keywords: intravenous ketamine, intramuscular ketamine, children sedation

Introduction

Ketamine is as a general anesthetic for short-term surgical procedures. The aim of this study is to compare effects of intravenous(IV) ketamine with intramuscular(IM) ketamine in children admitted to hospital emergency department.

Methods

This is a clinical trial on 60 patients who were randomly classified into two groups. First one received intravenous ketamine (1mg/kg) and second one received intramuscular ketamine (4mg/kg). Data were collected before, during and after the procedure. Time to reach sedation, sedation severity and complications of the drug until discharge were studied.

Results

In this study, 60 patients were evaluated. The average length of procedures were similar in both groups ($P > 0.05$). According to this study, sedation levels in the two groups in the fifth, tenth, fifteenth minutes did not show significant differences ($P > 0.05$), but there was significant difference in sedation levels of patients in the 30, 35, 40 and 45 minutes during sedation ($p = 0.03$), ($p = 0.04$), ($p = 0.03$) and ($p = 0.05$). There was no significant difference in incidence of complications between 2 groups.

Discussion

There was no significant difference in complications and level of sedation in both group but sedation is longer in intramuscular group so, intravenous ketamine is the desirable approach

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COMPARISON OF THE ANALGESIC EFFICACY OF DEXKETOPROFEN TROMETAMOL AND MEPERIDINE HCL IN THE RELIEF OF RENAL COLIC

Mehmet Oguzhan Ay (1), Ahmet Sebe (2), Nalan Kozaci (3), Salim Satar (1), Ayca Acikalin (2), Muge Gulen (1), Selen Acehan (1)

1. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey

3. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey

Corresponding author: droguzhan2006@myynet.com

Keywords: Renal Colic, Dexketoprofen, Meperidine

Aim: In this study, the analgesic effects of Dexketoprofen Trometamol and Meperidine Hydrochloride were compared on patients diagnosed with renal colic.

Material and Methods: This study was a prospective, randomized, double-blind study. 52 patients, between the ages of 18-70 who were diagnosed with renal colic, were enrolled in the study following ethics committee approval.

Before drug injection, Dexketoprofen Trometamol and Meperidine Hydrochloride were placed in closed envelopes, and patients were randomly given a single dose of intravenous infusion for 20 minute. Severity of pain and symptoms were evaluated with Numerical Rating Scale (NRS) and Renal Colic Symptom Score (RCSS) for each patient immediately before administration of drugs and 30 minutes after the end of the application. At the same time systolic arterial blood pressure (SBP) and diastolic arterial pressure (DAP), respiratory rate (RR), heart rate (HR), nausea, vomiting, and reactions due to drug administration were recorded before and after drug administration. In statistical methods; t test, analysis of variance, repeated measure analysis were used for analysis of normally distributed continuous variables and Mann-Whitney U, Kruskal Wallis and Friedman tests were used for analysis of not-normally distributed continuous variables. In the analysis of discrete variables, chi-square test was used.

Results: In both groups, a significant decrease was found in NRS values measured after 30 minutes from drug administration, but the decline in Dexketoprofen Trometamol group ($p = 0.02$) was found to be more. Although a significant decrease was found in RCSS ($p < 0.001$) values measured after drug administration in Dexketoprofen Trometamol group, no significant decrease was found in Meperidine HCl ($p = 0.058$) group. After drug administration, a statistically significant decrease was found in SBP, HR and RR in both groups. Also a statistically significant decrease was found in DAP in Meperidine group. But these changes in vital findings were not serious enough to disrupt patients' clinical status.

Conclusion: With this study, we concluded that Dexketoprofen Trometamol, from NSAID group, can be within the primary treatment options for renal colic because of better analgesic efficacy, being well tolerated by patients compared to Meperidine hydrochloride.

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COMPARISON OF TRADITIONAL TWO INJECTIONS DORSAL DIGITAL BLOCK WITH SINGLE SUBCUTANEOUS DIGITAL VOLAR BLOCK.

KEY WORDS: FINGER, BLOCK, ANESTHESIA

Nathalie Winterdal (1)

1. Emergency Department, Reinier de Graaf Hospital, Delft, Netherlands

Corresponding author: nwinterdal@yahoo.com

Keywords: finger, anesthesia, block

Introduction:

Patients with finger injuries present themselves frequently at the Emergency Department (ED) for treatment. The majority of these injuries can be treated under digital anesthesia. The most commonly used digital anesthesia method is the traditional two injections dorsal block at the base of the finger. An alternative technique is the single

injection subcutaneously at the volar side at the base of the finger. There are also other digital anesthesia techniques involving a single injection subcutaneously at the volar side at the base of the finger. The single digital volar block remains a technique that is seldom used in the ED. The question arises as to how effective the volar technique is in comparison to the traditional dorsal technique. Moreover, how much more patient friendly is the single injection compared to the two injection technique.

Methods:

Database of Cochrane, Embase, PubMed were searched. Search terms used were "phalanx" OR "digital" OR "finger", "anesthesia", "block", with humans as the only limit.

Key words: finger, digital, block, anesthesia.

Results:

Four randomized controlled trials (RCT) specifically addressed the question above, with one article including a meta-analysis on digital block trials.

The RCT by Williams et al, in which healthy volunteers were included, showed no significant statistical difference in pain scores between the two techniques, p: 0.3269, but given the choice the volunteers preferred the volar technique over the dorsal one, p:0.0014.

Two of the other three RCT's included patients with injuries distal to the proximal crease, of which Yin et al concluded that there was no significant difference in injection pain or time to onset of anesthesia between the two study groups, respectively p: 0.513 versus p: 0.722. In the study by Bashir et al, the mean pain scores were 4.27(SD 0.87) and 5.27 (SD 1.05) for volar and dorsal techniques respectively, p: 0.05. They also found that the volar block was 100% effective versus 80% for the dorsal block, p: 0.05.

The RCT by Cannon et al included patients with injuries distal to the distal inter- phalangeal joint. At 5 minutes after anesthesia 76% of the patients in the volar group were adequately anesthetized compared to the dorsal group, 65%, but was not statistically significant, p: 0.436. The self reported distress scores between the two groups failed to reach statistical significance, p: 0.332.

The meta-analysis of Yin et al reported no significant difference between the dorsal and volar blocks with regard to injection pain, weighted mean difference of 0.06 cm (95%) CI-0.37, 0.48, p: 0.79. The distribution of anesthesia was incomplete for the proximal phalanx in the volar group, RR 10.71, ((95% CI 3.95, 29.05) p< 0.000001). No significant difference was found in the distribution of anesthesia over the middle and distal phalanx between the two groups, p: 0.09, p: 0.52 respectively.

Conclusion: The single subcutaneous digital volar block is as effective as the two injections dorsal digital block except in injuries requiring anesthesia to the dorsum of the proximal phalanx. Even though the pain scores between the two groups were not statistically significant, volunteers in one study showed significant preference to the single injection technique over the two injections, indicating that the single digital block technique a more patient friendly approach is.

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UNDERSTANDING EMERGENCY PHYSICIAN INTENTION AND USE OF A PRESCRIPTION DRUG MONITORING PROGRAM

Marc L Fleming Phd, Mph, Rph (1), Mark D Hatfield Ms (1), Knox H Todd Md, Mph (2), Monica K Wattana Md (2)

1. *College of Pharmacy, University of Houston, Houston, United States*

2. *Emergency Department, MD Anderson Cancer Center, Houston, United States*

Corresponding author: mwattana@mdanderson.org

Keywords: Opioid Misuse, chronic pain, Prescription Drug Monitoring Program

Introduction: The misuse, abuse and diversion of prescription opioids has become an increasingly source of harm for individuals, care providers, and the US public. In 2008, the CDC reported 14,800 overdose deaths involving aberrant prescription opioid use. Emergency physicians (EPs) face the challenge of caring for chronic pain patients daily and are among the top five prescribers of opioids. The state operated prescription drug monitoring programs (PDMPs) have been implemented to allow prescribers and pharmacists to consult patients' controlled prescription drug histories when providing care to prevent abuse. Therefore, this study aimed to characterize the perceptions of EPs towards usage of PDMPs, usage limitations, and other decision factors guiding usage of PDMPs in the ED. Ultimately, information obtained from this study will be used to guide future software enhancements and provider education to promote usage of PDMPs as a safety measure to avoid opioid misuse.

Methods: A cross-sectional, 24-item questionnaire was developed to assess physician adoption of the Texas PDMP (Prescription Access in Texas [PAT]) using a model of technology acceptance. The study was conducted with emergency department physicians attending a citywide conference on emergency medicine. The questionnaire was divided into two sections; one section was for with prior use of PAT and the other section was aimed at

understanding PAT nonusers. Both sections asked about questions related to technology acceptance (perceived ease of use, perceived usefulness, attitude and intention); 1=strongly disagree to 5=strongly agree. Descriptive statistics were calculated for all variables. Summated total mean scales (possible range from 2 to 10) were calculated for the technology acceptance constructs that asked more than one item.

Results: The usable survey response rate was 54.3% (75 of 138). Respondents were primarily from an academic ED (76.7%) setting with 51% being attending physicians and 27.4% were registered for PAT. Among those registered, 70% reported past use of PAT during the past month. Users reported a moderately positive perceived ease of use (mean = 6.1± 2.3). Perceived usefulness (3.1± 1.2) was assessed with a single item. Positive attitudes were expressed toward PDMP use (6.8± 1.7) and physicians expressed strong positive intention toward use (8.5± 2.0). Nonusers reported a positive perceived ease of use (6.9± 1.5), perceived usefulness (7.5±1.7) and attitudes toward PDMP use (7.9±1.6. Nonusers expressed a positive intention to use the PDMP in the future (3.77±0.88). Approximately 65% of the total sample reported interest in training related to PAT use.

Conclusion: Texas EPs have a moderately positive perception of PAT regarding ease of use and perceived usefulness. Additionally, EPs expressed a very favorable attitude and intention towards PAT use. Lack of awareness and the demand for training highlight educational deficiencies that should be addressed in the near future. Awareness and training can lead to an increase in PAT utilization which could help mitigate the morbidity and mortality associated with prescription opioid abuse and improves patient care in the ED setting.

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NATURAL HISTORY OF PAIN AFTER WHIPLASH INJURY AT THE ACUTE PHASE : TRACEMED STUDY

Grégoire Versmée (3), Olivier Bineau (1), Fatima Rayeh (1), Pierre Ingrand (2), Youcef Guechi (1), Caroline Delaire (1), Jean-yves Lardeur (1), Michel Scépi (1)

1. Service d'Accueil des Urgences, CHU Poitiers, Poitiers, France
2. Epidémiologie et biostatistique. Inserm CIC 0802, CHU Poitiers, Poitiers, France
3. Service des Urgences Adultes, CHU Bordeaux - Hôpital Pellegrin, Bordeaux, France

Corresponding author: gregoire.versmee@gmail.com

Keywords: Whiplash injury, Immobilization, Analgesics

AIM: Describe the evolution of pain within 7 days after a whiplash injury.

PROCEDURE: From July 2011 to June 2012, we carried out a prospective observational study in the Emergency Department at Poitiers' hospital. Patients involved in this

study had a whiplash injury less than 48h, without any clinical or radiological criteria of serious injury. A numerical scale was used to assess the pain of these patients. The data were collected at the first consultation, and later by phone on the 2nd, 5th and 7th days.

RESULTS: 29 patients met the inclusion and follow-up criteria. The average values of the numerical scale of pain was 5.3/10 at the emergency consultation, 4.4/10 after 2 days, 2.6/10 after 5 days and 1.4/10 after 7 days. The pain reduction between each consultation was statistically significant (p<0,05). The proportion of patients whose pain was assessed at 0/10 was 0% at the emergency consultation, 3% (n=1) after 2 days, 14% (n=4) after 5 days and 34% (n=10) after 7 days.

CONCLUSION: Pain reduction in the first week after a whiplash injury is good enough to make the dynamic x-rays earlier. Further studies would complement these results to allow a reduction in work stoppages and therefore, the cost for the society.

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THE COMPARISON OF SEDATIVE EFFECTS OF KETAMINE AND ETOMIDATE FOR THE REDUCTION OF CHILDREN WITH LIMB FRACTURE/JOINT DISLOCATION

N Rana Di?el (1), Hayri Levent Yilmaz (2), Salim Satar (3), Ayça Akp?nar (1), Hasan Yesila?aç (4), Akkan Avc? (3)

1. Department of Emergency Medicine, Cukurova University Faculty of Medicine, Adana, Turkey
2. Department of Pediatric Emergency Medicine, Cukurova University Faculty of Medicine, Adana, Turkey
3. Emergency Department, Numune Training and Research Hospital, Adana, Turkey
4. Emergency Department, Ba?kent University Training and Research Center, Adana, Turkey

Corresponding author: ranalpay@gmail.com

Keywords: sedation and analgesia, etomidate, ketamine

Introduction: The efficient and safe relief of pain, anxiety and stress of children with limb fractures/joint dislocations is essential for initial evaluation and proper treatment in the emergency department.

Aim: The goal of our study was to compare the induction and recovery times, and emergency department stay duration of children needed closed reduction for limb fracture/joint dislocation who were sedated with etomidate or ketamine. We also aimed to evaluate the procedural success and side effects of the agents, the satisfaction levels of patients', parents' and the physicians'.

Materials and Methods: This study was performed as a prospective, randomized and blinded clinical study in 7-18 years old aged 44 healthy children with seperated limb fractures/joint dislocations in Pediatric Emergency Unit of Cukurova University School of Medicine between December

2005 and October 2007. The patients were divided into two groups, one received etomidate+fentanyl while other received ketamine for procedural sedation. The induction and recovery times of the agents, emergency department stay durations and vital signs and Ramsay sedation scores of patients before, during and after sedation procedure were measured. Side effects and satisfaction levels of the patients', parents' and the physicians' were evaluated by a questionnaire.

Results: The mean induction time in minutes in Group 1 was $4,3 \pm 1,0$ and $2,2 \pm 1,6$ in Group 2 ($p=0,00$), where mean recovery time was $15,8 \pm 7,7$ minutes in Group 1 and $20,7 \pm 10,8$ minutes in Group 2. The mean of emergency department stay duration was $145,5 \pm 63,3$ minutes in Group 1 and $196,5 \pm 141,6$ minutes in Group 2. Frequency of side effects was 37,5% in Group 1 and 25,0% in Group 2. Children sedated with etomidate complained less pain ($p=0,042$), and patients and parents were more satisfied ($p=0,020$ and $p=0,019$).

Conclusions: The induction time with ketamine was shorter than with etomidate but recovery times, emergency department stay durations and side effect frequencies were similar in both groups. Etomidate and ketamine are both safe for procedural sedation of children in the emergency department.

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PAIN MANAGEMENT IN ELDERLY PATIENTS GOING TO THE EMERGENCY DEPARTMENT: DOES A COMPUTER-BASED TRIAGE SYSTEM HELPS ?

Mathias Faniel (1), Laurence Decorte (2), Cathy Okuka Mbala Onema (3), Rafik Karmali (4), Murielle Surquin (2), David De Bels (3), Thierry Preseau (1)

1. Emergency Department, CHU Brugmann, Brussels, Belgium

2. Geriatrics, CHU Brugmann, Brussels, Belgium

3. Intensive Care, CHU Brugmann, Brussels, Belgium

4. Internal Medicine Department, CHU Brugmann, Brussels, Belgium

Corresponding author: mathias.faniel@chu-brugmann.be

Keywords: pain management, geriatrics, triage

Introduction:

Despite an important investment of pain handling in emergency departments, literature reveals that pain care in this setting still remains a large problem, especially in the elderly population in whom clinical pain expression can be peculiar or decreased, therefore altering its detection and thus its management.

Study goal:

The purpose of the study was twofold. Firstly, we have analyzed the compliance of the ED team about the pain management in the elderly population (age >70). Secondly, since we have moved from a paper format to a fully computerized patient file system, we have analyzed the impact of this change on pain handling.

Patients and methods:

We have retrospectively analyzed charts of consecutive patients aged 70 years or older during two periods of two months. The first period (group 1) included patients when the paper files were used and the second period (group 2) when the new computerized file system was functional. A six-month interval period was respected to exclude crossover and allow the team to familiarize themselves with the new computer system. The charts were analyzed regarding pain complaint in nurse and medical files, NRS pain scores, adequacy of staff's response according to the institution's protocols and pain reevaluation after treatment. Both groups were compared in terms of age, sex, type of pathology, cognitive function using a Short Mini Mental State Examination (sMMSE) and whether patients were in a community dwelling or not. Statistical analysis included Mann-Whitney and Chi-Square tests.

Results:

A total of 823 charts were analyzed. We observed no statistical difference concerning the sex, the cognitive function (MMSE<16/21, extracted from SHERPA), but the mean age of patients was 76 in group 1 and 82 in group 2 and 76% were not living in institutions in group 1 for only 70% in group 2; all these results were statistically significant. Global pain assessment was performed in only 33% and 36% of the patients in both groups.

Our results did not show any statistical difference in analgesics administration between the two groups (52% in group 1 and 57% in group 2). We also observed that the reevaluation of pain is very poor, without statistical significance (10% in group 1 and 18% in group 2).

Conclusion:

Despite the availability of a well standardized pain management protocol in our institution, the assessment and treatment of pain in the elderly people remains rather poor. Although, the introduction of a systematic computerized triage-tool including a NRS pain score improves somehow these figures, it is still unsatisfactory probably due to the absence of systematic use of the tool.

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NO BROKEN, NO PAIN.

Daniel Fernández Vargas (1), Manuel Alejandro Castillo Benzo (1), Susana Martín Caravante (2), David Godoy Godoy (2), Ana José Duarte Romero (1), Eduardo Rosell Vergara (1)

1. Emergency Department, Hospital Clínico Virgen de la Victoria, Málaga, Spain

2. Emergency Department, Distrito Málaga, Málaga, Spain

Corresponding author: dafevargas@icloud.com

Keywords: Nitrous oxide, analgesia, traumatology

OBJECTIVE: To analyze the effectiveness of the administration of nitrous oxide as analgesia in the reduction

maneuvers of minor traumatology processes of the trauma emergencies.

METHOD: Analysis of data from a sample of 12 patients, collected from January 1 to February 16, 2013. They were given mixture of Nitrous Oxide and Oxygen (50/50), self-regulated with their own breathing (due to the use of masks with one-way valve exclusively in drug administration by inhalation) until the appearance of symptoms of euphoria beside the least patient resistance at the beginning of reduction maneuvers in cases of anterior dislocation of shoulder (8 patients), distal radius fracture with dorsal deviation (2 patients), knee lock (1 patient) and bimalleolar ankle fracture (1 patient).

RESULTS: From the 8 patients (66.6% of the sample) with shoulder dislocation, with heterogeneous muscle mass between them, 7 (87.5% of them) were reduced with success in the first attempt after gas administration and verify impregnation symptoms in the patient. The remaining patient, due to its state of anxiety, needed the administration of 5 mg of diazepam sublingual, after removal of the gas for not enhance its effects, and was later able to make successfully the reduction.

The patient with blocked knee, who was young and athletic adulthood, was resolved within a few minutes in a progressive extension of the knee, with McMurray maneuver positive for knee internal compartment.

Patients with distal radial fracture and ankle bimalleolar fracture (24.9% of the sample), of middle age, needed local anesthesia infiltration after removal of the gas, because they still were in pain while we did the reduction maneuvers.

None of the patients, despite some of them were polypharmacy, presented adverse symptoms described in the data sheet. All of them also exhibited a good and rapid recovery to their baseline prior to inhalation of the gas (all in less than five minutes), after removal of mask and patient spontaneous normal ventilation.

- Graphics -

CONCLUSIONS: Nitrous oxide, as self-regulatory administration by mask unidirectional valve 50/50 concentration, has been demonstrated in our sample its good efficacy as an analgesic in reducing the pathologies usual emergency trauma.

Specially in the pathologies with contracture muscle mass (74.9% of the sample, 88.8% of the same), the nitrous oxide shows particularly an excellent muscle relaxant effect in patients.

Likewise, it has not proved effective in reduction processes in bone fractures (24.9% of the sample, 100% of them). Therefore, in our experience (in a small sample) we recommend the use of the nitrous oxide as an analgesic in those pathologies with muscle contracture, but not in the processes of bone fractures.

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IMPROVED PAIN MANAGEMENT IN EMERGENCY MEDICINE AFTER IMPLEMENTATION OF REVISED GUIDELINES

Geesje Van Woerden (1), Christien Van Der Linden (1), Crispijn Van Den Brand (1), Kees Den Hartog (2), Floris Idenburg (3)

1. *Emergency Department, Medisch Centrum Haaglanden, The Hague, Netherlands*

2. *Anesthesiology, Medisch Centrum Haaglanden, The Hague, Netherlands*

3. *Surgery, Medisch Centrum Haaglanden, The Hague, Netherlands*

Corresponding author: geesjevanwoerden@hotmail.com

Keywords: Pain Management, Emergency Medicine, Pre- post implementation study

Background: The pain prevalence in the ED, throughout the world, ranges from 52-79%. Yet the treatment of pain at the ED is suboptimal: oligoanalgesia is a common problem. Several factors cause oligoanalgesia: underestimation of pain by caregivers, lack of knowledge/ guidelines and cultural factors.

Objective: Improve the pain management at the Emergency Department by implementation of revised guidelines in pain management.

Methods: This was a prospective pre-post intervention cohort study with implementation of a revised guideline for pain management at our Emergency Department (level 1 teaching hospital and trauma center), in which nurses are allowed to administer analgesia (including low dosage piritramide i.v.) without doctor-intervention. Pain was measured with the Numeric Rating Scale (NRS) at entrance and leave of the E.D. We included every adult patient (16 years and older) presenting with pain at the Emergency Department. Exclusion criteria: age < 16 years, no triage, patient not able to answer, and NRS at entrance not measured. The guidelines in pain management were revised according to the current standard. The outcome measures were: delta-NRS (difference between pain rating score at entrance and leave of the ED), administration of analgesia and time to analgesia. We adjusted the analyses for significant confounders such as triage-category (high-middle-low), usage of pain medication before attending ED, administration of analgesia at the ED, specialism and age.

Results: A total of 3,614 patients (1,928 and 1,686) were included in our study. Patients enrolled in the two phases of the study were similar with regard to age, gender, and origin (Dutch or not). During the first phase of the study 25.4 % of the patients with NRS between 4-10 received analgesia. After implementation 32% of these patients received analgesia ($p < 0.001$). After implementation the odds to receive analgesia was 1.35 higher than before implementation. The ROC showed an AUC of 67% (95% CI 0.64 – 0.69). The difference between pain at entrance and leave of the ED (Delta-NRS) differed before and after implementation (4.8 versus 4.4, $p < 0.001$). The time to analgesia was shorter after implementation (45 versus 40 minutes, $p < 0.021$).

Conclusion: The implementation of a revised guideline for pain management at the Emergency Department lead to a significant improvement in administration of pain medication as well as an improvement in time to analgesia. The delta NRS differed significantly, yet it was higher in the

period before implementation. Discussion: Documentation of the NRS at leave of the ED turned out to be difficult, because it did not match the common practice. This could explain the unexpected finding of a greater delta NRS before implementation than after implementation.

Future research will focus on the long-term effects of the implementation of the revised guidelines and documentation of pain reassessment during the stay at the Emergency Department.

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THE EFFECT OF PATIENT SATISFACTION MEASURES ON THE ADMINISTRATION OF NARCOTICS IN THE EMERGENCY DEPARTMENT

Paul Porter (1), Michael Silverman (2), Brian Walsh (2)

1. Emergency Department, Rhode Island Hospital, Providence, United States

2. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: briwalsh10@aol.com

Keywords: Drug seeking, Patient Satisfaction, Narcotic abuse

Study Objectives: It is not infrequent that patients will present to an emergency department (ED) for an acute exacerbation of chronic pain. In some of these cases, ED staff will believe that the patient is there primarily to obtain the euphoric effects of narcotics ("drug seeking"). This patient group represents a difficult management challenge at a time where medicine has shifted from paternalism to consumerism. The increasing use of customer satisfaction measures (such as Press Ganey Surveys) as part of staff evaluations has led to an increased focus on meeting patient expectations. It is unclear how to best handle situations where patient expectations collide with what the emergency staff believes is safe and appropriate care. To date most research has focused on the under-treatment of pain. We sought to evaluate ED staff perceptions about the prevalence of drug seeking behavior and the factors that affect the decision to provide narcotics for those believed to be drug seeking.

Methods: Design: ED staff surveys. Setting: An urban ED with 110,000 patient visits annually. Protocol: ED attending physicians, ED nurses, and ED residents were asked to complete the same survey addressing their perceptions about drug-seeking behavior in the ED. Responders were asked to quantify the percentage of patient visits which they believed to be primarily for "drug-seeking." Responders were asked to identify the most common chief complaint and drug abused in these cases. Responders were asked to describe the key factors that create pressure to administer narcotics to patients that are thought to be drug seeking and to quantify the effect of customer service measures on this decision.

Results: Completed surveys were returned from a random sample of 15 ED attending physicians, 15 ED nurses, and 15

ED residents. The mean, mode and median for percentage of visit for drug seeking behavior were 26%, 10%, and 10% respectively. ED nurses viewed the prevalence of drug-seeking visits as more than twice as high as attending physicians and residents (46% versus 18% and 17%, respectively). Back pain and headache accounted for 73% of estimated drug-seeking visits and hydromorphone was the drug thought to be most frequently requested by drug-seeking patients (89%). 91% of attending physicians, 47% of residents and 67% of nurses identified customer service measures as influencing their decision to provide narcotics when they felt a patient may be drug seeking.

Conclusion: ED staff members perceive that a significant percentage of patient visits are primarily for the euphoric effects of narcotics. This seems to involve a small number of chief complaints. Efforts to maintain positive customer service measures create pressure on physicians to administer narcotics when they may not be indicated medically. New ways must be sought to identify and manage the expectations of this population so physicians can treat patients with safe and medically appropriate care.

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IMPLEMENTATION OF PSA IN AN EMERGENCY DEPARTMENT IN THE NETHERLANDS

Jorinde Helmich (1), Douwe Rijpsma (2)

1. Emergency Department, Rijnstate Hospital, Nijmegen, Netherlands

2. Emergency Department, Rijnstate Hospital, Arnhem, Netherlands

Corresponding author: jorindehelmich@hotmail.com

Keywords: PSA, implementation, Netherlands

Implementation of PSA in an Emergency Department in the Netherlands

J. Helmich (Emergency Medicine Resident), D. Rijpsma (Emergency Physician), Rijnstate Hospital Arnhem, Netherlands

Background

In February 2012, the Inspection of Health Care in the Netherlands published a report¹ aiming professionalization of Procedural Sedation and Analgesia outside of the Operating Room. A national guideline² has been published, but its implementation has been a struggle for many EDs in the Netherlands. Some of the bottlenecks are 1. The education of the PSA providers, 2. Safety and Quality provided by minimal requirements and 3. Support from adjoining specialisms towards the ED. We developed different strategies to overcome these bottlenecks.

Sedation committee

Specialists from all relevant departments formed a sedation committee, aiming to organise PSA in a responsible way hospital-wide. In collaboration a practical local protocol, specific for the ED, was created containing both recommendations from the national guideline as well as local agreements.

Time-Out procedure

In anaesthesiology, the Time-Out Procedure is introduced as a proven method to avoid preventable errors. We developed and applied a Time-Out Form specifically for the ED which should be performed before PSA starts.

Registration of complications

We developed a digital version of the registration form that is part of the national guideline. This allows us to register relevant data on the patient, given medication, and adverse events. We incorporated an automatic link to our hospital's digital registration of complications. These complications are being reviewed in our 3-monthly Mortality & Morbidity meeting.

Training procedure

Because new EM residents start their specialisation every year, a specific PSA training for doctors was developed. Before starting PSA under supervision, every EM resident has to complete both the Anaesthesiology Speciality and a certified Advanced Life Support course. Additionally, a written theoretical exam has to be passed. Practical experience is obtained by performing PSA under close supervision 5 times. Furthermore, the EM resident performs PSA independently twice, with only distant supervision from the attending EP, before an EM resident is allowed to perform PSA independently.

Conclusion

During the implementation of PSA in our ED, we participate in our hospital-wide Sedation Committee, we wrote a local practical 'PSA in the ED' protocol, we composed a ED-specific Time-Out Procedure and complication registration and we developed an examination to test EM residents wanting to provide PSA. This way, we have ensured that PSA on the ED will be provided in a safe way!

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THEORETICAL KNOWLEDGE OF PSA CAN AND SHOULD BE IMPROVED!

Jorinde Helmich (1), Douwe Rijpsma (2)

1. *Emergency Department, Rijnstate Hospital, Nijmegen, Netherlands*
2. *Emergency Department, Rijnstate Hospital, Arnhem, Netherlands*

Corresponding author: jorindehelmich@hotmail.com

Keywords: PSA, knowledge, self-tuition

Theoretical knowledge of PSA can and should be improved! J. Helmich (Emergency Medicine Resident), D. Rijpsma (Emergency Physician), Rijnstate Hospital Arnhem, Netherlands

Background

Knowledge of applicable guidelines is supposed to be up to date in health care providers. Emergency Physicians (EPs) and Emergency Medicine (EM) Residents who apply Procedural Sedation and Analgesia (PSA) are supposed to have extensive knowledge of the existing guidelines¹ and their local protocols.

Methods

In collaboration a practical local protocol, specific for the ED, was created containing both recommendations from the national guideline as well as local agreements. A written theoretical test was developed, consisting of 75 true/false questions, all based on the local protocol. The test covers indications, preparation, procedure, complications and pharmacology of PSA on the ED. PSA providers (both EPs and EM residents) were asked to fill out this test without preparation or further information on the goal. As a control group, junior doctors who do not provide PSA were also asked to complete the test. Participants were then given two weeks to study the protocol, motivated by the knowledge they would be tested again. After two weeks, participants were tested again on their theoretical knowledge.

Results

The PSA providers scored significantly better on the pre-test than the junior doctors (73.8% vs. 68.6%, $P < 0.05$). There was a significant improvement in post-test results in PSA providers (73.8% vs 87.3%, $P < 0.001$). Improvement was substantial in all subcategories, but was most pronounced in the indication group and the pharmacology group. Improvement in test scores was largest in the EM residents compared to the more experienced EPs.

Discussion

Although many EPs provide PSA and complications are very rare, there is room for improvement in theoretical knowledge. This study demonstrates that improvement can be made by regular self-tuition. Although we did not research this, intuitively it seems logical to assume that a practical course with a certified testing method can give further improvement. The initiative of the Netherlands Society of Emergency Medicine Physicians (NSEP) to organise a certified PSA course will provide for this in the near future.

It was remarkable that the largest lack of knowledge was in the field of pharmacology. We argue that in future educational efforts, this subject should receive considerable attention.

Conclusion

Theoretical knowledge of PSA can and should be improved. Self-tuition combined with theoretical testing can provide this.

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EVALUATION OF THE PAIN SCALE AND OF THE TREATMENT EFFECTIVENESS IN THE USE OF PARACETAMOL, TRAMADOL AND FENTANYL ON THE PATIENTS RECEIVED IN THE EMERGENCY DEPARTMENT OF THE "SF SPIRIDON" EMERGENCY CLINICAL HOSPITAL, IASI

Viorica Popa (1), Diana Cimpoesu (2), Elena Butnaru (3)

1. Emergency Department, Clinical Emergency County Hospital "Sf.Spiridon" Iasi, Iasi, Romania
2. Emergency Medicine, UMF "Gr.T.Popa" Iasi, Iasi, Romania
3. Pharmacology, UMF "Gr.T.Popa" Iasi, Iasi, Romania

Corresponding author: dcimpoesu@yahoo.com

Keywords: Pain scale, Tramadol, Fentanyl

Background

Pain is the main symptom and reason for which patients go to the doctor. When it is persistent and severe, pain can become annoying for both the suffering patient and the doctor trying to relieve it. For pain treatment there should be a combination of medical, pharmacological and surgical treatment.

Even if in our country there are no emergency protocols that assess and treat pain, pain management has become a preoccupation for emergency doctors.

Objectives:

The objective of the study has been pain assessment and treatment using the 5-point-simple verbal scale (the simple verbal scale): 0=absence of pain; 1=mild pain; 2= moderate pain; 3=severe pain; 4=very severe pain. The main symptoms and their severity were assessed before the treatment and at 15, 30, 60 minutes after the medicine administration, writing down the adverse reactions.

Results

50 patients have been involved in the study for a period of 4 months, being treated with paracetamol via IV perfusion, intramuscular Tramadol or via perfusion and Fentanyl via IV.

Using simple verbal assessment the pain severity score before the treatment was of 46% very severe (EVS=4), 50% severe and 4% moderate (EVS=2).

At the end of the whole treatment period the scores on the pain scale were significantly changed: most of the patients (60%) had as symptoms mild pain (EVS=1), 18% had EVS=2 and 16% left without showing any symptoms.

For 6% (EVS=3) of those questioned there was needed a third way of treatment, i.e. transfer to another clinic in order to get surgery.

Most of the people in the group selected for the study were females (60%) with an age average of 58.1, and the rest were males with an age average of 46.6.

Being aware of the fact that Paracetamol and opioids influence liver functions, TGO and TGP transaminase were taken before administration, the results showing the fact

that those with a hepatic/liver dysfunction had a more effective treatment, their pain being alleviated 4 times as compared to those with normal TGO and TGP for whom pain was alleviated only 3 times.

Only 3 of the 40% of the patients on which Tramadol was used as analgic, needed to be treated with Fentanyl in order to reduce the pain severity score from 3 and 4 (ESV=3, EVS=4) to an acceptable score for the patient (EVS=1, EVS=0).

Only 2 of the patients treated with Tramadol presented adverse reactions (dizziness, vomiting, ortostatic hypotension) and needed to get treatment via perfusion.

Only 24% of the patients were administered Fentanyl of primary intention. By analyzing the data mentioned before, Fentanyl maintains its supremacy as a strong Opioid, only 6 patients needing more Fentanyl or Tramadol for reducing pain from EVS=4 to a score of EVS=2 or 1. The only exception was a young patient with acute ischemia of a superior member in which case we had to titrate the Fentanyl doses (16) in order to reduce the patient's pain, from a high score (EVS=4) to an acceptable one, of EVS=2, that lesion needing subsequent emergency intervention.

6 of the 16 patients that were administered Paracetamol as analgesic of primary intention needed the addition of an opioid in order to reduce the score from EVS=4 to EVS=1, proving that Paracetamol has both analgesic and anti-pyretic qualities.

Discussions:

The authors of a study done in Rochester, USA and published in 'A Peer- Reviewed Medical Journal', 85(5), 451-458, in the article "Pain Management in the Cirrhotic Patient" prove that opioids should not be used on patients with a hepatic/liver dysfunction because they hasten portal encephalopathy, as Fentanyl and Tramadol are metabolized 75% and 60% by the liver. Still, Natasha Chadok and Kymberly D.S. Watt MD, give as a solution the short term use of opioids for patients that suffer from acute pain caused by something else than the liver. Being aware of these recommendations in the case of the patients suffering from liver cirrhosis under study, we administered only Fentanyl, favouring also IV hydration by using perfusion solutions and administering antiemetics.

Conclusions

In conclusion, the association of 2 opioids and of an opioid and Paracetamol have a synergic effect on pain.

The beneficial effects and the minor adverse reactions that appeared in the cases of the patients treated with opioids should confirm our trust in their use as analgesics.

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COMPARISON OF SEDATION ANALGESIA AND SUPRASCAPULAR NERVE BLOCK IN REDUCTION OF SHOULDER DISLOCATION. (PRELIMINARY REPORT)

Onur Tezel (1)

1. emergency department, Gülhane Military Medical Academy, ANKARA, Turkey

Corresponding author: dr.onurtezel@gmail.com

Keywords: suprascapular nerve block, shoulder dislocation, sedation and analgesia

Introduction:

The shoulder is the most commonly dislocated joint in the human body. (1) Shoulder dislocations may be posterior or inferior, but approximately 98 % is dislocated anteriorly. (2) Reduction of the dislocation should be accomplished expeditiously, because the incidence of neurovascular complications increases with time. (3) Reduction can be accomplished using various techniques, most of which involve traction, leverage, or scapular manipulation principles.(4)

We would like to mention a prospective controlled study, which compares the success of suprascapular nerve block and sedation analgesia in shoulder dislocations including patient comfort, physician comfort, Visual Analog Score (VAS) and success of reduction process.

Material and methods:

4 patients included in the study so far. According to the randomization scale; we applied sedation and analgesia procedure for 1st and 4 th patients and suprascapular nerve block for 2nd and 3rd patients

Results:

Parameters obtained from the evaluation of the cases presented in Table 1. When we compare the patients in suprascapular nerve block group and sedation analgesia group; before and after reduction VAS score, the success rate, complications, comfort of the patient and the doctor was found to be similar properties in both groups. But discharge time was significantly lower in patients treated with suprascapular block.(table 1)

Discussion:

A comparative study between suprascapular nerve block and sedation analgesia in shoulder dislocation was not reached in the literature. According to the data obtained from our study up to now; suprascapular nerve block is thought to be a good alternative for sedation analgesia in shoulder dislocation.

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USING KETAMINE-PROPOFOL COMBINATION FOR RSI IN EMERGENCY SETTINGS

Zsolt Levente Béres (1), Hadrian Liviu Borcea (2), Mihai Botea (2), Enik? Muresan (2), Nicoleta Romaniuc (2)

1. ED, Bihor County Emergency Clinical Hospital, Orade, Romania

2. ED, Bihor County Emergency Clinical Hospital, Oradea, Romania

Corresponding author: dr_beres_zsolt@yahoo.com

Keywords: Ketamine, Propofol, Rapid sequence intubation in emergency settings

Introduction: The combination of ketamine and propofol is well known and studied for procedural sedation in the ED. This combination with proved favorable haemodynamical properties can also be used for RSI in patients who need emergent airway management outside the operating theater.

Objectives: To study the clinical effects of ketamine – propofol combination for RSI in emergency settings.

Material and methods: Critically ill patients who were oro-tracheally intubated either in the pre-hospital settings or in the ED of Bihor County Emergency Clinical Hospital were selected for this study after obtaining the agreement from the local Ethical Committee. The RSI for these patients was performed with ketamine 1 mg/kg and propofol 1 mg/kg, without fentanyl. The primary outcome was the 20% change in mean arterial blood pressure from the baseline value at 5, 10 and 30 minutes after induction. We also noted the quality of hypnosis, the adverse events and the evolution of the Ramsey sedation score.

Results: 56 patients were enrolled in the study period (2012.03-2012.10). There was no serious adverse effect noted, all the patients were successfully intubated. There were no significant differences recorded for the quality of hypnosis and the evolution of Ramsey score obtained in our study compared to the same data obtained from the specific literature. We observed significant blood pressure fall only in 3 patients (5.35%) at 5 minutes and 7 patients (12.5%) at 10 minutes, without any haemodynamical effect at 30 minutes. These values are significantly lower than those reported by several clinical studies for propofol (48.8-67.4%, $p < 0.0001$) and comparable with those for etomidate (7.3-10.6%, $p = 0.7351$).

Conclusions: By combining ketamine with propofol for RSI in the emergency settings we can reach the same objectives as with the traditional induction agents alone but without having the negative haemodynamical effect. This alternative becomes more interesting as there is a new tendency of withdrawing the etomidate from the induction of septic patients in ED.

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EVALUATION OF REGIONAL ANESTHESIA PROCEDURE IN THE EMERGENCY DEPARTMENT AND PREHOSPITAL CARE: A REGIONAL SURVEY

Mathieu Violeau (1), Cedric Touquet (1), Ismael Rida-chafi (1), Ivan Rafei Darmian (1), Hugues Lefort (2), Fatima Rayeh-pelardy (3)

1. emergency departement and prehospital care, centre hospitalier de NIORT, NIORT, France

2. Emergency Medical Department, Fire Brigade of Paris, Paris, France

3. Emergency and Critical Care Medicine, centre hospitalier de NIORT, POITIERS, France

Corresponding author: violeaum@hotmail.fr

Keywords: regional anesthesia, emergency, practice

Introduction: The regional anesthesia (ALR), initially restricted to anesthetists, is underused in emergency medical department, often due to lack of training. Ten years after the recommendations, a regional investigation, was realized to estimate the practice of the ALR of the emergency physicians.

Material and methods: This descriptive study, multicenter and forward-looking was led during period from January 1st till April 30th, 2012 in the region Poitou-Charentes, France. The survey inspired by the 2002 conference of expert, allowed to collect epidemiological and administrative information: place of exercise, type of structure, activities within services, training, status and years of experience but also information on their practice of ALR and the interests of specific training in this area.

Results : We collected 144 responses from 317 physicians in the forty six emergency regional structures. The rate of participation amounted to 45,4%. 55% (N=79) of doctors had more than ten years experience and 70% (N=101) had an activity in the emergency care and pre hospital care. 71% (N=102) of the physicians practiced the ALR, among which 46 % without training. The indications were: against pain (71 %, N=72), explorer (60 %, N=61) or during reduction of fracture or dislocation (52 %, N=53). The most had not meet complications (96%, N=98). There was a statistical association between the experiment of the doctor and the practice of the ALR (p=0,01) but no significant link between the experiment and the training (p=0,31).

Seventy two per cent (N=104) of physicians judged the useful of ALR. However, the emergency physicians underlined a lack of training (70 %, N=67), rare indications (45 %, N=43), a fear (8 %, N=8) and a lack of interest (4 %, N=4). 89 % (N=86) realized the femoral block and respectively 32 %, 20 %, 3 % the block of the hand, the face and the foot.

65 % of the doctors didn't know the recommendations of 2002. 71 % ignored the existence of the antidote. 97 % are interested in a regional training.

Finally, 59 % judged compulsory the training of the femoral block. The majority had a favorable opinion for the learning of the block of the hand, the foot and the face.

Conclusion: The benefit of regional anesthesia in the emergency units is well established not only its effectiveness but also its simplicity, ease of use and the lack of overall impact. In spite of the recommendations, it turns out that there is a misunderstanding and a real need for training among the emergency physicians including for the young graduates. The simulation lab seems to be a path of excellence in teaching

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PERFORMANCE AND SAFETY OF PROCEDURAL SEDATION AND ANALGESIA PERFORMED BY EMERGENCY PHYSICIANS IN THE EMERGENCY DEPARTMENT OF A DUTCH UNIVERSITY MEDICAL CENTRE

Arjan F.e. Vos (1), Bas De Groot (1), Christian Heringhaus (1)

1. Emergency Department, Leiden University Medical Center, Leiden, Netherlands

Corresponding author: c.heringhaus@lumc.nl

Keywords: Procedural sedation, Safety and quality, Sedation and analgesia

Objective

Since the introduction of emergency physicians (EPs) in the Netherlands there is a growing number of procedural sedation and analgesia (PSA) in emergency departments (ED) performed by EPs. To establish quality and safety of PSA performed by non-anesthesiologists the Dutch Institute for Healthcare Improvement (CBO) developed a multidisciplinary guideline for PSA outside the operation room. The final guideline was published in 2012 and requires amongst other things sufficient education related to PSA.

Unlike PSA performed by emergency physicians in other countries there is not much known about PSA performed by emergency physicians in the Netherlands. To evaluate the performance and safety of PSA done by emergency physicians, using above-mentioned guidelines for safe sedation, a prospective study was set up in the emergency department of a Dutch University Medical Centre.

Methods

A prospective observational cohort study is performed at the emergency department of the Leiden University Medical Center (LUMC). In this study we included hemodynamically stable patients undergoing procedural sedation with etomidate for electrical cardioversion as treatment for supraventricular arrhythmias.

For PSA in the ED we are using a department protocol based on the CBO guideline. Prior tot sedation a pre-procedural screening is performed by the sedation doctor including AMPLE history, previous anesthesia history, ASA-classification and fasting. The patient is also screened for difficult bag-mask ventilation and/or difficult intubation and other potential risk associated with PSA.

In addition to the Medical Treatment Contracts Act (WGBO) the patient is informed about the procedural sedation and potential risks.

The procedural sedation during ECV and patient recovery takes place in a one-person room in the ED. Before the sedation starts all patients are pre-oxygenated for 3 minutes with a non-rebreathing mask (> 10l O₂ / min). A 'silence sedation' signboard is placed outside the treatment room. During sedation there is a continuous ECG, SaO₂ and conscious state monitoring. Blood pressure is measured at 5-minute intervals.

The team for procedural sedation during ECV consists of three members: An emergency physician, a cardiology resident and an assistant (emergency nurse, emergency medicine resident or physician assistant). The cardiology resident determines the indication for ECV and performs de ECV through self-adhesive pads or the patients ICD. The emergency physician administers etomidate (0.1 mg / kg LBM), determines the depth of sedation and is responsible

for the procedural sedation and patients discharge. The assistant observes patient's airway, breathing and circulation and intervenes together with the emergency physician when there is a problem.

All team members are trained in airway management, Advanced Life Support and the stabilization of critical ill patients. Furthermore the emergency physicians and assistants are specifically trained and supervised in procedural sedation and the use of etomidate by an anesthesiologist who is member of the local PSA committee and the national working group for PSA from the Netherlands Society of Emergency Physicians (NVSHA). One of the members of the PSA team stays with the patient until return of full consciousness.

The patient is discharged when there is full consciousness, normal vital signs, mobility and possible intake of oral fluids. A family member or friend is present when the patient is leaving the ED. All information around procedural sedation is documented on a specific sedation form.

Hypoxia (SaO₂<90%), apnoea and the use of bag valve mask ventilation, hypotension (< 90mmHg or a drop of more than 20% of the systolic blood pressure), bradycardia (pulse rate <50 bpm), and vomiting are considered sedation (adverse) events.

Primary outcomes of this study were (adverse) events and efficacy of PSA. A standardized protocol and data collection form was used to collect data.

Results

From November 1st 2009 to June 1st 2011 procedural sedation for ECV was performed in 226 adult hemodynamically stable patients with a median age of 61 years. 28% of the patients were female. Most patients (82%) had an ASA score of I or II, 36 patients had a ASA score of III.

6 patients had a short period of apnea. 3 patients (1.3%) needed bag valve ventilation for a short period of apnea without desaturation. One patient vomited after sedation, one patient had a short period of bradycardia without hypotension and one patient had a bronchospasm with good result after inhalation of salbutamol/ipratropiumbromid spray. No serious adverse events occurred.

Conclusion / recommendation

The new multidisciplinary guideline for procedural sedation outside the operating room in the Netherlands, set up by the CBO, has become final in 2012. Herein is concluded that PSA can be responsibly performed by non-anesthesiologists. This conclusion is primarily based on foreign research.

From the moment that emergency physicians in our hospital began to perform PSA the CBO PSA guideline was strictly followed.

Unlike PSA is not without risks we can conclude that the use of a clear department protocol for PSA based on the Dutch national guideline, adequate trained staff and a well-equipped environment ensures that sedation is a safe and effective procedure when performed by emergency physicians in a Dutch emergency medicine department. The amount of incidents related to PSA in our study is low and mostly self-limiting and no major adverse events have occurred.

Because adverse events are rare a nationwide registration system regarding PSA related complications should be realized to obtain a good picture of the PSA done by emergency physicians in Netherlands.

Our findings support the view of the guideline-working group that procedural sedation under certain conditions can responsibly be carried out by non-anesthesiologists, also by emergency physicians in Netherlands.

Po-569

Hall Accueil Expo poster area

FACTORS ASSOCIATED WITH PAIN MANAGEMENT IN ELDERLY PATIENTS PRESENTING FOR FALLS IN EMERGENCY DEPARTMENT

François-xavier Ageron (1), Cecile Ricard (2), Jean Jacques Banihachemi (3), Marc Haesevoets (4), Odile Dumont (5), Bahman Moheb (6), Pascal Couturier (7)

1. Emergency department, Regional Hospital of ANNECY - SAMU 74, ANNECY, France

2. Northern French Alps Emergency Network, Centre Hospitalier de la Région d'Annecy, ANNECY, France

3. Emergency, Centre Hospitalier Universitaire de Grenoble, GRENOBLE, France

4. Emergency, Centre Hospitalier Albertville, ALBERTVILLE, France

5. Emergency, Centre Hospitalier de Voiron, VOIRON, France

6. Gerontology, Centre Hospitalier de la Région d'Annecy, ANNECY, France

7. Gerontology, Centre Hospitalier Universitaire de Grenoble, GRENOBLE, France

Corresponding author: fxageron@ch-annecy.fr

Keywords: Elderly, pain, morphine

Background Pain management represent a quality indicator in Emergency Department (ED). Several studies demonstrated that elderly patient received significantly lower doses of analgesia and were at risk for inadequate pain treatment compared to younger adults. Identifying factors associated with pain care process could be considered as a first step to improving care for elderly patients. The aim of the study was to assess pain management in the elderly patient in ED.

Methods A multicentre observational retrospective study based on material of Falls in Elderly Emergency Department patient (FEED) cohort of the Northern French Alps Emergency Network. Thirteen ED participated in the study, and were included in the Northern French Alps Emergency Network health care quality program about the elderly admit for falls in ED. Medical records and treatments were recorded during randomly selected week in the year 2010 and 2012. Pain assessment, level of pain, analgesia and opioid use were collected. Inclusion criteria were patients aged 75 years or more attending in ED for falls. Primary end-points were assessment of pain with Visual Analogic Scale (VAS), Numerical Rating Score (NRS), Verbal Descriptor Scale (VDS) or any comment of pain in the medical records, and analgesia corresponding to any pain treatment given to elderly patients. Secondary end-point

was administration of intra-venous morphine. We compared pain assessment and analgesia by sex, age and pain level with Pearson Chi-square test. Multivariate analysis was conducted with logistic regression model with end-points as dependent variable and age, sex, bone fracture, functional impairment, poor cognitive condition, polypharmacy, lives in old people's home, loneliness as independent variables.

Results 5,109 elderly were included in the cohort. Mean patient age was 84.7 sd 5.7. 71.0% were women. Pain assessment was recorded in 3445 patients, 67.4%; 95%CI, 66.1-68.7. Age and sex were not significantly different between group. VAS, NRS and VDS were used to assess pain in 2908 patients, 56.9%; 95%CI, 55.5-58.3. 948 (32.6%) patients reported no pain, 703 (24.2%) weak pain (VAS \leq 30 or NRS \leq 3, VDS=1) 681 (23.4%) moderate pain (VAS between 31 to 59, NRS 4 or 5, VDS= 2), 576 (19.8%) severe pain (VAS \geq 60, NRS \geq 6, VDS 3 or 4). Analgesia was conducted in 2037 (39.9%) patients attending for fall and in 1127 (57.5%) patients who reported pain. Morphine intra-venous was used for 140 (25.9%) elderly with severe pain. Factors independently associated with pain assessment were bone fracture, adjusted odds ratio (OR), 2.07; 95%CI, 1.69-2.54; $p < .001$; living in old people's home OR, 0.53; 95%CI, 0.44-0.66, $p < .001$; poor cognitive condition OR, 0.77; 95%CI, 0.64-0.93; $p = .006$; loneliness OR, 0.56; 95%CI, 0.43-0.72, $p < .001$. Factors independently associated with analgesia were pain assessment OR, 2.53; 95%CI, 2.06-3.10; $p < .001$; sex female OR, 1.57; 95%CI, 1.28-1.92; $p < .001$; bone fracture OR, 5.11; 95%CI, 4.23-6.17; $p < .001$; living in old people's home OR, 0.79; 95%CI, 0.64-0.97; $p = .026$. Factors associated with use of intra-venous morphine were bone fracture OR, 3.84; 95%CI, 2.83-5.21; $p < .001$; pain assessment OR, 3.03; 95%CI, 2.15-4.27; $p < .001$; severe pain OR, 7.73; 95%CI, 4.83-12.39; $p < .001$.

Conclusion Pain was assessed with pain scale in 57% and could be considered as insufficient for people attending for fall in ED. Therefore, it was as same as described in some studies for others adults in ED. Older people at risk were more likely to not have pain assessment and particularly people living in old people's home and people in loneliness condition. These seniors at risk were also at risk to not have analgesia. Pain management could be considered as a good indicator for health care quality program. We observed that people at risk to have a poor pain management were also older people with poor healthy conditions.

Po-570

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EVALUATION OF EFFICACY OF VITAMIN B6 IN CONTROL OF VOMITING IN CHILDREN WITH GASTROENTERITIS ADMITTED IN EMERGENCY DEPARTMENT

Hojjat Derakhshanfar (1)

1. Emergency Medicine Department, Imam Hossein hospital, Tehran, Iran, Islamic Republic of

Corresponding author: hojjatderakhshanfar@yahoo.com

Keywords: vomiting, dehydration, vitamin B6

After treatment in both treatment groups, 40 patients (83.3%), mild dehydration, and 8 patients (16.7%) had moderate dehydration. Vomiting in 28 patients (58.3%) of children after treatment with vitamin B6 and in 37 patients (77.1%) after treatment with ORT was controlled. The mean frequency of vomiting after treatment with vitamin B6 was 1.7 ± 1.3 times and in the control group (treated with ORT) was 1.5 ± 0.77 time, but no significant difference between the severity of dehydration, controlling vomiting and the mean frequency of vomiting wasn't observed in both groups. ($P > 0.05$)

Conclusion: It seems that the use of oral vitamin B6 treatment has no benefit and impact compared with the ORT. Thus, use of vitamin B6 in the prevention of vomiting due to acute mild to moderate gastroenteritis is not only scientifically, but in the present study it was proved to be ineffective. This work was done on a comparative basis and further researches are recommended.

Po-571

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COMA AS A LAST SYMPTOM LEADING TO DIAGNOSE OF ADDISON'S DISEASE IN A 17-YEAR-OLD PATIENT

Jitka Dissou (1), Alexandra Lehovcová (1)

1. Pediatric Emergency Department, University Hospital Motol, Prague, Czech Republic

Corresponding author: jdissou@seznam.cz

Keywords: Addison's disease, hypoglycemia, adolescent

We present a case report of a 17-year-old girl rushed to the Pediatric Emergency Department in deep coma. By a bedside test we found hypoglycemia 1.1 mmol/l (19.8 mg/dl). After application of 10 ml 40% glucose the girl returned to consciousness for a while, but followed by generalized convulsions. She was transferred to the Pediatric intensive care unit already alert, spontaneously ventilating, without convulsions. Low level of cortisol (under 5.5 nmol/l) led to diagnose the Addison's disease. Last 3 months, the patient has been treated for suspicion of anorexia nervosa and 6 months ago she was hospitalized for acute gastroenteritis with hypoglycemia 1.9 mmol/l (34,2 mg/dl), but this hypoglycemia wasn't further examined. Both these symptoms in her history are related to Addison's disease. In this case report we want to highlight the importance of proper evaluating the detected hypoglycemia in adolescents and the need for essential differential diagnosis of hypoglycemias in this age.

Po-572

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FATAL PROGRESS OF VIRAL INFECTION DURING INFLUENZA EPIDEMIC – ACUTE MYOCARDITIS WITH PERACUTE COURSE.

Jitka Dissou (1), Alexandra Lehovcova (2)

1. Pediatric Emergency Department, University Hospital Motol, Prague, Czech Republic

2. Pediatric Emergency Department, University Hospital Motol, Prague, Prague, Czech Republic

Corresponding author: a_petrovska@yahoo.com

Keywords: myocardiitis, viral infection, influenza epidemic

We report here on a case of acute cardiac failure due to myocarditis during culmination of epidemic influenza during March 2012 in the Czech Republic. A 17 years old, previously relatively healthy boy was rushed to the Paediatric Emergency, reporting 3 days fever, fatigue, headache, dry cough, with progression to syncope that morning. Because of hypotension and general appearance, the patient stayed for short-stay observation, infusion therapy and additional examination. Laboratory tests revealed elevated levels of CK-MB and troponin I; echocardiogram confirmed suspicion of acute myocarditis. After hypotension progressed, the patient was transferred to Paediatric Intense Care Unit for complete resuscitation care, where echocardiogram was repeated. The dysfunction of left cardiac ventricle was detected and extracorporeal membrane oxygenation (ECMO) was applied. Despite 11 hours of ECMO, situation led to akinesis of both ventricles with infaust prognosis. This case report demonstrates the key need for wide differential diagnosis of influenza-like symptoms.

Po-573

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MANAGEMENT OF OESOPHAGEAL COINS IN CHILDREN

Richard Pertwee (1)

1. Paediatrics, Leicester Royal Infirmary, Leicester, United Kingdom

Corresponding author: rpertwee@hotmail.com

Keywords: Oesophagus, Coin, Children

Purpose

Evidence suggests that asymptomatic children, with no previous oesophageal pathology, presenting within 24 hours of ingestion with an oesophageal coin, can be managed conservatively for up to 24 hours rather than early active removal. Our aims were to determine the number of children this could be applied to and to determine what percentage of asymptomatic coins presenting in the oesophagus will pass spontaneously with no intervention.

Methods

A retrospective analysis was conducted for children presenting with an ingested oesophageal coin to the Paediatric Emergency Department from 2004-2011. Patients were identified by searching for “foreign body in alimentary canal”, “ingestion of foreign body” and “oesophageal obstruction” on the Emergency Department Information System (EDIS). Patients <16 yrs with a confirmed oesophageal coin foreign body were included.

Results

63 patients (26 female and 37 male) presented with a confirmed oesophageal coin and the median age was 4yrs (8months – 13yrs).

25 asymptomatic patients were not admitted. 10 were followed up in the Paediatric ED review clinic the next day and 15 were reviewed in the ENT clinic the same day. All were re-x-rayed within 18hrs, 1 patient was admitted from the ENT clinic for removal of a coin in the upper oesophagus under general anaesthetic. The rest of the coins had passed.

38 patients were admitted to ENT with 17 asymptomatic and 21 symptomatic. 17 coins were confirmed in the upper oesophagus, 12 in the middle oesophagus and 9 in the lower oesophagus. Symptoms included vomiting (52%) drooling (38%) and coughing (10%). Of the admitted patients 9 were observed and re-x-rayed up to 8 hours later, they were all discharged as the coin had passed. 29 had a general anaesthetic to remove the oesophageal coin.

Conclusion

Patients that are asymptomatic on presentation of a confirmed oesophageal coin could be conservatively managed and re-x-rayed within 24 hours.

Po-574

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A STUDY TO DETERMINE THE SPANISH SPEAKING PARENTS' ACCEPTANCE OF DISCHARGE INSTRUCTIONS IN PEDIATRIC EMERGENCY ROOM

Kumara Nibhanipudi (1), Roger Chirugi (2)

1. Emergency department, NYMC, Metropolitan hospital center, New York, United States

2. Emergency Medicine, NYMC, Metropolitan hospital Center, New York, United States

Corresponding author: kumarnibh@yahoo.com

Keywords: spanish speaking parents, generic discharge, disease specific discharge

Objective: is to determine the Spanish speaking parents' acceptance with regards to discharge instructions for a specific condition versus general discharge instructions in pediatric Emergency room.

Hypothesis: Spanish speaking parents are more likely to prefer to have disease specific discharge instructions rather than general discharge instructions from the pediatric emergency room.

Methods: 500 parents volunteered to participate in the study. The parents scored using the scale from one to four

for quality of discharge instructions for both generic as well as disease specific discharge instructions.

Scoring systems: The Scale included:

- Score 1: not acceptable.
- Score 2: does not matter, it's a waste of time, and I don't read the instructions any way.
- Score 3: somewhat acceptable.
- Score 4: highly acceptable.
- Results: 500 parents participated in the study. For generic discharge instructions the results were as follows: score 1- 344/500; score 2- 54/500; score 3- 58/500; score 4 -44/500. For disease specific discharge instructions, the results were as follows: score 1: 25/500; Score 2: 54/500; score 3 11/500; Score4-410/500.
- Statistics: Chi-square test was used. A 4 by 2 contingency table was employed for the chi-square test. The p-value was statistically significant ($p < 0.0001$).

- Conclusions: The disease specific discharge instructions may be more acceptable to Spanish speaking parents than generic discharge instructions.

Table 1

- numbers • score 1 Score 2 • score 3 • score 4
- generic discharge instructions (500) • 344/500 • 54/500 • 58/500 • 44/500
- Disease specific disease instructions(500) • 25/500 • 54/500 • 11/500 • 410/500

Po-575

Front of the Auditorium poster area

SYSTEMATIC ASSESSMENT OF THE "SCHOOL ALERT" EMERGENCY SANITARY PROGRAM.

Manuel Bernardez Otero (1), Maria Caamaño Martinez (1), Antonio Casal Sanchez (2), Carlos Miras Bello (3), Emilia Perez Meiriño (3), Corsina Prado Pico (1)

1. emergency department, public foundation of emergency health services of galicia 061, santiago, Spain
2. emergencies, public emergency healthcare system of galicia, santiago, Spain
3. emergency department, public foundation of emergency health services of galicia 061, santiago, Sri Lanka (ex-Ceilan)

Corresponding author: luis.sanchez.santos@sergas.es

Keywords: critically-ill children, bystanders, precocious activation of the ems

INTRODUCTION AND OBJECTIVES

The "school alert" program was developed to anticipate the treatment of emergencies in children, related with chronic illnesses diagnosed previously. It includes administrative actions (registration in the database of the Coordination Emergencies Center -CEC- of the Emergency Medical System-EMS-), training actions addressed to the teachers in charge of those children (including how to recognize a critically ill children, how to activate effectively the emergency system, and how to preserve and identify

adequately the medication needed), and legal actions (once the 061 is activated, the doctors of the CEC make themselves responsible of the treatment).

The program is under the umbrella of a written agreement between the regional responsible of health and his homonymous of education, which included children schooled from 3 to 17 years-age (since 2007), and since 2009, also to the children aged from 0 to 3 years, and schooled in kindergartens.

The illnesses included in the program are: epilepsy and unspecified convulsions, severe allergy in relation with potential anaphylactic shock, diabetes mellitus and severe hypoglycaemia, and loss of consciousness.

The aim of the present study was to evaluate the results obtained with the Program "School Alert" including its effectiveness both to detect children with the illnesses included in the program, as well as to distribute adequately the sanitary resources to provide the treatment to the emergencies related.

METHODS

A retrospective analysis since the beginning of the Program, including the total of patients classified by pathology, the number of emergency calls received regard with the Program, and the resource required to solve the situation, was performed. The possible solutions were: solve by phone (with or without direct intervention of the teachers), mobilization of sanitary resources (including healthcare team and ambulance) and solved in situ, and admission to an Urgency Room (UR) of a Hospital Centre.

RESULTS

Between January of 2007 and December of 2012, 1874 patients were included in the Program. 861 (46,02%) in relation with severe allergy, 390 (20,84%) epilepsy or unespecified convulsions, 274 (14,64%) diabetes mellitus (hypoglycaemia), and the rest (346, 18,49%) included different illnesses with the common risk to present a loss of consciousness.

In the 6-year period in the CEC were received 398 emergency calls related to those children, in 281 cases (70,60%) the call was solved by phone in situ. In the other 117 cases (29,40%), in 40 a direct clinical assistance was needed including ambulance and solved by treatment in situ, and in the last 77 patients (19,35%), the child was admitted to the UR of a Hospital Centre.

DISCUSSION

The first (bystanders) link of the care chain, is the weakest. To strengthen it, it's essential to provide to bystanders both the ability to recognize precociously the emergency, as well as the ability to activate effectively the emergency system, and finally once is activated, the ability to provide the adequate treatment guided by the doctors of the CEC. To facilitate the whole process, the assumption of legal responsibility by the doctors of the EMS is essential.

The program was effective to detect and include children with the illnesses related (1874). In addition, if we consider that up to 70,4% of the emergencies were solved in situ, and the real emergencies (19,35%) were identified and stabilised in situ before admitting them to the UR of a Hospital Centre, we conclude that it was also effective to distribute adequately the sanitary resources.

Po-576

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NITRITES INTOXICATIONS IN SMALL CHILDREN DUE TO WATER SUPPLY SYSTEM DEFICIENCIES IN NORTH-EASTERN ROMANIA

Carmen Olaru (1), Nicoleta Gimiga (2), Claudia Adriana Olaru (2), Elena Tataranu (2), VV Lupu (2), Smaranda Diaconescu (2)

1. Emergency department, St.Mary Children Emergency Hospital, Jassy, Romania

2. Pediatrics department, St.Mary Children Emergency Hospital, Jassy, Romania

Corresponding author: turti23@yahoo.com

Keywords: Nitrites, methemoglobinemia, children

Aims: The study wants to highlight some aspects of the nitrites intoxications in small children admitted into the ER of „St. Mary” Childrens’ Emergency Hospital of Jassy, Romania

Method: During a 5 year period (2008-2012) we monitored all cases of the nitrites intoxication; age, sex, rural/urban provenience, seasonally incidence, severity of poisoning, clinical and biological response to the administration of antidote were studied.

Results: 128 children were admitted for accidental nitrites intoxication during a 5 years period. In the same period the total number of intoxications in our unit was 2493, showing an incidence of 5,13% . Age distribution : 0-1 month: 22 cases (17,18%), 1-6 months: 74 cases(57,81%), 6 months-1 year: 14 cases (10,93%), >1 year: 18 cases(14,06%). Sex distribution: boys 72 cases (56,25%) and girls 56 cases(43,75%). The study of the environment of origin showed urban provenience in 9 cases (7,03%) and rural provenience in 119 cases(92,97%). The frequency according to seasons: spring 30 cases (23,43%), summer 34 cases (26,56%), autumn 28 cases (21,87%), winter 36 cases (28,12%). According to methemoglobin blood levels the intoxications were mild in 20 cases(15,62%), medium in 70 cases (54,68%) and severe in 38 children (29,68%) .The ABCDE principles were followed in every patient. The neurological status showed 2 patients unconscious with cardiopulmonary arrest, 1 patient with seizures, sleepiness in 2 patients while 3 of them had

psychomotor agitation; the rest of the patients were in a good condition. The oxygen saturation was >94% in 77 patients (60,15%), 89-94% in 33 patients (25,78%) and less than 89% in 18 children (14,06%). We found mild and medium dehydration in 24 cases (18,75%) caused by diarrhea. The 2 patients with cardiopulmonary arrest were having severe alkalosis. 125 children were treated with intravenous methylene blue, 1mg/kg from 1% solution and 3 of them with intravenous vitamin C, 30 mg/kg. Methemoglobin dosage was made 30 minutes after administration of the antidote and reached normal values in 126 children. There were two cases of death from cardiorespiratory stop in children aged less than 1 month.

Conclusions: Nitrites intoxication were predominant in children aged 1-6 months (57,81%), most of them (92,97%) coming from rural areas. The majority of the reported cases has been ascribed to the use of contaminated well water for preparation of infant formula. Unfortunately, water supply situation in Romania shows that, out of 22.4 million population, only 14.7 million people receive water from the network, representing 65.6% of the population.

Po-577

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PEDIATRIC MYOCARDITIS DIAGNOSIS: WHAT CLINICAL ARGUMENTS ARE AVAILABLE TO PRE-HOSPITAL AND HOSPITAL MEDICAL TEAMS?

Jean-Christophe Perrochon (1), Noella Lode (2), Olga Maurin (1), Jean-Louis Chabernaud (3), Azzéline Ayachi (4), Daniel Jost (1), Olivier Bon (1), Laurent Domanski (1), Jean-Perre Tourtier (1).

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France

2. Critical Care, Hôpital Robert Debré, Paris, France.

3. Emergency Department, Hôpital Antoine Bécélère, Clamart, France.

4. Emergency Department, Hôpital Avicenne, Bobigny, France.

Corresponding author: olgamaurin@free.fr

Keywords: myocarditis, pediatric emergency, Extra-corporeal membrane oxygenation

Introduction: The diagnosis of myocarditis in children remains difficult since the presentation is non-specific. Diagnostic delay may be fatal, although the disease is treatable. The aim of this study was to identify the signs suggesting myocarditis in pre-hospital emergency settings in order to orient the children toward an appropriate department equipped, in particular, with extracorporeal-membrane oxygenation (ECMO).

Materials and methods: Retrospective, observational study. Inclusion criteria: children initially managed by the Parisian pediatric emergency department (SMUR) for suspected myocarditis and for which the diagnosis was confirmed in a hospital setting. The data collected were the pre-hospital signs and symptoms, and the results of other investigations in hospital.

Results: From February 2006 to December 2011, 20 children were included. The median age was 4.5 years (range: 5 days-12 years).

The symptoms most frequently identified initially were hepatomegaly (60%), nausea/vomiting (55%), lethargy (55%), fever (45%), tachypnea (45%), dyspnea (35%) and hypotension (35%). Chest X-ray showed cardiomegaly on (75%). Cardiomegaly was found in 1 case out of 4 cases of fulminant myocarditis. The electrocardiogram was suggestive in 17 cases (85%): ventricular tachycardia (n = 7/20), sinus tachycardia (n = 3/20), ST-segment elevation simulating myocardial infarction (n = 3/20), atrioventricular block (n = 2/20), QT interval lengthening (n = 1/20),

microvoltage (n = 1/20). Echocardiography showed low left ventricular ejection fraction in 15 cases (75%). In all, 11 (55%) children died and 7 (35%) survived without sequelae. The signs most frequently associated with death were: hepatomegaly and cardiomegaly.

Discussion: These results confirm the data reported in the international literature. Emergency diagnosis of myocarditis is to be considered rapidly in the event of an identifiable series of arguments and is to result in patient transport to an appropriate department for confirmation of the diagnosis and specific management in order to reduce the mortality, which is currently catastrophic.

Po-578

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INFANTS UP TO 3 MONTHS AT THE EMERGENCY DEPARTMENT: TO BE AFRAID... OR NOT

Inge Roggen (1), Dominique Bulckaert (1), Gerlant Van Berlaer (1), Ives Hubloue (1)

1. Research Group on Emergency and Disaster Medicine, Vrije Universiteit Brussel, Brussel, Belgium

Corresponding author: inge.roggen@uzbrussel.be

Keywords: infants, emergency, life-threatening

Background

When children below the age of 3 months present to the emergency department (ED), physicians tend to handle with extreme care, afraid to miss life threatening pathologies in this particularly vulnerable age group.

Aim

To chart the different pathologies and their seriousness.

Patients and methods

With a retrospective cohort study, we analyzed all medical files of all infants aged 0 to 90 days, admitted to our ED between 1/1/2003 and 31/12/2011. All files were coded with respect to the International Statistical Classification of Diseases (ICD-9).

Results

In this 9 year period, 6636 infants (3116 boys) aged 0 to 90 days presented to our ED, admission rate (AR) was 38% (n=2526), admission rate to the intensive care unit (ICU) was 2.6% (n=175). All data are presented as percentage of children admitted to the hospital, and the percentage of admitted children who ended up at the ICU.

Infectious diseases were responsible for 54% (n=3549; AR=47%; ICU=3%) of all ED visits. In this group, 65% had a benign viral infection (AR=27%; ICU=0.4%); 12% presented with fever of unknown origin, of which only 10% turned out to have an invasive infection (AR=89%; ICU=1%); 7% had an invasive infection (AR=77%; ICU=21%) and 16% had bronchiolitis (AR=66%; ICU=6%). One in three infants with bronchiolitis had an increased oxygen demand.

Surgical problems were the culprit in 3% (n=193; AR=35%; ICU=2%). Only 5 out of 83 inguinal hernias were incarcerated. All ICU admissions (n=4) were for intestinal malrotation.

More severe (non-infectious) conditions were responsible for 7% of ED presentations (n=485; AR=68%; ICU=12%). Apparent life threatening events were reported in 52% (AR=78%; ICU=9%), head trauma in 20% (of which 96% was mild head trauma; AR=49%; ICU=33%), inhaled foreign body in 9% (AR=45%; ICU=0%) and seizures in 8% (AR=66%; ICU=19%).

In 36%, caregivers reported to the ED for benign conditions (n=2359; AR=20%). In 66% (AR=23%) they expressed anxiety or had questions on physiological phenomena (regurgitation, overfeeding, infant colic, crying and stool pattern and frequency), 14% (AR=11%) even had a completely normal history and clinical examination, almost all (92%) hospital admissions in this group were due to parental fatigue. None of these infants were admitted to the ICU.

Fifteen infants (0.2%) were intubated: 6 had bronchiolitis, 4 sepsis and 5 in the context of sudden infant death syndrome (SIDS). Only 10 (0.1%) infants deceased: 4 SIDS, 3 with an inborn error of metabolism, 1 bronchiolitis, 1 late onset sepsis and 1 battered child.

The majority of ICU admissions were due to invasive infections (35%), bronchiolitis (21%), apparent life threatening events (10%) and head trauma (9%).

Conclusions

The majority of infants aged 0 to 90 days, presenting to the ED have rather benign conditions: 36% visited for physiological phenomena and 50% with non-invasive infectious diseases. Although a large proportion of these infants were admitted to the hospital, ICU admissions are low. Only a small range of conditions are associated with ICU admissions and mortality rate is extremely low.

Po-579

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CHANGES OF CHILDHOOD INJURIES WITH RESPECT TO THE DEVELOPMENT OF THE NERVOUS SYSTEM

Zsolt Bogнар (1), Viktoria Abonyi (1), Veronika Csuzdi (1), Alicia Gemmel (1), Xenia Majoros (1), Gabriella Racz (1), Katalin Wagner (1), Katalin Kollár (2)

1. Pediatric Emergency Department, Heim Pal Children's Hospital, Budapest, Hungary

2. Neurology Department, Heim Pal Children's Hospital, Budapest, Hungary

Corresponding author: bognarzs@heimpalkorhaz.hu

Keywords: age-related injuries, neurological development, pediatric trauma

Aim: comparison of characteristics of injuries (area of body, type) in childhood in different age groups.

Methods: 4092 children were referred to primary surgical examination at the Emergency Department of Heim Pal Children's Hospital between 01 Jan 2012 and 30 April 2012, aged from 4 months to 18 years. 1030 patients with complaints based on trauma were given a triage questionnaire. We recorded the gender, age of the patients

and the type and area of injury. The age groups were set up based according to the norm in Hungary and in the international literature. 0 – 1 year: group I., 1 – 3 years: group II., 3 – 6 years: group III., 6 – 10 years: group IV., 10 – 14 years: group V., 14 – 18 years: group VI. The data were analysed with Microsoft® Office Excel 2003.

Results: Distribution of 1030 patients: 578 boys, 452 girls. The youngest was 16 weeks old, the oldest 18 years old, the average age was 8 years and 4 months. The total number of injuries in the different groups permanently increased up to group V., and fell sharply in group VI. (from 29,9 % to 15,92 %) Most of the cases were head injuries (HI) in group I., II. and III. (73,33 %, 52,74 % and 50 %). From group II. the rate of injuries on upper extremity (UE) increased, in group IV. approaching the rate of HI. (HI: 38,25 %, UE: 30,41 %), the highest rates were in group V. (44,48 %) and VI. (42,07 %). The rate of fractures was low up to group III. (less than 6 %), increased in group IV. and V., and decreased again in group VI. The rate of wound permanently increased in group I., II. and III., later decreased, and in group VI approached the value of group I.

Conclusion: There is a correlation between the area, number and type of injuries in different age groups and the neurological, mental and social development of patients. In the earlier years most injuries were on the relatively big head, while with growth the upper extremity claimed "first place". The number of injuries raised in the older ages due to the increased physical activity, but reduced after adolescence. The low rate of fractures in the younger age groups is the result of the elastic skeletal tissues and moderate physical activity.

The changes in the number of wounds were due to the development of fine motor movements.

Mental and socialization factors also play a role in the change of fracture rates in the teenager period.

According to the authors, the decrease in the number of injuries after adolescence can be explained not only by the development of movement coordination, but by the changing of teenagers' way of life and interests also.

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Front of the Auditorium poster area

LEFT WITHOUT BEING SEEN: LESSONS FROM A PAEDIATRIC EMERGENCY DEPARTMENT

Kennedy Caroline (1), Hale Amy (2), Stewart Charles (3)

1. Paediatrics, Ealing Hospital, London, United Kingdom

2. Paediatrics, Northwick Park Hospital, London, United Kingdom

3. Paediatric A&E, Chelsea and Westminster NHS Foundation Trust, London, United Kingdom

Corresponding author: carolinekennedy@nhs.net

Keywords: Quality, Safety, Paediatrics

Introduction: Quality improvement in Emergency Departments (EDs) is a high priority worldwide. In adult studies, keeping numbers who have left without being seen

(LWBS) to <5% is associated with a good overall standard of care. Therefore it is vital to ascertain factors that influence why patients LWBS. No such studies exist in children, a group who are often unable to advocate for themselves as they are 'taken' home rather than making their own decision to leave. Clinical quality indicators (CQIs) are a group of UK derived ED quality control measures, of which LWBS <5% is one. Currently our department is meeting this target. Within this subgroup our study looks at local factors influencing LWBS rates relative to CQIs, seeking to improve upon this standard in the paediatric population.

Method: An electronic database search was performed for all patients who had 'left without being seen' as their root discharge diagnosis throughout October 2012. A telephone questionnaire derived from the CQIs was designed and put to this subgroup. Parents who were un-contactable after 4 attempts were excluded. The hospital ethics board granted approval.

Results: 44 patients met the inclusion criteria, 13 could not be contacted and were excluded (n=31). The unplanned re-attendance rate was low with 1 patient being referred back to the department and none admitted. 47% of parents did not see another healthcare professional; of the 53% who did the majority saw their general practitioner. 64% of parents stated long waiting times in their reasons for LWBS. Other reasons given included; condition of child improved, parents reassured by triage, parents did not want child to pick up other infections and other children in department appeared more unwell. 10% of LWBS identified concerns over proximity with other unwell children. Despite having LWBS, 70% of parents rated their overall experience as either positive or neutral. Among negative factors that may have contributed to LWBS, parents cited 'busy' department, staff attitudes, an unsatisfactory waiting room and lack of information; 66% of parents reported that they were not made aware of the possibility of a long waiting time. Positive local factors identified were staff characteristics, provision of information and reassurance. Of the people who LWBS 38% presented between 18:01-22:00 and 33% between 22:01-07:59. Time to triage: average 26mins, parent's perceived time to triage 27mins (CQI target <20mins). Time to LWBS: average 138mins, perceived time 117mins. (CQI target for time to medical evaluation <60mins)

Discussion: With only 1 unplanned re-presentation and no admissions amongst those studied, we have demonstrated a favourably low risk profile comparable to that of adult patients. A large proportion sought no further medical attention and of those who did, all but one were effectively managed outside the emergency setting. This suggests these patients had conditions of low acuity and severity, in agreement with adult studies.

It is however still desirable to reduce numbers of LWBS to ensure patient safety. During busy periods our average time to first assessment (28mins) failed to meet the CQI target of <20mins. The average time to LWBS was 138mins, which is significantly longer than the CQI for first medical evaluation (<60mins). Therefore it is not surprising that the majority (64%) cited long waiting times as the reason for LWBS. While efficiency can be scrutinised, resources will always be stretched in surges of patient activity. Increased consultant

presence is one way to enable decisions to be made quicker, to this end our department is increasing consultant numbers.

During busy and stressful periods an unwell child is more likely to be taken home without being seen. Staff training must therefore include dealing with communication issues and maintaining professionalism during busy periods. The results highlight that an inappropriate, small and busy physical environment will lead to dissatisfaction and patients leaving without being seen. As a result, our department's planned reconfiguration will include an improved design with increased floor space.

Conclusion: We have shown a favourable safety profile amongst paediatric patients, which has not been demonstrated previously, if numbers who LWBS are kept to <5%. However it remains imperative to keep these numbers to a minimum and knowledge of the factors involved will enable departments to achieve this.

Po-581

Front of the Auditorium poster area

THE EPIDEMIOLOGY OF SUICIDE ATTEMPTED OR SELF-INJURED ADOLESCENT PATIENTS IN SOUTH KOREA FOR 2007–2011 FROM NATIONAL EMERGENCY CENTER DATA

Young Ho Gwak (1), Jin Hee Jung (2), So Young Park (3)

1. Emergency department, Seoul National University hospital, Seoul, Korea, (South) Republic of
2. Emergency department, Boramae hospital, Seoul, Korea, (South) Republic of
3. Emergency department, Seoul national university hospital, Seoul, Korea, (South) Republic of

Corresponding author: ttyd00@gmail.com

Keywords: self-injured, adolescent, emergency department

Introduction: Suicidal attempt in adolescent patients is increasing. We investigated epidemiology of suicidal attempt or self-injured adolescent patients.

Methods: We retrospectively collected and analyzed demographic and clinical data from January 2007 to December 2011 for 117–139 emergency centers registered in the National Emergency Data Information System (NEDIS). Data included age, sex, province (16 metropolitan areas and provinces), injury intent and mechanism, results of emergency care, hospital discharge, hospital admission and mortality rate.

Results: In study period, 7797 self-injured adolescent patients ages 10 to 19 visited emergency department. Mean age is 16.4 years old. Male to female ratio was 41.9 to 58.1. Compared to other season, less patients visited in winter. More self-injured patients visited ED night time(18h~6h) than day time(6h~18h).

Sixty seven percent of self-injured adolescent patients discharged to home and 25.2% of patients admitted to hospital. Intoxication was most common mechanism of self-

injury(46.8%), penetrating injury was followed(21.2%). One hundred forty eight suicidal attempted adolescent patients visited ED dead or died in ED. Mean age was 16.3 years old. Among self-injured male patients, 71(2.2%) died, 77(1.7%) of female patients were dead. Fall is most common mechanism of death followed by asphyxia and hanging, and mortality rate of asphyxia and hanging was highest of all mechanism of injury.

Incidence of self-injury was highest in xxx province, 000 per 100,000 person, followed by ..., 000 per 100,000 person, and incidence was lowest in xxx province, 000 per 100,000 person.

Conclusion: this is first epidemiologic study of self-injured adolescent patients using ED based national data.

Po-582

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CHILDREN WITH PETECHIAE AND FEVER: WHEN IS IT SAVE TO SEND THEM HOME?

Katja Wüstefeld (1), Jos Draaisma (2)

1. Emergency Department, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands
2. Paediatric Department, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

Corresponding author: katjawustefeld@yahoo.com

Keywords: Petechiae, Fever, Children

Introduction:

Petechiae in combination with fever are alarming symptoms. It is assumed to be meningococemia or bacterial sepsis, until proven otherwise. In general 0.5-11% of the children presenting with fever and petechial rash have meningococcal infection.1-3

A child with petechiae confined to distribution of the superior vena cava (SVC), or above the nipple line, is unlikely to have meningococcal disease.1,3-6 The incidence for this particular distribution of petechiae in children with fever, varies from 22.5% - 39.7%. The most common explanations for this rash are raised venous and capillary pressure resulting from coughing, vomiting, crying, convulsion or trauma.1,3,5,6

Case Description:

A five-year-old boy presented at the emergency department with a one-day history of fever and a general feeling of being unwell. He had vomited three times and complained of a sore throat. His mother had noted a few small spots in his face, which was the reason of the referral by the general practitioner.

Physical examination revealed an alert boy with a fever of 38.4°Celsius, enlarged, inflamed tonsils and multiple small tender lymph nodes in his neck. In addition he had multiple small petechiae around both eyes, in the face and neck. On assessment, and reassessment after 2 hours, there were no signs of severe illness (prolonged capillary refill, hypotension, purpura, irritability, nuchal rigidity or lethargy) or progression of the petechiae.

The boy was discharged with antibiotic treatment for his tonsillitis and with instruction for his mother. The patient recovered uneventfully.

Discussion:

Not all children with fever and petechiae have invasive bacteremia of meningitis. A non progressive rash above the nipple line is unlikely to be caused by meningococcal disease. Not every child needs a complete work up with admission, antibiotics and lumbar puncture.

There are a few pitfalls however: vomiting can be a warning sign for meningitis; petechiae can be difficult to detect on dark skin and progress without being noticed; convulsion can cause localized petechiae but in combination with fever is an ominous sign. National and regional guidelines on children and fever/ petechiae should be acknowledged. Rigards⁷ proposed the following algorithm for children with fever and petechiae and is doing research for validation.

Conclusion:

Children with petechiae above the nipple line without any signs of severe illness, are unlikely to have meningococcal disease. If there is a good explanation for the fever, the petechiae, and no progression of illness on reassessment, they can be discharged with clear instructions.

Po-583

Front of the Auditorium poster area

FOREIGN BODY INGESTION AND ASPIRATION, COMPARISON BETWEEN CHILDREN AND ADULTS.

Liliane Lai (1), Ying Chieh Huang (1), Chi-i Chen (2)

1. Department of Emergency Medicine, Chiayi Christian Hospital, Chiayi city, Taiwan

2. Division of Gastroenterology, Department of Medicine, Chiayi Christian Hospital, Chiayi city, Taiwan

Corresponding author: Galaxy.bear@msa.hinet.net

Keywords: foreign bodies, ingestion, aspiration

Introduction: Foreign bodies (FB) ingestion is a common emergency. Although most of them have benign courses, some can be a serious occurrence. FB aspiration is uncommon; however, it is a serious problem that brings morbidities and even mortality if it is not removed in time. Ingestion of non-food materials are more common in toddlers, mis-swallowing or choking play a major role in children and adults. Deliberate ingestion, though rare, can be encountered in smugglers and patients with some mental illnesses.

Objective: To understand our epidemiology of FB ingestion and the difference between adults and children.

Methods: This is a retrospective, observational study. We retrieved the patient who visited our emergency department (ED) for FB ingestion or aspiration in 2012. Only the ones with reliable history or objective findings about FB were included. We retrieved their demographics, presenting date and time, mechanisms, presenting symptoms, characters of FB, image studies, treatments, disposition, and outcomes. Comparisons between child and

adult patients were undertaken with Chi-square tests and Monte Carlo estimation for exact tests. A p value < 0.05 was defined as statistically significant in difference.

Results: There were 640 patients enrolled with male/female (M/F) ratio of 316/324. The age ranged from 1 to 101 years old (median: 45; IQR: 23~59). Unproportionate high percentage (40.2%) of cases visited the ED in weekends. Up to 3/5(59.4%) of cases visited in the evening shifts. Most of FB were located in the pharynx and larynx. There were 185(28.9%) in esophagus, 12(1.9%) in stomach, 7(1.1%) in lower airway(6 children and 1 adult), and 5(0.8%) in small intestine. There were 137(20.9%) children and 503(79.1%) adults. Although there were more boys than girls (M/F ratio: 70/67) but less men than women (M/F ratio: 246/257), the difference was not significant (p = 0.700). The median age of children was 8 years old (IQR: 4~13) and the median age of adults was 52 years old (IQR: 39~62). Most of the patients visited the ED within 6 hours of ingestion (children: 90.5%, adults: 89.6%) and only a minority presented later than 24 hours (children: 4.4%, adults: 4.8%). Dysphagia (children: 50.4%, adults: 57.5%; p=0.146) and pain (children: 36.5%, adults: 39.5%; p=0.554) were the most common symptoms. Children had more cough (children: 5.1%, adults: 0.6%; p=0.001) and wheezing (children: 1.5%, adults: 0.0%; p=0.046) than adults on presentation, though the percentages were low. Although choking was the major mechanism of ingestion (children:75.2%, adults: 92.0%), children had significantly higher percentage of mis-swallowing than adults (children: 22.6%, adults: 5.8%; p<0.001). Fishbone are the major FB in our cohort (children: 65.0%, adults: 85.1%), children ingested more non-food materials, food chips, coins but adults ingested more chicken bones and teeth (P<0.001). About half of patients received traditional X-ray for diagnosis(children: 50.4%, adults: 48.1%; p=0.700), and a small percentage of patients received computed tomography(CT)(children: 2.9%, adults: 2.6%; p=0.769). Treatments for FB were different between the children and adults (p<0.001). Most of FB were removed under direct vision (children: 34.3%, adults: 49.1%) or could not be found by examinations (children: 44.5%, adults: 37.4%), a small but definitive percentage of patients needed endoscopic removal (children: 6.6%, adults: 10.7%; p=0.146). There were more spontaneous passes of FB in children (children: 13.1%, adults: 1.6%). Although most of the cases were discharged after ED treatments, children had a greater likelihood of hospitalization (children: 3.6%, adults: 0.4%; p=0.004).

Conclusion: Our cohort had higher incidence of FB ingestions in weekends and were associated with the dinner, and to a less degree, the lunch. Although most patients could be treated in the ED without complication, a small but definitive percentage of patients needed CT and endoscopic removal. In comparison with adults, children had higher percentage of mis-swallowing, ingestion of non-food materials, and hospitalization. Although the percentage of aspiration was low, it was often serious, needed CT for diagnosis, endoscopic removal, hospitalization and it happened more frequently in children. To reduce FB ingestion or aspiration in children, increased public awareness and prevention are

fundamental. On the other hand, look before eat and good table manner are helpful for adults.

Po-584

Front of the Auditorium poster area

WHERE'S THE SAUSAGE? THE LACK OF "CLASSIC" PHYSICAL EXAM FINDINGS IN INTUSSUSCEPTION PATIENTS.

Frederick Fiessler (1), Oliver Hung (1), Renee Riggs (2), Dave Salo (3), Diane Calello (1)

1. Emergency department, Morristown Medical Center, Morristown, United States
2. Emergency department, RWJMS- UMDNJ, New Brunswick, United States
3. Emergency department, Morristown Medical Center, morristown, United States

Corresponding author: ffiessler@yahoo.com

Keywords: abdominal pain, intussusception, physical exam

Background: Intussusceptions has been described as having a triad of symptoms: abdominal pain, vomiting, and bloody stool. The stool is often described as "currant jelly" and another commonly described examination finding is a palpable mass or sausage. Objective: To determine if those patients who are diagnosed with intussusceptions, have the "classic" findings of a palpable mass or currant jelly stool. Methods: Design: A multi-center retrospective cohort study. Participants: Consecutive patients with the final ICD9 diagnosis on intussusception from Apr. 1999 to Nov. 2010. All charts were manually reviewed for specific predetermined data points. Patients were excluded for analysis, if charts were unavailable or if the final diagnosis was not intussusception. Statistics: 95% confidence intervals were calculated where appropriate and Chi-square was utilized with a significant P-value being < 0.05. Results: 8,340,594 patient visits occurred during the study period. A total of 418 (.005%) patients were diagnosed with intussusception. 285 charts were available for analysis. The Median age was 5.5 yrs (IQR 1.7 to 36.3). Two-hundred patients (77%) were admitted, 25 (9%) were transferred and 40 (14%) were ultimately discharged. Female gender comprised 42% (N=120). Fifty-one percent (N=144) reported normal stool consistency, 23% (N=66) described diarrhea, 8% (N=24) reported constipation, and 18% (N=51) did not document a stool exam. Stool was described as bloody in 16% (N= 46) of patients, 0.7% (N=2) (95%CI 0-1.8%) of which mentioned "currant jelly". Of the 43 patients who had stools tested for guaiac, 50% (n=22) (95% CI 33.3-64.5) were guaiac positive. A history of "bloody" stool did not increase the chance of being guaiac positive (N=13/22) (p=0.77). A palpable mass/sausage was reported in 2.8% (95% CI 1.2-5.5%) (N=8) of patients and there was no difference in age between those who had a mass versus those who did not, 12.4 versus 5.5 yrs respectively (p= 0.74) Conclusion: The classic findings of currant jelly stool and palpable mass are rarely seen in intussusception.

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ULTRASOUND IN EMERGENCY DEPARTMENT OFTEN LEADS TO INTERESTING DIAGNOSIS

Ljubo Crujovic (1), Deeplina Nath (1)

1. Emergency Medicine, Wexham Park Hospital, slough, United Kingdom

Corresponding author: deeplinan_72@hotmail.com

Keywords: Patient, young children attended accident and emergency department not resolve the symptoms with antibiotics, re attendance with same symptoms, will be beneficial with ultrasound scan if available in the department., On second visit Ultrasound scan done and a lump found in the upper pole of right kidney, Catecholamines raised in blood test. Further MRI scan done shows pheochromocytoma. Referred to paediatrics.

Objective:

A 11 years old patient attended ED abdominal pain, central abdominal, pain worse overnight, Felt sick and No vomiting, O/E HR 107, RR20, apyrexial, Abdoman tender centrally.

Test in ED: Urine dip Blood 3+, Leucocyte +, Nitrate +ve. Patient discharged home with antibiotics.

After 2 months patient re-attended ED with pain abdomen, Parents thought eaten something wrong as they travelled outside the country.

O/E Apyrexial, HR 98/min, Pain score ¼. Abdoman soft , not tender.

Tests in ED: Urine Blood+, Protein+, FAST Scan found a mass on the upper pole of right kidney of 5.56/ 3.86 cm. Patient was referred to Paediatrics.

He had further tests ,Urine catecholamine and MRI scan done.

Urinary catecholamine raised grossly

MRI : Pheochromocytome right side

He was under Super speciality and on conservative management (Propranolol 40mg and Phenoxybenzamine 10mg BD) and planned surgery in two months.

Following a month patient re-attended ED with pain abdomen, fever.

O/e temp: 38.4, HR 100/min, BP 134/68. Urine NAD.

Patient had Paracetamol and Ibuprofen and temp settled.

Patient has been operated and on follow up.

Discussion:

Children usually present because of symptomatic catecholamine hypersecretion or, less often, due to tumor mass effects as an incidental radiographic finding, or because of family screening for the hereditary syndromes . Signs and symptoms of a sympathetic chromaffin tumor include hypertension, typically sustained in the majority of pediatric cases; paroxysmal episodes (headaches, palpitations, and diaphoresis); pallor; orthostatic hypotension and syncope; tremor; and anxiety .Symptoms can also be nonspecific and include blurred vision; abdominal pain, diarrhea, and other gastrointestinal symptoms; weight loss; hyperglycemia; polyuria and

polydipsia; low-grade fever, Hematuria and paroxysmal symptoms during micturition in Pheochromocytoma.

Complications of catecholamine excess can include hypertensive crisis, cardiomyopathy, pancreatitis, stroke, seizures, and even multiorgan failure and death.

Conclusion:

Although Pheochromocytomas are very rarely diagnosed during childhood, it is imperative for the pediatric clinicians to be able to recognize and screen for such tumors, particularly in the context of known familial disease. Advances in medicine have expanded our knowledge regarding the etiology, diagnosis, treatment, and long-term follow-up of these tumors. Emergency Clinicians can also perform a Scan in cases with some symptoms and signs.

Scan Pictures: Attached

Disclosure : Imaging by Dr L Crujovic Associalist Specialist ,Wexham Park ED

Scan Pictures: Attached

Disclosure : Imaging by Dr L Crujovic Associalist Specialist ,Wexham Park ED

The pictures (scan) could not be attached. Can I e mail the whole poster presentation separately?

MRI Scan Picture

Po-586

Front of the Auditorium poster area

'TORSION TO TABLE IN THIRTY': A RECOMMENDATION FOR CHILDREN PRESENTING TO THE EMERGENCY DEPARTMENT WITH ACUTE TESTICULAR PAIN.

Lillian Cooper (1), Kathryn Ford (2), Sam Thenabadu (3)

1. Plastic Surgery, Royal London Hospital, London, United Kingdom
2. General Surgery, Princess Royal University Hospital, London, United Kingdom
3. Emergency Department, Princess Royal University Hospital, London, United Kingdom

Corresponding author: kathryneford@gmail.com

Keywords: paediatric, testicular, torsion

Introduction

Acute scrotal pain in a child is a urological emergency. It usually presents to and is first assessed in an emergency department (ED). The most important differential diagnosis to identify or exclude is testicular torsion, which, if missed or surgically explored late, will result in irreversible testicular infarction. The role of ultrasound scanning (USS) in diagnosing testicular torsion remains undefined in the literature. Furthermore, there are few local, and no national guidelines in the United Kingdom as to the emergency assessment and management of scrotal pain in children.

Method

Electronic records were reviewed retrospectively from 2011-2013 for all paediatric presentations to the ED at one District General Hospital with testicular pain. All children under the age of 18 and referrals/transfers from local hospitals were included. We recorded patients' time to review by an ED doctor, time to surgical referral and review, use of ultrasound, diagnosis made in the ED, whether the patient was admitted, and what further management they received.

Results

251 patients were identified, of which 204 had available electronic records. 47 had a clinic diagnosis of torsion made in the ED, of which 42 were admitted for exploratory surgery. Of these 42 patients, the average time to be seen by an ED doctor was 25.5 minutes (range: 2-145 minutes), and all patients with suspected torsion were referred and reviewed by a surgeon on average by 34.1 minutes (range: 0-120 minutes). Preliminary analysis of operation notes suggests that 10% of patients had findings of torsion on surgical exploration. 5% of patients with suspected torsion had an USS requested.

Of the 156 who did not have a clinical diagnosis of torsion, 32 (21%) were managed entirely by the ED doctor and 124 (79%) were referred to the surgical on call team. 31% had an USS, most commonly (78%) requested by the urology doctor. None of these USS revealed a diagnosis of torsion. The most common diagnosis amongst this group was epididymitis and conservative management.

Conclusion

Testicular torsion is rare in children presenting with testicular pain. USS does not aid diagnosis, and may delay time to theatre. It may have a diagnostic role in those who do not have a clinical suspicion of torsion.

We recommend a time from being seen by a clinician who is able to make a clinical diagnosis of torsion in a child presenting with acute testicular pain, of 30 minutes to the operating table. This emphasises the importance of early recognition, referral to surgical team and decision to take the child to theatre for emergency exploration. The ED doctor should aim to have seen the child within 10 minutes of presentation, and the surgeons in the hospital be educated they should make a decision about surgical intervention within the 30 minute window.

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PRELIMINARY RESULTS OF THE GLOBAL PEDIATRIC EMERGENCY POISONING SURVEILLANCE SYSTEM. A PEDIATRIC EMERGENCY RESEARCH NETWORKS STUDY

Santiago Mintegi (1), Beatriz Azkunaga (2), Javier Prego (3), Nadeem Qureshi (4), Nerea Salmon (2), Yordana Acedo (2), Javier Benito (1), Lorea Martinez

(5), Eunata Arana (5), Nathan Kuppermann (6) and the Pediatric Emergency Research Networks (PERN)

1. Pediatric Emergency Department, Cruces University Hospital. Research in European Paediatric Emergency Medicine (REPEM), Bilbao, Spain
2. Pediatric Emergency Department, Cruces University Hospital, Bilbao, Spain
3. Pediatric Emergency Department, Hospital Pediátrico-Centro Hospitalario Pereira Rossell, Montevideo, Uruguay
4. Paediatric Emergency Medicine, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia
5. Clinic Epidemiology Unit, Cruces University Hospital, Bilbao, Spain
6. Department of Emergency Medicine, University of California, Davis School of Medicine, Davis, CA, USA

Corresponding author: santiago.mintegi@osakidetza.net

Keywords: poisoning, pediatric, international

OBJECTIVES

The objectives were to study epidemiological concerns and to assess the management of acute pediatric poisonings admitted in Pediatric Emergency Departments (PEDs) from different regions of the world

METHODOLOGY

Design: international multicenter prospective study based on a registry including the patients treated by acute intoxication the 4th, 14th and 24th of each month in PEDs from 25 countries.

Data were included using a specific electronic questionnaire via Internet, including sociodemographic information, circumstances of the poisoning, prehospital and ED management and final disposition.

Preliminary general data and comparison between South America and European regions are presented.

RESULTS

We reviewed the first 381 episodes registered in 21 countries from South America (71; 18.6%), North America (3; 0.8%), Western Europe (40; 10.5%), Eastern Europe (75; 19.7%), Northern Europe (31; 8.1%), Southern Europe (158; 41.5%) and Middle East (3; 0.8%).

Pediatric poisoning accounted for 0.48% (CI 95% 0.43-0.53) of all emergency visits during the study period: Eastern Europe 1.75% (1.35-2.15), North America 1.20% (0.24-3.63), Middle East 0.72% (0.02-1.42), Western Europe 0.49% (0.34-0.64), Northern Europe 0.47% (0.3-0.64), South America 0.45% (0.35-0.55) and Southern Europe 0.35% (0.3-0.4). Highest rate of poisonings were registered in Hungary (54/1606 episodes, 3.36%, CI 95% 2.58-4.37) and lowest in Brazil (0/982 episodes, 0% CI 95% 0-0.47).

The main involved substances were drugs (48.5%), household products (17.8%), ethanol (11.2%), CO (4.2%), cosmetics (3.4%) and pesticides (2.8%). Household products and pesticides were more commonly involved in South America (25.4% and 10.1%) and ethanol in Europe (14.7%). 84% of the poisonings happened at home, and 13% of the episodes in Northern Europe occurred at a tavern.

Nearly 40% contacted with other Medical or Toxicologic Service before coming to the ED (more commonly in Eastern Europe), mainly with Emergency Services. Poison Control Centers were contacted in 6%. Globally, most of the

patients (60%) went to the ED using the family vehicle, except for Eastern Europe (medical ambulance).

Globally 58.8% received any treatment in the ED, more commonly in South America. Any gastrointestinal decontamination procedure was performed to 22.6% of the patients (28% in South America and 23% in Europe) and antidotes were more commonly administered in Europe (6.9% vs 1.4% in South America).

Around 70% was managed as outpatient and 3% were admitted to the ICU. No patient died.

CONCLUSIONS

There seems to be significant epidemiological differences related with acute pediatric poisonings among different regions and continents and also related with the Pre-Hospital and Emergency Departments' management. These facts should be taken into account when designing preventive and management improvement.

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FEBRILE INFANTS UP TO 3 MONTHS WITH PROVEN URINARY TRACT INFECTION DO NOT NEED LUMBAR PUNCTURE

Inge Roggen (1), Dominique Bulckaert (1), Gerlant Van Berlaer (1), Philippe Lepage (2), Yves Hubloue (1)

1. Research Group on Emergency and Disaster Medicine, Vrije Universiteit Brussel, Brussel, Belgium
2. Pediatrics department, Hôpital Universitaire des Enfants Reine Fabiola, Brussel, Belgium

Corresponding author: inge.roggen@uzbrussel.be

Keywords: infants, urinary tract infection, meningitis

Background

Guidelines for management of infants (0 to 90 days of age) with fever of unknown origin (FUO) suggest that lumbar puncture should always be performed, even if an urinary tract infection (UTI) has been identified as source of the fever.

Aim

To find out if any of the infants examined at our emergency department (ED) had a coexisting UTI and meningitis.

Patients and methods

With a retrospective cohort study, we analyzed all medical files of all febrile infants aged 0 to 90 days, presenting to the ED of a university teaching hospital between 1/1/2003 and 31/12/2011.

Results

In this 9 year period, out of 6636 infants aged 0 to 90 days, 409 presented with FUO of which 379 (163 boys) had a lumbar puncture (LP). Sixteen children immediately underwent sterile urine sampling, all other (n=363) children had initial urinalysis performed on urine obtained by bag samples, when results were judged as ambiguous, sterile urine sampling was performed. Overall, 82 children underwent urinary catheterization and 16 had a suprapubic tap.

All of the children who just had a bag sample, had a normal urinalysis. In those who had sterile urine sampling, 29/82 (35%) urinalysis obtained by catheterization and 7/16 (44%) of those obtained by suprapubic tap were positive, thus 36/379 (9%) had a confirmed UTI. In 33 out of 36 children the culprit was *Escherichia coli*, in 2 *Klebsiella pneumoniae* was found and one infant had a UTI with *Pseudomonas aeruginosa*.

None of the children had a positive lumbar puncture (less than 8 white blood cells per high power field) and none of aerobic or anaerobic cerebrospinal fluid cultures yielded positive.

Conclusions

In this 9 year period, 9% of the children with FUO who had a complete work-up, had a confirmed UTI. None of these children had a coexisting meningitis.

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NURSES SATISFACTION IN APPROACHING THE ADOLESCENT WITH ACUTE ALCOHOLISM IN EMERGENCY DEPARTMENT. A MULTICENTRIC STUDY

Camelia Caliniuc (1), Daniela Ionescu (2)

1. Emergency Department, Emergency Hospital ?Mavromati? Botosani, Botosani, Romania

2. ATI Department, ?Iuliu Ha?ieganu? University of Medicine and Pharmacy, Cluj-Napoca, Romania

Corresponding author: cameliacaliniuc@yahoo.com

Keywords: alcohol-intoxicated, nursing care, teenagers

Background. Alcoholism is a highly actual pathology with an increasing incidence in the last 10 years, both in UE and in Romania.

Statistically, most of the alcohol consumers around the world are in UE, where mean alcohol consumption in patients over 15 years is 12.8 l pure alcohol/person/year (out of which 2.67 l not registered consumption). In Romania, mean pure alcohol consumption per year is of 15.3 l alcohol/person (with 4 l alcohol not registered consumption). The Nord-East region appears in national statistics as having the highest proportion of the teenagers (14-18 years) consuming alcohol (40.08% in Moldova, as compared with 32.98% in Banat).

This is the main reason for developing the present study in 3 cities from Nord-East region of Romania. The goals of the study were to evaluate the attitude of emergency and ambulance department nurses in approaching teenagers patients with acute alcoholism and to identify the main reasons for dissatisfaction. We also intend to evaluate the aspect of psychological counseling of these patients and nurses opinion on this issue.

Patients and methods. This prospective, multicentric study was approved by the Ethics Committee of the coordinating hospital and used an original questionnaire with 21 items. 282 of questionnaires have been distributed to ambulance and emergency hospital department nurses from enrolled

hospitals: 77 questionnaires in Suceava, 94 in Piatra-Neamt, 111 in Botosani. The items were focused on the staff satisfaction in approaching these patients, on identifying the reasons for dissatisfaction and on investigating nurses' opinion in who has the major role in these patients' education, counseling and prophylaxis of alcoholism.

Results. When answering the question if the professional satisfaction in treating these patients is the same as when treating patients with other pathologies (item 8), 70% of nurses in Suceava answered the professional satisfaction was the same, while only 63% of nurses in Piatra-Neamt answered the same; in Botosani this percentage was 76%. The answer at question „what was the first thought coming to your mind when approaching these patients?”(item 6) 45.5% of nurses in Suceava answered they blamed the patient. 37% of nurses in Piatra-Neamt and 17% in Botosani recognized the same first thought despite equally treating with professionalism al patients.

78% from nurses included in the study were verbally aggressed by these patients and 34% were physically aggressed. Patients' agitation (in 39.9%) and vomiting (34.4%) were other important factors for discomfort in managing these patients (item 18).

Regarding the question on the need for psychological counseling (item 16), 76% from nurses in Suceava, 70% in Piatra-Neamt and 84% in Botosani considered this very important.

Interesting results were registered at item 5 regarding the perception on the subsequent outcome of these patients: 55% of nurses in Suceava declared that these patients are coming back in emergency department with the same problem many times; 35% in Piatra-Neamt and 51% in Botosani answered the same (p<0.05).

Only 30% of nurses in Suceava declared that patients who were treated with acute alcohol intoxication, received psychological counseling, 30% in Piatra-Neamt and 37% in Botosani.

At question “who has the major role in alcoholism prophylaxis” (item 20), 96% of nurses in Suceava indicated parents, respectively 79% in Piatra-Neamt and 94 % in Botosani.

Conclusions. Most of the nurses in emergency and ambulance departments were treating with professionalism the teenagers with acute alcoholism even if they are coming many times with the same pathology. Nu difference was registered when comparing the approach of these patients with other emergencies. However, a certain proportion of nurses tend to blame the patients as a first thought. Verbal and physical aggressions as well as agitation and vomiting are the main discomfort factors when managing these patients. The need for a better psychological counseling and the involvement of parents in prophylaxis of alcoholism are recognized by the vast majority of enrolled nurses.

Acknowledgment. The study was done in the framework of the scholarship for master studies for nurses funded by The Program for Human Resources Development – POSDRU 61577.

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EMERGENCY NURSING ACUTE RESPIRATORY FAILURE AT CHILDREN WITH BRONCHIOLITIS

Coca-Stela Crismaru (1), Adela Golea (2)

1. Emergency department, Mavromati County Hospital, Botoșani, Romania

2. Medicina de Urgenta Disciplina, ED - Universitatea Spitalul Județean de Urgență, Cluj-Napoca, Romania

Corresponding author: cocastela@yahoo.com

Keywords: child, breathing, oxygenation, hospitalization

Introduction

Acute respiratory failure at young children is manifested clinically by: dyspnea, wheezing, intercostal, subcostal retraction. Acute bronchiolitis is a common at infants and it occurs mainly in cold and wet season.

The proper assist and support of the respiratory function in the Emergency Pediatric Unit is important in monitoring the dynamics, in the favorable evolution or preventing the complications of bronchiolitis.

Material and method

Professional nursing interventions early applied by nurses include the following: respiratory monitoring, cardiac monitoring, temperature monitoring, peripheral venous, techniques for oxygen, respiratory physiotherapy techniques (non obstruction CRS, thin mucus), providing a calm atmosphere to the patient and a proper administration of medication.

The study was a retrospective component and comprised 258 patients presented in EPU in 2012 and the prospectus for the first two months of 2013.

Results

Retrospective analysis showed a deficit recording of the interventions emergency nursing observation in the charts of the patients. The prospective study conducted stresses the importance of accurate and immediate imbalances assist patients with bronchiolitis. Also there are not revealed records related to the difficulties or complications post-therapeutic monitoring. Nursing interventions applied to patients with bronchiolitis: respiratory monitoring study found that patients had to have had a respiratory rate EPU inlet 50 resp / min., Pulse oximetry saturation SpO₂ initiate pre show 85-90%, which under management of the oxygen mainly with facial mask elevates around 95% - 100%.

Conclusions

The findings lead to the need to improve nursing care applied by nurses, and especially of the deposit thereof.

Keywords: nursing, child, breathing, oxygenation, hospitalization

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4. Common Pediatric Respiratory Emergencies, Joseph Choi, MD;

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PACIFIERS TO REDUCE SIDS: A TEACHABLE MOMENT IN THE EMERGENCY DEPARTMENT.

Cynthia Garcia (1), Emnet Habebo (1), Nicole Lona (1), Rogelio Molina (1), Carolina Rodriguez (1), Greg Veazey (1), Teri Vieth (1), Paul Walsh (2)

1. Emergency Medicine, Kern Medical Center, Bakersfield, United States

2. Emergency Medicine, UC Davis, Sacramento, United States

Corresponding author: yousentwhohome@gmail.com

Keywords: Sudden infant death syndrome, pacifier, parental education

Objectives: To test the hypotheses that caregivers were less familiar with the role of pacifiers in sudden infant death (SIDS) prevention than other recommendations, that emergency department (ED) educational intervention would increase pacifier use in infants younger than six months, and that otitis media would not occur more frequently in pacifier users.

Methods: An intervention-group-only longitudinal study in a county hospital ED. We did not randomize as it would be unethical to provide some parents with SIDS prevention information while withholding it from others. We measured pacifier use infants and baseline knowledge of SIDS prevention recommendations in caregivers. We followed up three months later to determine pacifier use, and 12 months later to determine rates of otitis media.

Results: We analyzed data for 780 infants. Parents knew of advice against co-sleeping in 469/780 (60%), smoking in 660/776 (85%), and supine sleeping in 613/780 (79%). Only 268/777 (35%) knew the recommendation to offer a pacifier at bedtime. At enrollment 449/780 (58%) did not use a pacifier. Of 210/338 infants aged less than 6 months followed up 41/112 (37%) non-users had started using a pacifier at bedtime. Over the same period, 37/98 (38%) users had discontinued their pacifier. Our intervention was successful at changing parenting behavior, NNT 3, for adoption of a pacifier. Based on published estimates the NNT to prevent one SIDS death is 8,199. Pacifier use was not associated with increased rates of otitis media.

Conclusion: Caregiver knowledge of the role of pacifiers in SIDS prevention was less than for other recommendations. Our educational intervention appeared to increase pacifier use. Pacifier use was not associated with increased otitis media.

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MECHANISMS OF INJURY IN RADIAL HEAD SUBLUXATION: HOW STRONG IS THE PULL?

Diane P. Calello (1), Alex B Troncoso (1), Frederick Fiessler (2), Brian Walsh (3)

1. Emergency Medicine, Morristown Medical Center, Morristown, United States
2. Emergency Department, Morristown Medical Center, Morristown, United States
3. Emergency Dept., Morristown Medical Center, Morristown, United States

Corresponding author: dianepcalello@gmail.com

Keywords: nursemaid, radial head, subluxation

Background: Radial head subluxation (RHS) is a common complaint in the pediatric ED in children aged 6 months to 6 years. The history often includes a pulling or traction mechanism, and when not present, may prompt additional diagnostic measures prior to attempted reduction.

Objective: We sought to determine the mechanism of injury reported in our patient population with RHS.

Methods: 1 year retrospective cohort study in a tertiary pediatric ED. Charts were abstracted based on whether the discharge diagnosis included the words "nursemaid" "radial head" or "subluxation" and were reviewed for relevancy. **Inclusion criteria:** any patient under 10 years of age in whom radial head subluxation was the likely final diagnosis. **Mechanisms** were defined as 1) "pull": clear pulling or traction on the arm 2) "non-pull": clear mechanism such as a fall in which no traction was known to be applied to arm and 3) "unknown": onset of pain began after no known or witnessed event.

Results: There were a total of 73 charts available for review: 4 were excluded for relevancy. The mean age was 32.6 months (SD 20.7-44.5), and 31 (44.9%) of patients were male. 33 (47.8%) of injuries were right-sided. 45 (65.2%) of patients had a pull mechanism, 7 (10.1%) patients had an unknown or unwitnessed mechanism, and 17 (24.6%) had a non-pull mechanism. The most common non-pull mechanism was a fall onto the affected arm.

Discussion: When deciding whether to attempt reduction of RHS prior to obtaining radiographs, clinicians often consider whether the mechanism includes pulling. In this cohort, a pulling mechanism was most common. However, 35% of patients did not have this history.

Conclusion: Although classically described as a pulling injury, radial head subluxation can occur after other mechanisms of injury. Clinicians should be aware of this when evaluating the patient with characteristic physical exam findings of RHS and atypical history.

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RADIAL HEAD SUBLUXATION: FACTORS ASSOCIATED WITH RADIOGRAPHIC EVALUATION

Diane P. Calello (1), Alex B Troncoso (1), John Allegra (2), Richard D Shih (3)

1. Emergency Medicine, Morristown Medical Center, Morristown, United States
2. Emergency Dept., Morristown Medical Center, Morristown, United States
3. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: dianepcalello@gmail.com

Keywords: Nursemaid, Radial Head, Subluxation

Background: Radial head subluxation (RHS) is a common complaint in the pediatric ED in children aged 6 months to 6 years. Classically, the injury occurs as a result of traction on the arm, and physical examination will reveal a child holding the arm extended in pronation. Although clinicians may attempt reduction based on history and physical examination, radiographs may be obtained to exclude the presence of fracture.

Objective: We sought to determine the proportion of patients in whom radiographs were obtained, and to evaluate factors associated with this practice.

Methods: 1 year retrospective cohort study in a tertiary pediatric ED. Charts were abstracted based on whether the discharge diagnosis included the words "nursemaid" "radial head" or "subluxation" and were reviewed for relevancy. **Inclusion criteria:** any patient under 10 years of age in whom radial head subluxation was the likely final diagnosis. **Demographics, mechanism of injury, and whether radiographs were obtained** were abstracted. **Mechanisms** were defined as "pull", "non-pull", and "unknown".

Results: There were a total of 73 charts available for review: 4 were excluded for relevancy. The mean age was 32.6 months (SD 20.7-44.5), and 31 (44.9%) of patients were male. 33 (47.8%) of injuries were right-sided. 24 patients (34.9%) had radiographs, all of which were normal. A mechanism other than "pull" was associated with radiographic evaluation; pull n=9(20%) vs. non-pull n=17(70.6%), unknown n=7(42.9%), p<0.001. In addition, patients getting radiographs were older: 42.5 months vs 31months, p<0.05.

Discussion: Although the clinician may attempt reduction of presumed radial head subluxation without radiographs, in this cohort 35% of patients had xrays prior to reduction. Factors associated with radiographic evaluation included atypical mechanism and older age. This likely reflects a higher suspicion of non-RHS injury, such as fracture, under these circumstances.

Conclusion: Radiographs are not obtained in the majority of children diagnosed with radial head subluxation. However, patients with atypical mechanisms of injury and older age were more likely to undergo radiographic evaluation.

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A SIX-YEAR RETROSPECTIVE REVIEW OF PEDIATRIC FIREARM INJURIES

Phyllis Hendry (1), Andrea Suen (1), Colleen Kalynych (1), Julia Paul (2), Dale Kraemer (3), Carmen Smotherman (3)

1. University of Florida COM Jacksonville, Emergency Medicine, Jacksonville, United States

2. Shands Jacksonville, Trauma Nursing, Jacksonville, United States

3. University of Florida COM Jacksonville, Center for Health Equity and Quality Research, Jacksonville, United States

Corresponding author: Colleen.Kalynych@jax.ufl.edu

Keywords: firearm injuries, injury prevention, pediatric gun shot wounds

Objectives: Pediatric firearm injuries are an increasing source of morbidity and mortality. Epidemiologic trends assist in determining effective prevention strategies and address disparities. Study site is an urban Level I trauma center (TC) and Pediatric Emergency Department (ED). Firearm injuries in adolescents are common; however, not well studied in younger children. Study purpose was to determine trends in pediatric firearm injuries to develop prevention strategies and prospective study models. Aims were to describe epidemiology of firearm injuries in patients 0-18 years old (y/o) presenting to a TC and ED with a case study of patients ≤ 14 y/o for determining shooting characteristics.

Methods: Part I obtained data from the hospital's trauma registry. Inclusion criteria were patients 0-18 y/o presenting January 2005 to December 2010 with firearm injury and registry inclusion. Exclusions were incomplete records or ≥ 19 y/o. Demographic and injury data was extracted. Part II included retrospective review of patients ≤ 14 y/o including TC and hospital records, rescue and crime scene reports. Data from 0-14 y/o group included shooting details and treatment information. Data was entered in RedCap™ (Research Electronic Data Capture) with further analysis pending review of crime scene records. Categorical variables were described using counts and percentages. Differences between groups were assessed using odds ratios, along with 95% confidence intervals, extracted from logistic regression models.

Results: Trauma database query resulted in 456 patients (0-18 y/o) including 78 ≤ 14 y/o. Medical and rescue records were reviewed for 70 of 78 patients. Therefore, 448 patients (70 ≤ 14 y/o and 378 of 15-18 y/o) were analyzed. In 15-18 y/o group 89% were male versus 71% in 0-14 y/o. Eighty-three percent African American (15-18y/o); 64% in 0-14 y/o group. Death occurred in 3% (15-18 y/o) and 1% (0-14 y/o). Patients in 15-18 y/o group were twice more likely (23 vs. 11%) to arrive via car or walk-in compared to 0-14 y/o group (OR=2.32; 95%CI 1.07, 5.03). Patients in 0-14 y/o group were almost four times more likely to be shot at home compared to 15-18 y/o (OR=3.76 ; 95% 2.29, 6.19). In 0-14 y/o group, 13 % were 0-4 y/o, 20% 5-9 y/o, and 67% 10-14 y/o. Forty-eight percent in 0-14 y/o group had evening presentation (1801-2400). Twenty-three percent had critical procedures with 33 % in 0-4 y/o, 26 % in 10-14 y/o, and 7% in 5-9 y/o group. Shooter relationship was

known person (30%) and unknown person (69%). Mental or medical conditions included: ADHD (7%), bipolar (3%); 3% had multiple conditions. Common injury sites were extremities (53%), trunk (39%), and head (14%). Patients in 5-9 y/o group were 6 times more likely to have multiple injury sites compared to 10-14 y/o group (OR=6.26, 95% CI 1.26, 31.09). Types of firearms included 17% airgun, 16% pistol, and 66% unknown. Only 13% had documented child protective services notification.

Conclusion: In light of recent national firearm tragedies, there is renewed interest in firearm safety and prevention. Preliminary results from this study suggest firearm injuries differ in younger victims compared to adolescents. The younger subset of patients was more likely to be shot at home versus public settings. Hospital and rescue records lacked important shooting details often found in crime scene reports that are necessary for development of effective crime and prevention strategies.

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PREHOSPITAL PAIN MANAGEMENT IN INJURED PRESCHOOL CHILDREN BY MOBILE INTENSIVE CARE UNITS

François Topin, Cecile Deniel, Jacques Marchi

Mobile intensive care unit, Bataillon de marins-pompiers de Marseille, Bouches du Rhône, Marseille, France

Corresponding author: francois.topin@bmpm.gouv.fr

Keywords: Pediatrics, Pain management, pre hospital care

INTRODUCTION. Children often require relief of pain and anxiety when suffering traumatic injury. If the acute pain concerns more than 50% of the children sent to emergencies, few data exist concerning the prehospital phase. To retrospectively describe pre hospital pain management, procedural sedation and analgesia in young children. **METHODS:** this was a retrospective database review of all infants aged below or equal 6 years suffering traumatic injury from 01/01/2007 to 31/12/2012. The admitted criteria are age, sex, circumstances of trauma arisen, the place of care, the traumatic disease, the evaluation of the pain and the antalgic.

RESULTS: the analysis concerned 79 children's files of preschool age having required a medicalization by one of the mobile intensive care unit of Marseille navy firemen battalion. The median age of our study population was 3,3 years \pm 1,7 years, the number of boys was 50 (63%) and that of the girls 29 (37%). The main circumstances of trauma arisen are represented by falls (44%), public highway accidents (22%), and burns (20%). The place of residence (49%), the public highway (28%) and the public places (23%) constitute the main places of care. The majority of the traumas are constituted by the cranial traumas (38%), burns (20%), upper limb trauma (16%) were followed by the lower limb trauma (9%). There were 3 cases of severe traumas (4%). No death in pre hospital phase was

to regret. The number of the transported children towards a pediatric emergencies or resuscitation department were respectively 71(90%) and 7(9%). A 2-year-old infant benefited from home care.

The description of the hurts and the behavior of the child led to estimate prevalence of the severe pains in 63% (50 cases), and thus more frequent than circulation disorders(30%), or of consciousness (9%) or respiratory distress syndromes (2,5%). Analgesic were administered to 44 children (56 %). A sedation analgesia was indicated in a little more than a third of the cases (38%), that is 30 children. Sufentanyl in intravenous injection was used in 2 cases (2,5%), Single morphine IV in 10 cases (13%), the ketamine IV in 15 cases (19%). The midazolam was used in association in the analgesic in 10 cases (13%). The noticed complications are among 2 (7% of the cases of sedation analgesia): an hypoxemia and a vomiting. No antalgic drug was delivered in 35 cases (44%).

In our study, the severe acute pain is very often met in pre-hospital phase at the injury young child. The use of the analgesic varied according to the indications. Indeed, if 100% of the children victims of a burn or a strong suspicion of fracture of a member received an analgesic, those victims of multiple bruises, cranial trauma, wounds by bite received analgesic in respectively 33%, 3% and none of the cases.

CONCLUSION: Injury child pain control is a major concern of our medical teams at the same time as respiratory and circulation stabilization The evaluation of the painful intensity is difficult and can be improved in our study population by the employment of a hetero-evaluation pain scale as well as the establishment of procedures of care concerning the care of the pain.

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ACROCYANOSIS IN YOUNG HISPANIC MALE. A PHOTO REPORT.

Nibhanipudi Kumara (1), Omer Nazeer (1), Brett Sweeney (1)

1. Emergency Department, New York Medical College, New York, United States

Corresponding author: brett.sweeney@gmail.com

Keywords: Acrocyanosis, hispanic, teenage

A case of Acrocyanosis in a teenage male.

Omer Nazeer, MD., Brett Sweeney, MD., Ahmed Abdin, MD., Kumara Nibhanipudi, MD., NYMC, Metropolitan Hospital Center, New York, NY10029.

This 13 yr old male teenager has come for a complaint of bluish discoloration of the finger nails since November, 2012. Present all the time. No other medical problems. No shortness of breath. No other exposure to any drugs.

On exam: This is a 13 yrs old child is well developed, well nourished, not in distress; Eyes: PERL; fundus benign. Ears: TMs intact. Skin: over the dorsum of the hands, as seen in

the photos, bluish discoloration is present. Chest: clear. No wheezing. Heart sounds are S1, S2 and no murmurs. Peripheral pulses are normal. Pulse oxygen 100% on room air.

Imp: Acrocyanosis Plan: usage of the warm gloves and avoidance of cold stimuli.

Our case is different, in that acrocyanosis is more commonly described in girls where as our patient is a Hispanic male teenager. Secondly, the acrocyanosis is persistent rather than intermittent as happen in Reynaud's disease.

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SEVERE BLEEDING UNDER VKA :OBSERVATIONAL AND DESCRIPTIVE STUDY OF PCC PRESCRIPTION OF 267 CASES ADMITTED AND CARED FOR UNIT EMERGENCY CHU CLERMONT-FERRAND FROM JANUARY 2010 TO DECEMBER 2011, COMPARED TO 2008 HAS RECOMMENDATIONS

Jennifer Saint-denis (1), Nicolas Dublanquet (1), Jeannot Schmidt (2)

1. emergency department, CHU Clermont-Ferrand, Clermont-Ferrand, France

2. emergency department, CHU Clermont-Ferrand, Clermont-Ferrand, France

Corresponding author: jsaintdenis@chu-clermontferrand.fr

Keywords: vitamin K antagonist, severe bleeding, prothrombine complex concentrate

Introduction: In 2008, the French National Authority for Health published guidelines for the management of severe bleeding in patients on vitamin K antagonist (VKA). The aim of the study was to determine if the treatment of bleeding events was in consistent with these recommendations.

Materials and Methods: A retrospective analysis was performed on all patients who received prothrombine complex concentrate (PCC) from 2010 to 2011 in our emergency unit. Characteristics collected were: VKA type, the International Normalized Ratio (INR), location of severe bleeding, medical care and evolution of the hemorrhage event.

Results: During this period 264 patients received PCC for severe bleeding under VKA. Mean age was 78 ((IC95 % = [76,6–79,3]) years old. In 24.3% patients, INR was beyond the upper value of the target range. The two main locations for bleeding events were intracranial hemorrhage (25.1%) and gastrointestinal hemorrhage (33%). Intracranial hemorrhage diagnostic confirmation needed a significantly longer time (3h25 versus 4h21 for other bleeding locations; p=0,166). One hundred and ninety one patients (81.2%) were given Vitamin K and 169 patients (70.4%) received the recommended dose of PCC, with median times for administration of (respectively) 15 minutes and 55 minutes ([0:00 - 16:48] and [0:00 - 12:55]). After diagnosis, Vitamin K and PPC were given after respectively 47 minutes ([0:34 -

1:00]) and 79 minutes ([1:08 - 1:30]). Compared to 2009 data, 5% more PPC doses followed the guidelines. Mean time between admission and PPC administration was 3h57 (écart-type). The hospitalization rate was 97.7%, with a mean duration of 15.1 days (IC95% = [12,5 - 17,8]) After seven days, mortality rate was 12% and 169 patients were still hospitalized.

Conclusion: The treatment of severe bleeding under VKA in our unit is satisfactory according to the french guidelines. Furthermore, efficiency has been improved since our 2009 study based on similar population and parameters. Severe bleeding under VKA is correlated to a high in-hospital mortality and needs a standardized and early treatment

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CHANGE IN THE RESOURCES FOR STORING CÉLOCURINE® (SUXAMETHONIUM) IN PRE-HOSPITAL SETTINGS FOLLOWING THE RECOMMENDATIONS OF THE FRENCH NATIONAL AGENCY FOR THE SAFETY OF MEDICINES AND OTHER HEALTH PRODUCTS (ANSM) IN JULY 2012.

Hugues Lefort (1), Alexandre Mendibil (1), Daniel Jost (1), Sophie Mole (1), Anne-claire Cuquel (2), Karim Tazarourte (3), Mickael Lemaire (1), Sylvie Margerin (1), Jean-michel Tourtier (1), Laurent Domanski (1)

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France

2. Central Pharmacy, Val-de-Grâce Hospital, Paris, France

3. Pre-hospital intensive care Melun, Melun Hospital, Paris, France

Corresponding author: hdldefort@gmail.com

Keywords: Suxaméthonium, pre-hospital settings, recommendations

Introduction: The National Agency for the Safety of Medicines and other Health Products (ANSM) recommended, in July 2012, not breaking the cold chain before use of suxamethonium. The aim of this study was to determine how pre-hospital practices for storage of the neuromuscular blocking agent indispensable for rapid sequence induction had changed.

Materials and methods: Descriptive study of the before (2011) and after (after October 2012) type conducted with a digital questionnaire circulated to French emergency services (SAMU/SMUR) operating primary patient transport in medical vehicles (MV).

The data collected were SAMU/SMUR site, storage conditions at the MV hospital base and inside or outside the MV if patient management necessitated it. The primary assessment criterion was the change in storage methods before vs. after.

Results: In 3 months, almost a hundred SAMU/SMUR located in 62 French departments (out of a total of 101 departments) responded. Overall, the change in the various profiles for suxamethonium storage collated was significant ($p < 0.001$). The qualitative variables were compared using

an overall Fisher's exact test. The significance level was 0.05. The 5.2% ($n = 4$) of the services that had stored suxamethonium ampoules at room temperature in the hospital now refrigerated suxamethonium. For the 94.8% other services, 5 storage profiles were observed before and after the recommendations. The RMV profile scrupulously complied with the recommendations: the ampoules were constantly stored in the MV refrigerator until their use was certain (before = 35.63%; after = 72.4%). The RMViso profile stored ampoules in the MV refrigerator with passive transport to the patient in a refrigerated isothermal bag (IsoBag) (before = 18.39%; after 19.5%). In the MViso profile, there was no refrigerator in the MV: the ampoules were contained in an IsoBag stored in the refrigerator at the base and transported to the patient (before 17.2%; after 20.7%) and returned to the refrigerator at the base on returning from the intervention if the product had not been used. The RMVair profile stored the ampoules in the MV refrigerator and transported them at room temperature from the MV to the patient (before = 17.2%; after = 8%). Lastly, the MVair profile stored the ampoules at room temperature in the pre-hospital setting (before = 26.4%; after = 3.4%).

Discussion: The study shows the significant change, in a few months, of the methods of storing suxamethonium in France, in pre-hospital settings and up to the patient, subsequent to the ANSM recommendations

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ADHERENCE TO FRENCH GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF UNCOMPLICATED URINARY TRACT INFECTION IN THE EMERGENCY DEPARTMENT.

Pierrick Le Borgne, David Pariente, Bruno Riou, Yonathan Freund

Emergency department, GH Pitié Salpêtrière, Paris, France

Corresponding author: pierrick_med@yahoo.fr

Keywords: Uncomplicated urinary tract infection, adherence to guidelines, antibiotics resistance

Uncomplicated urinary tract infection (UTI) is one of the most common infections among women. Antimicrobial resistance among uropathogens causing community-acquired UTI is increasing worldwide. Since 2008 French guidelines are available but adherence varies widely among practitioners. As recommended, fosfomycin should be considered as first choice antibiotic before a fluoroquinolone (FQ) or nitrofurantoin. We wanted to evaluate in our Emergency Department (ED) whether the existing guidelines were followed. In this retrospective monocentric study, we reviewed the charts of all adult females presenting to the ED in 2011 for UTI. Men, and patients presenting with complicated UTI were excluded from the study. The primary end point was the adherence to guidelines (by fosfomycin rate prescription). Secondary end

points were to compare the ecology and antibiotics resistance rates to those of other studies. 216 patients were included for statistical analysis. The median age was 35 years. Fosfomycin was prescribed in 37 % (IC95%: [30-44%]) and 50 % of the patients received a FQ. Escherichia coli remains the predominant uropathogen (74%); staphylococcus saprophyticus (20%) and enterococcus (9%) were found, showing a similar distribution to the results of other studies. Urine cultures - which are not normally recommended - were prescribed in 77% of our sample and 29% of patients had additional exams. Resistance to penicillin occurred in 28%. The rate of resistance was 6% for fosfomycin, 3% for FQ and 3% for nitrofurantoin. Our study highlights the poor adherence to current guidelines, a high number of inappropriate additional testing and the overuse of FQ in UTI.

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PROTHROMBIN COMPLEX CONCENTRATES VERSUS FRESH FROZEN PLASMA IN EMERGENCY MEDICINE

Çi?dem Özpolat (1), Özge Onur (1), Serkan Emre Ero?lu (1), Haldun Ako?lu (2), Arzu Denizba?? (2)

1. Emergency department, Marmara University Pendik Research and Training Hospital, ?stanbul, Turkey

2. Emergency department, Marmara University Pendik Research and Training Hospital, istanbul, Turkey

Corresponding author: drseroglu@gmail.com

Keywords: Warfarin, Fresh frozen plasma, Prothrombin complex concentrates

Introduction: Warfarin-related haemorrhages carry a high mortality. Rapid reversal of coagulopathy is a cornerstone of medical therapy to halt bleeding progression especially in emergency settings; however the optimal approach remains undefined. Prothrombin complex concentrates have promising features that may rapidly reverse coagulopathy, but remain relatively unstudied. In this study we aim to compare fresh frozen plasma (FFP) and prothrombin complex concentrates (PCC) for rapid and effective means of normalizing coagulation factor levels.

Material and Methods: We retrospectively search patients with diagnosis of warfarin related haemorrhages in the last month. We divide the patients to two groups with warfarin-related haemorrhages as those who had given FFP (15 ml/kg) or PCC (ml/kg for targeted INR level) and compare their initial, 15th minutes, 1st hour and 6th hour after treatment prothrombin times, INR levels, complications about haemorrhage and results of the patients.

Results: Total 16 patients were found in one month who had diagnosis of Warfarin related haemorrhage and had taken FFP or PCC. 43,8% (n=7) of them were given FFP, 56,3% (n=9) of them had PCC. All patients in two groups had received K vitamin 10 mg, IV. Mean of FFP group initial INR levels was 20,02 ± 12,45 (95% CI 8,50- 31,52), mean INR level of PCC group was 13,83 ± 9,16 (95% CI 6,78-20,87).

Mean values of 15th minutes, 1st hour and 6th hour INR levels were 1,48 ± 0,26, 1,39 ± 0,29, 1,49 ± 0,33 respectively in PCC group; whereas mean values of 15th minutes, 1st hour and 6th hour INR levels were 1,87 ± 0,36, 1,88 ± 0,35, 2,12 ± 0,77 in FFP group. So there was more increase in 6th hour INR levels in FFP group. There was no ischemic complication seen in both group, but time to arrive PCC so time to initiate treatment was statistically significantly lesser than arrival time of FFP.

Discussion: Warfarin is a long acting drug and in this study we see that PCC causes less increase than FFP in INR levels at the 6th hour. PCC can be given more rapidly than FFP. PCC does not require blood-type matching; whereas FFP requires ABO blood typing due to the presence of isohemagglutinins. PCC is stored as a lyophilized powder and can be reconstituted in sterile water in minutes. In contrast, FFP is frozen and it takes up to 30–60 min for thawing. PCC is more easily given in emergency room and its use may be preferred if time to arrive FFP is long in local settings.

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ETHNOBOTANICAL PRODUCTS INTOXICATION: RETROSPECTIVELY REVIEWED CASES

Mihaela Corlade Andrei (1), Diana Cimpoesu (1), Elena Butnaru (2)

1. Emergency Medicine Department, UMF "Gr.T.Popa", Iasi, Romania

2. Pharmacology, UMF "Gr.T.Popa", Iasi, Romania

Corresponding author: dcimpoiesu@yahoo.com

Keywords: Ethnobotanical, Intoxication, Emergency

Introduction: Romania is one of the UE countries with the largest increases in the prevalence of ethnobotanical products. In just three years, the number of consumers increased from 1.7% to 4.3%.

Objective: The study was performed to analyze the profile and evolution of the patients with ethnobotanical plants poisoning in ED.

Method: We retrospectively reviewed cases presented to Emergency Department (ED) of Sf. Spiridon Hospital Iasi, Romania, during a 15-month period (1st of January 2012 to 31st of March 2013) with chief complaints of ethnobotanical products use before arrival.

The patients were analyzed with respect to gender, age, residence, the time they came in ED, consumption method, clinical symptoms, hemodynamic parameters, ecg abnormalities and mortality.

Results: Data from 27 hallucinogenic-plants-poisoned patients were included in the final analyses. 66.66% of patients were brought to hospital by ambulance from public areas (coffe-shops and night clubs) (48.14%). In one case an ambulance was requested by the teachers of a student with hyperactivity disorder and the police

intervention was also required in one case for a very aggressive patient.

Statistically higher poisoning were associated with male sex (81.48%), urban residence (77.77%), young students (55.55%) and cold season (70.37%).

Preferred method of use is smoking (74.07%), followed by intranasal route (22.22%), compound with alcohol (48.14%). Two patients reported accidental inhalation of ethnobotanical products.

Dominant clinical symptoms were: psycho-motor agitation (92.59%), palpitations (77.4%), headache (44.44%), tachypnea (37.03%), chest pain (33.33%), vomiting (25.92%), epigastric pain (22.22%). On ecg we detected with a high frequency (92.59%) arrhythmias: supraventricular tachycardia, PVC and atrial fibrillation.

Toxicology qualitative urine test revealed the presence of THC in 37.03% patients.

The time spend in ED was between 2 – 12 h, the admission rate was 14.81%.

33.33% of the patients left without medical advice before the end of the investigation and treatment.

The mortality rate was 0. All of them were orientated to psychological counseling.

Conclusions: For Romania it's a new pathology, the symptoms and the treatment also are nonspecific and depends largely on how quickly it's diagnosed correctly by anamnesis. Ethnobotanical products can cause potentially serious health care conditions that necessitate ED evaluation. Most cases can be discharged from the ED after a period of observation, after psychological and psychiatric assessment.

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SIMPLE AND EFFECTIVE METHOD TO PREVENT INTRAVENOUS FLUID HEAT LOSS

Yoonhee Choi (1), Donghoon Lee (2), Sunhwa Lee (1)

1. emergency department, Ewha womans' university Mokdong hospital, Seoul, Korea, (South) Republic of

2. emergency department, Chungang university hospital, Seoul, Korea, (South) Republic of

Corresponding author: sunhwa9@hanmaili.net

Keywords: Hypothermia treatment, active rewarming, preventing fluid heat loss

Background: Hypothermia may occur in various situations. To treat hypothermia patients, active warming might be needed. In most emergency departments, IV warm saline infusion is used for treatments. However, during IV warm saline infusion, heat loss of IV warm saline may occur and aggravate hypothermia. Thus, in this study, we conducted an experiment for conserving heat loss from warm saline. Methods : Four insulation methods were used for this study. 1) Wrapping IV fluid administration set tube with a cotton bandage, 2) wrapping IV fluid administration set tube with a cotton with aluminum foil 3) wrapping warm saline bag with a cotton bandage, 4) wrapping warm saline

bag with a cotton bandage with aluminum foil. Intravenous fluid was preheated between 37-39°C. Saline bag temperature and distal end of IV administration set temperature were measured every ten minutes for an hour. Infusion rate was 1000cc/hr and for accurate infusion rate, we used an infusion pump. Four different experimental methods and a control experiment were conducted and each method contained 10 cases. Result: The mean temperature of initial saline bag was 39.11°C. After an hour later, distal end of the fluid temperature ranged from 29.63°C to 34.3°C. Without any insulation, pre-heated 39°C warm saline decreased to 34.8°C after running through the 170cm IV administration tube. After 1-hour later it turned to 29.63°C. As we expected, heat loss is most prevented by wrapping both saline bag and IV administration set together with a cotton bandage and aluminum foil. Conclusion: Wrapping both saline bag and IV administration set with a cotton bandage and aluminum foil can prevent heat loss in Emergency departments.

Po-604

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THE LOGISTICS OF EMERGENCY MEDICAL SERVICES AT HIGHWAY CONCESSIONS: STAFF PROFILE AND SERVICES CHARACTERIZATION

Cleuza Aparecida Vedovato, Ana Paula Boaventura, Izilda Esmenia Muglia Araújo, Maria Inês Monteiro
Faculty of Nursing, University of Campinas (Unicamp), Campinas, Brazil

Corresponding author: anaboa@fcm.unicamp.br

Keywords: Emergency Medical Services, emergencies, Pre-hospital

Introduction: Technical guidelines for the non-Hospital Emergency Care Units, inter-hospital transport, training divisions for all levels of emergency care and general guidelines for the design of a regional emergency care network were developed and form the text of Directive no. 2,048, Nov/2002, which establishes the principles and guidelines of state emergency care systems in Brazil, defines standards, criteria for functioning, classifications and registers of hospital emergency units and determines the creation of the State Emergency Medical Services System Coordinations in Brazil. The emergency medical service is a attribution in the health area, linked to a Regulation Center, with staff and fleet of vehicles compatible with the health needs of the population in a region, and must have the support of network of health services, duly agreed between the managers of the regional health system. The medical regulation for EMS requires the presence of a doctor at the emergency call center who establishes a diagnosis over the telephone of the needs and degree of urgency of a particular situation, classifying and establishing priorities among the demands, defining and sending the resources which are best suited to the patient(s)' needs, as quickly as possible, monitoring the team's performance at the location where the care is

provided and facilitating access to the receptive services in a healthcare system. This role is crucial to the efficiency of the services provided. Highway concession is the transfer in the administration of a road stretch to a private company for a predetermined period, usually between 20 and 30 years. At the end of the management of the concessionaire, the road back to be administered by the government with all the benefits realized, including the expansion, renovation and modernization of the road network, the Brazilian Concession Road began in the 1990s as an alternative to the lack of government resources for the maintenance and expansion of the national highway network. The services and other operational activities which should be provided by highway concessionaires fall under the specific responsibility of the concessionaires and consist of operational functions such as the provision of support to customers, including first aid and medical care to victims of road traffic accidents, involving eventual transfers to hospitals, the operation of emergency telephone services and the provision of guidance and information to customers. Aim: To describe the formation of emergency medical teams across highways, the staff profile and services characterization. Method: Descriptive/exploratory study using instruments which have been developed in advance and validated by specialists, applied to the EMS coordinators at highway concessions across the highway network in the Campinas region. Those interviewed were recommended by company representatives. The study was submitted for examination by the Research Ethics Committee at the Faculty of Medical Sciences at the Universidade Estadual de Campinas [Campinas State University] – Unicamp, meeting the National Council of Health's Resolution 196/96 and obtained a favorable opinion (CEP no. 674/201), without any objections. Results: The sample was formed of four male coordinators with an average age of 34.75 ±6.9, who had been trained for three to nineteen years and had been at the company for three to nine years. The average number of professionals in the companies was ten doctors, seven nurses and 38 nursing technicians and the daily working hours were 12 to 24 hours. An average of 20 staff members participated in the Basic Life Support (BLS) courses, six in the Advanced Cardiovascular Life Support (ACLS) course, 18 in the Pre-Hospital Trauma Life Support (PHTLS) course and 17 in the Advanced Trauma Life Support (ATLS) course. Items such as the coordination center, free telephone and radio monitors were present across all concessionaires, and, in terms of vehicles, each had an average of nine basic support vehicles and one advanced support vehicle. Conclusion: Teams are formed of doctors, nurses, nursing technicians and assistants and professionals known as resgatistas [paramedics] and in that all of the companies studied offered periodical training to their staff at varied intervals, and the average frequency of refresher courses was low, over 12 months.

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RECORD IN THE MEDICAL HISTORY OF PATIENTS COMING TO THE EMERGENCY FOR ALLERGIC DRUG REACTION

José Valero-roldan (1), Inmaculada López-leiva (1), Rafael Infantes-ramos (1), Cristina Fernández-fígares (1), Iván Villar-mena (2)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Allergic reaction, Medical history, Record

Introduction

To decide the administration of treatment of patients who come to ER need the support of the medical record showing the previous history. It is important to record the drug allergic reactions to avoid errors in subsequent medical action.

Aim (s) or purpose:

To describe personal history recorded and use of antihistamines previously in the medical history of patients coming to the emergency for allergic drug reaction

Design and methods:

Design and study: Cross-sectional study, observational study.

Technical data: dimensions of quality: scientific-technical quality or professional competence, adequacy and continuity of care.

Site: Emergency Department, Carlos Haya Regional University Hospital, Málaga, Spain.

Subjects: All patients presenting to a hospital emergency as the reason for skin, allergic, urticarial and drug reactions throughout the year 2012. After reviewing the patient's medical history shows that have had a reaction produced by a drug (N= 73).

Instruments: computerized medical record of patients (DIRAYA software), randomly chosen.

Data sources for the study: data from the collection ledger and translation made in the SPSS table. Version 15 (SPSS. V15).

Variables: History of previously drug allergic reaction, history of diabetes mellitus, hypertension, dyslipidemia, anxiety and depression recorded in the patient's medical history, previous use of antihistaminicos in the same episode that goes to the ER and later registration of the medical episode primary care in the patient's medical history.

Resultados:

We analyzed 73 patients in the Emergency Unit with allergic drug reaction. Of the patients included, have a history of previous allergic reaction 41 (56.2%). History of DM 8 patients (11%) of HTA 13 patients (17.8%) of DL 11 people (15.1%), anxiety 11 patients (15.1%) and depression 12 patients (16.4%). Themselves have used some antihistamine prior to going to the ER 10 people (13.7%). The primary care physician subsequently recorded in the

database (Diraya) used for medical records of 40 patients (54.8%).

Conclusion:

There is a high value for patients, more than half of them (56.2%) who come to the ER for an allergic reaction to medication had a prior history of other similar drug reactions recorded in your medical record. Only later are recorded in the medical record of the primary care physician in 54.8% although there may be an error caused by the non-attendance of the doctor's office patient.

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DOES THE TELEPHONE TRIAGE SERVICE CHANGE PATIENTS' ACTIONS FOR URGENT MEDICAL CONSULTATION IN JAPAN?

Yasumitsu Mizobata (1), Toru Matsuno (2), Rie Igarashi (2), Yoshio Yamashiro (2), Hiroshi Fukui (2)

1. Critical Care and Traumatology, Osaka City University, Osaka, Japan

2. Ambulance office, Osaka Municipal Fire Department, Osaka, Japan

Corresponding author: mizobata@med.osaka-cu.ac.jp

Keywords: telephone triage, ambulance dispatch, emergency department

Introduction

To resolve the problem of an overwhelming increase in ambulance dispatches and to enable early medical consultation for serious patients, the telephone triage service was introduced in metropolitan Osaka, Japan in October 2010. In 2012, the telephone triage service coped with more than 100,000 calls. Using computerized protocols, trained nurses triage patients into ambulance dispatch, urgent consultation to emergency department (ED), nonurgent visit to hospital, or self-care. When patient decides by him- or herself to receive emergency consultation, only emergency hospital information, such as address and phone number, is provided without nurse's triage. The aim of the present study was to investigate the changes in patients' actions following telephone triage advice and to evaluate the effect of the telephone triage service on the number of ambulance dispatches in Osaka.

Method

Inquiry sheets were handed over to 2,000 patients or their attendants who visited the ED of 10 hospitals in Osaka between November 2011 and February 2012. The sheets contained inquiries concerning patients' knowledge and use of the telephone triage service before the ED visit, advice given by the triage nurse, and patients' actions following the triage advice. The patients were divided into the two groups; those called and were given triage advice before their visit to the ED (triage [T] group), and those visited the ED without using the telephone triage service (nontriage [NT] group). Numerical data were compared using student's t-test, and categorical data were compared using chi-square

analysis. P value less than 0.05 was considered to be statistically significant.

Results

We collected 1,620 inquiry sheets. Ten sheets were excluded because of a lack of essential answers. We found that 1,114 patients were not aware or did not have enough knowledge about the telephone triage and did not use it before their ED visits. The service was known to 496 patients. Of the 496 patients, 181 patients were in the T group, and 315 were in the NT group.

The age and male to female ratio of the patients were comparable between the T and NT groups (age, 38.4 ± 28.3 vs. 39.0 ± 32.1 years, $P = 0.57$; male:female, 86:84 vs. 149:159, $P = 0.64$). The number of disease patients was not significantly different, but tended to be higher in the NT group (69.6 vs. 81.3 %, $P = 0.055$). The visiting modes to the ED were comparable between the T and NT groups (ambulance/walk-in [%], 29.8/70.2 vs. 30.1/69.9, $P = 0.95$). Within the patients who were transported by the ambulance, severity was identified in the 105 patients from the ambulance reports. No difference was observed in the two groups (severe/moderate/mild [%], 0/22.9/77.1 vs. 0/34.3/65.7, $P = 0.23$).

In the T group, the triage nurses recommended ambulance call for 41 patients, urgent consultation to the ED for 22, nonurgent visit for 16, and self-care for 12. Additionally, 90 patients decided by themselves to visit the ED and received only hospital information. Triage advice was followed by 151 patients (83.4%). On the other hand, 6 patients (3.3%) did not follow the advice and responded with a less urgent action, and 24 patients (13.3%) responded in a more urgent manner than advised by the nurses.

Assuming that the patients in the T group could not use the telephone triage service, 55 patients would have called an ambulance, 89 would have visited the ED by themselves, 37 would have stayed at home without an ED visit. Among the patients who would have stayed at home, 15 were transported by ambulance, and 5 of them were moderately serious. On the other hand, among the 55 patients who answered that they would have called an ambulance, only 28 were transported by ambulance, and 27 patients changed their action to walk-in ED visit.

Conclusion

The telephone triage service changed the patients' mode of visit to the ED. Most patients followed the given triage advice; however, some patients responded in a more urgent manner. Although no decrease in ambulance transport and no change in patient's severity were observed, effective triage was observed in some cases. Surveillance of all cases may be required to investigate the efficacy of the telephone triage service.

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COMPARISON OF ENDOTRACHEAL INTUBATION, COMBITUBE AND LMA BETWEEN INEXPERIENCED AND EXPERIENCED EMERGENCY MEDICAL STAFF : A MANIKIN STUDY

Farnia Mohammad Reza (1), Morteza Saeedi (1)

1. Emergency department, Shariati Hospital, Tehran, Iran, Islamic Republic of

Corresponding author: m-farnia@tums.ac.ir

Keywords: prehospital, laryngeal mask airway, endotracheal tube

Abstract

Background:

EMS personnel manage the airway, but only group of them are allowed to engage in Endotracheal Intubation (ETI). Our purpose was to evaluate if the use of laryngeal mask airway (LMA) or Combitube can be used by inexperienced care providers.

Methods:

A randomized, prospective manikin study was conducted. Fifty-nine participants were randomly assigned into two groups. Experienced group included 16 paramedics, 8 anesthetic-technicians and inexperienced group included 27 Emergency Medical Technician-Basic (EMT-B) and 8 nurses. Our main outcomes were success rate and time to airway after only one attempt.

Results:

Airway success was 73% for ETI, 98.3% for LMA, and 100% for Combitube. LMA and Combitube were faster and had greater success than ETI ($P=0.0001$). Inexperienced had no differences in time to securing LMA compared with experienced (6.05 vs. 5.4seconds, respectively, $P=0.26$). One failure in inexperienced, and no failure in experienced group occurred to secure the LMA ($P=0.59$). The median time to Combitube placement in experienced and inexperienced was 5.05 vs. 5.00 seconds, $P=0.65$, respectively. Inexperienced and experienced groups performed ETI in 19.15 and 17seconds, respectively ($P=0.001$).

After the trial, 78% preferred Combitube, 15.3% LMA, and 6.8% ETI as the device of choice in prehospital setting.

Conclusion:

Time to airway was decreased and success rate increased significantly with the use of LMA and combitube compared with ETI, regardless of the experience level. This study suggests that both Combitube and LMA may be acceptable choices for management of airway in the prehospital setting for experienced and especially inexperienced EMS personnel.

Key words: prehospital, laryngeal mask airway, endotracheal tube, Combitube

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USE OF A SIMPLE PREHOSPITAL STROKE SCALE IN THE BARCELONÈS NORD-MARESME AREA

Montse Gorchs Molist (1), Marisol Querol Gil (2), Natalia Pérez de la Ossa (3), David Carrera (4), Francesc Xavier Jiménez Fàbregas (5), Francesc Escalada (6), Vicens Chicharro (7)

1. Emergency Department, Sistema Emergencias Médicas, Barcelona, Spain

2. Emergency Department, Sistema Emergencias Médicas, Barcelona, Spain

3. Neurology Department, Hgtip, Barcelona, Spain

4. Neurology Department, Hgtip, Barcelona, Spain

5. Emergency Department, Sistema Emergencias Médicas, Barcelona, Spain

6. Emergency Department, Sistema Emergencias Médicas, Barcelona, Spain

7. Emergency Department, Ambulances, Barcelona, Spain

Corresponding author: montsegorchs@gmail.com

Keywords: stroke code, EMS, Pre-hospital

Introduction

Stroke is a time-dependent medical emergency. The aim of Code Stroke is to shorten the time between the onset of symptoms and the access to specialized diagnosis and treatment.

Early recognition of stroke symptoms by the emergency teams is essential. The utilization of simple neurological scales provides an accurate suspected diagnosis and very valuable information on the disease severity.

The RACE is a modification of the NIHSS scale, simplified for use in the prehospital setting. It assesses 6 items: facial paresis, brachial paresis, crural paresis, oculocephalic deviation, agnosia and aphasia.

Objectives

To analyze the sensitivity and specificity of the RACE scale for identifying acute stroke in the prehospital setting.

To evaluate the ability of the prehospital RACE score for predicting the severity of acute stroke, and it correlates with the NIHSS score estimated in the hospital setting.

Methods

Descriptive study to analyze the sensitivity and specificity of the RACE scale. The NIHSS scale was used as gold standard. A training program on the implementation of the RACE scale in the prehospital identification of acute stroke was conducted for emergency medical technicians.

The study sample were 206 patients out of 450, who were assessed with the RACE and the NIHSS scales.

The sensitivity, specificity, PPV, NPV and efficiency were calculated.

Results

The RACE scale was performed in 206 patients (56% of Code Stroke activations).

The accuracy of the RACE scale for predicting a stroke was high, with an efficiency of 79,5%, a sensitivity of 93,9%, a specificity of 19,2%, a PPV of 88,0% and a NPV of 33,3% in the diagnosis of acute stroke. Efficiency of 79,5%.

The RACE scale showed a good correlation with the NIHSS scale ($r = 0.75$; $p < 0.001$).

Conclusions

The RACE scale has high sensitivity but low specificity for identifying stroke in the prehospital setting.

The ability of the RACE scale to assess the severity of acute stroke in the prehospital setting is confirmed.

The results of this study can provide more clinical information to the Code Stroke receptor centre before the patient's arrival to the hospital, so that the care and

treatments can be planned according to the severity of each patient.

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UNTOWARD CALLS

Olga Maurin (1), Catherine Rivet (1), Olivier Stibbe (1), Thomas Loeb (2), S. Raclot (1), Sylvain Gourden (1), Jean-Pierre Tourtier (1), Laurent Domanski (1), Mathias Huitorel (2), Michel Baer (2).

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France

2. Emergency Medical Department, Hôpital Raymond Poincaré, Garches, France

Corresponding author: olgamaurin@free.fr

Keywords: emergency calls, emergency line, untoward calls

Introduction: Since 2003, the European regulations relating to telecommunications require that the number 112 be available for landlines and cell phones free of charge and that an appropriate response to emergency calls is available. In France, the number previously used for medical emergencies was 15. The number of 112 calls is constantly increasing but a high proportion of calls to that number are untoward.

The objective of the study was to compare, for a region, the number of untoward calls to the numbers 15 and 112.

Method: The study included all the calls to the numbers 15 and 112 in Paris and suburban areas. From January to December 2011, for each number, the total number of calls and the number of untoward calls were reported. Untoward calls consisted in calls coded 'error' and 'fax'. The comparisons were conducted using Fisher's exact test (significance level: $p < 0.01$).

Results: 493,528 calls were analyzed: 340,377 (69%) to the number 15 and 153,151 (31%) to the number 112. The proportion of untoward calls was 45% (154,690) for number 15 vs. 69% (105,521) for number 112. The difference was significant ($p < 0.0001$).

Discussion: The proportion of untoward calls to number 15, dedicated to medical emergencies for many years, remains considerable. The situation is exacerbated by a new number, 112, which is poorly known by the population (in 2011, only 32% of French people were aware of the number 112; source: European Commission). With a view to decreasing the proportion of untoward calls to the emergency services and recentering our response on the real emergency calls, enhancing the French population's awareness of the emergency numbers would probably be effective.

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A CASE REPORT OF AN AORTIC DISSECTION.

Tá?a Bulíková (1), Viliam Dobiá? (2), Július Hodosy (3)

1. Emergency department, SlovakMedicalUniversityBratislava, LSE ? Prehospital EMS Llc. Limbach, Bratislava, Slovakia

2. Emergency department, SlovakMedicalUniversityBratislava, 2Centre for Education in EM Olomouc, 3LSE ? Prehospital EMS Llc. Limbach, Bratislava, Slovakia

3. Emergency department Ru?inov, UniversityHospital in Bratislava, Pa?ítková 4, Bratislava,, doctor, Bratislava, Slovakia

Corresponding author: bulikova@gmail.com

Keywords: back pain, hypertension emergency, acute aortic dissection

Poster presentation

Abstract

Emergent urgencies in hypertension can be observed in severe hypertension disorders and are associated with acute end-tissue damage. Although frequency of Emergency Medical Service (EMS) dispatching to such cases is lower than in the past in Slovakia, it still represents not ignorable amount of cases.

The authors present a case report, where an dispatch of EMS

ambulance to what was supposed to be an „easy“ vertebral pain diagnosis in a 55-year old

male turned out to be actually a life-threatening condition. Sudden onset of abrupt thoracic

back pain without response to analgetics, extreme values of blood pressure with dyscrepancy

between right and left limbs (30-40 mmHg), and negative ECG finding in terms of missing

acute coronary syndrome signs led us to the diagnosis of possible aortic dissection, which was

proved by CT scan. Appropriate plan management is subsequently proposed and discussed

according to CT result.

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Hall Accueil Expo poster area

IMPACT OF THE IMPLEMENTATION OF A TRAINING PROGRAM FOR STROKE CODE, IN THE PERFORMANCE OF THE EMERGENCY MEDICAL TECHNICIANS FROM THE BARCELONÉS NORD I MARESME AREA.

Marisol Querol (1), Montse Gorchs (2), Natalia Perez De La Ossa (3), David Carrera (3), Francesc Xavier Jimenez Fabregas (2), Xavier Escalada (2), Vicens Chicharro (4)

1. Emergency department, SISTEMA EMERGENCIAS MEDICAS, Barcelona, Spain

2. Emergency department, SISTEMA EMERGENCIAS MEDICAS, Barcelona, Spain

3. Neurology department, HUGTiP, Barcelona, Spain

4. Emergency department, La Pau Ambulances, Barcelona, Spain

Corresponding author: marisol.querol@gmail.com

Keywords: Stroke code, EMS, Training

Introduction

Stroke is a disease that requires immediate attention and benefits from an early specialized care. The main aim of Stroke Code is to stabilize and transport the patient as soon as possible to the most appropriate medical center.

Objectives

To analyze the effect on stroke code activation made by the emergency medical technicians, after completion of a training program.

Methods

Training sessions were scheduled for emergency medical technicians, including refreshing of common stroke symptoms and treatment options, as well as training for the use of a specific register sheet. The effect of the training sessions was analyzed based on the number of codes activated, intervention times and the number of stroke mimics, comparing the data collected (post RACE) with the data of the same term, prior to training (pre RACE.). There was also a satisfaction survey for the technicians.

Results: A total of 1030 patients were included. An increase in the number of activations was observed, rising from 45.10% to 54.60% ($p < 0.019$). The number of stroke mimics presented no difference, being 17% in the pre RACE period and 16.30% in the post RACE period. It was observed a decrease in the mean of the times analyzed. In the case of time since symptoms start until the HUGTP arrival the difference was not statistically significant ($p < 0.163$), whilst it was in the time from the start of the support until HUGTP arrival ($p < 0.001$).

Conclusions: The project has helped to increase the number of activations made by TTS. Increased activations have not affected the number of "stroke mimics". Attendance times did not increase, and the time depending on the performance of the technicians has decreased significantly. The valuation of the project by technicians has been very positive.

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PREHOSPITAL DIFFERENCES BETWEEN PATIENTS WITH ISCHEMIC AND HEMORRHAGIC STROKES

Alex Troncoso (1), Brian Walsh (1)

1. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: briwalsh10@aol.com

Keywords: Stroke, EMS, Prehospital

Background: Paramedics frequently evaluate and treat patients with suspected cerebrovascular accidents (CVAs). It is difficult to tell which of these patients have hemorrhagic strokes and which have ischemic strokes. Being able to differentiate between these diagnoses would help paramedics and physicians determine the best initial

management of these patients. We sought to determine if there were differences noted in the prehospital setting between patients with hemorrhagic and ischemic strokes.

Methods: Design: Retrospective cohort. Setting: A large, suburban, hospital-based EMS system. Protocol: The prehospital and emergency department records of all patients for which paramedics were dispatched for "Stroke" over a three-year period were reviewed. Based on the emergency department records, patient were categorized as having either ischemic CVA, hemorrhagic CVA or "other." Only patients with ischemic or hemorrhagic CVAs were included in the study. Using the prehospital records, demographics, blood pressures, heart rates, and rates of intubation were measured for the two groups. Difference between groups and 95% confidence intervals (CI) were calculated.

Results: Of 10,847 ALS dispatches, 449 (4.1%) were dispatched as "Stroke." Of these, 250 (56%) were diagnosed with a CVA in the ED. Of the 250 CVAs, 223 (89%) were ischemic and 27 (11%) were hemorrhagic. There were no age or gender differences between the two groups, and the average heart rates between the two groups were similar. The average blood pressure in the ischemic CVA group was 149/81 versus 166/93 in the hemorrhagic group (Systolic difference=17; CI: 5, 29; Diastolic difference= 12; CI: 5, 19). The rate of intubation in the ischemic CVA group was 2% compared to 11% in the hemorrhagic CVA group (Difference=9%, CI: 3, 16).

Conclusions: Compared to patients with ischemic CVAs, patients with hemorrhagic CVAs tend to have higher systolic and diastolic blood pressures and higher rates of intubation in the prehospital setting. These characteristics may help guide providers in the management of patients before a definitive diagnosis is made.

Po-614

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GERIATRIC PATIENTS ARE LESS LIKELY TO RECEIVE NITROGLYCERIN PREHOSPITALLY FOR POSSIBLE CARDIAC SYMPTOMS

Michael Silverman (1), Brian Walsh (1)

1. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: briwalsh10@aol.com

Keywords: EMS, Nitroglycerin, Cardiac

Study Objective: As the population ages, it is expected that there will be an increasing use of prehospital services by the geriatric population. Anecdotally, elderly patients often get treated differently than younger patients with the same illness – possibly because of an unclear diagnosis, concerns about medication side effects, or other reasons. We hypothesized that there would be an under-utilization of nitroglycerin (NTG) in prehospital cardiac transports.

Methods: Design: Retrospective cohort study. Setting: A large, suburban, two-tiered EMS system with approximately

25,000 Advanced Life Support (ALS) requests per year. Participants: Consecutive patients dispatched as "cardiac" and transported with ALS over a 2-year period. Protocol: We compared the use of NTG in ALS patients between 40 and 64 years of age versus those 65 years of age and older. The proportion of patients given NTG in each age group was determined and differences with 95% confidence intervals (CI) were calculated between groups.

Results: Of 5,086 EMS transports dispatched as "cardiac," 1,928 were for patients 40-64 years old and 2,756 were for patients 65 years and older. In the younger category, the average age was 52.0 years and 53% were male. In the older category, the average age was 80.2 years and 49% were male. There were no differences between blood pressure or heart rate between the two groups. The percent of patients in the younger category who received nitroglycerin was 36.3% compared with 29.5% in the older category (Difference =7%; CI: 2, 10; p<0.05).

Conclusions: In the prehospital setting, the geriatric population is less likely to be treated with nitroglycerin for cardiac dispatches than younger patients, despite similar vital signs. The reason for this discrepancy is unclear. Further studies should be done to determine if appropriate treatments are being used in this population.

Po-615

Hall Accueil Expo poster area

ETHICS, WITHHOLDING AND WITHDRAWING TREATMENT IN PRE-HOSPITAL MEDICINE OF ELDERLY PATIENTS.

Arnaud Delahaye (1), Audrey Saulnier (2)

1. emergency department, Hôpital Jacques Puel, Rodez, France
2. emergency department, Hôpital Purpan, Toulouse, France

Corresponding author: audreysaulnier@hotmail.fr

Keywords: withdrawal, elderly people, emergency medicine

Introduction:

The aging population has increased the number of resuscitations in pre-hospital to elderly subjects. This is why; we sought to conduct an audit concerning this question of pre-hospital and especially on the limitations and stopping treatment for this population.

Materials and Methods :

The survey was carried out by a computerized questionnaire sent to emergency practitioners of 32 University Medical Center in France. It focused on the experiences of doctors and practice of withholding and withdrawing of treatment for patients over 75 years. 259 responses were collected.

Results :

The main decision criteria were previous autonomy of the patient (96.4%), history (96.1%), the prognosis of the background disease(96.8%), the opinion of the family (93.7%) and age (64.4%). 89% of physicians feel supported in their decision making. 206 doctors do not limit themselves to non-invasive ventilation (which is a good

compromise for resuscitation wait). The orotracheal intubation (84.6%), the use of catecholamines (56.9%) and external cardiac massage (31.1%) are invasive procedures in which doctors say to limit themselves . 180 doctors have already made resuscitation to a possible situation of organ donors. 59% think they have already made unreasonable obstinacy independently of the initial training. 77.5% consider the pre-hospital's regulator as a second medical opinion for the decision making.

Conclusion:

It is essential to generalize advance directives and to work on specific legislation to extra hospital emergency medicine.

Po-616

Hall Accueil Expo poster area

APPLICATION OF STANDARDIZED NURSE LANGUAGE IN PREHOSPITAL EMERGENCY CARE.

Silvia Membrado (1), Vicenç Ferres (1), Elena Castro (1), Francesc Xavier Jimenez (2)

1. Emergency Care Unit, SISTEMA D'EMERGÈNCIES MÈDIQUES, Barcelona, Spain
2. Emergency departement, SISTEMA D'EMERGÈNCIES MÈDIQUES, Barcelona, Spain

Corresponding author: silviamebrado@gencat.cat

Keywords: NANDA (North American Nursing Diagnosis Association), NIC Interventions (Nursing Intervention Classification), PRE-HOSPITAL CARE

Introduction:

The update of the Guidelines for Action in the prehospital emergencies care passes for include a nursing model through a standardized language based on the diagnostic taxonomy NANDA (North American Nursing Diagnosis Association), NIC Interventions (Nursing Intervention Classification) and results NOC (Nursing Outcomes) as a structural part of these procedures.

It has implemented the identification of diagnostic, collaboration problems and interventions based on the theoretical model of clinical practice Bifocal by JL Carpenito. Keywords: NANDA nursing diagnoses, NIC interventions, prehospital care.

Objectives:

Identify NANDA diagnoses, and collaborative problems Interventions NIC.

Describe socio demographic characteristics of the sample.

Methods:

Descriptive observational study during three months in 2012 at prehospital Emergency Care Unit, include 214 patients, review of nursing practice guidelines and constructing an "ad hoc" instrument for data collection under expert consensus for NANDA diagnoses logging, collaboration problems and nursing interventions for each patient and further analysis.

Results:

NANDA nursing diagnoses of 216 (2012-14), identified 15 autonomous role prevailing: risk of falls (76.17%),

discomfort (75.70%), risk of vascular trauma (54.21%), risk imbalance in body temperature (28.04%), risk of aspiration (20.09%) and 44 collaborative problems prevailing: acute pain (49.07%), impaired gas exchange (38.32%), pattern Ineffective breathing (34.11%), impaired spontaneous ventilation (33.64%), risk for activity intolerance (33.64%), decreased risk of cardiac tissue perfusion ineffective (31.78%) and activity intolerance (31.31%). 543 NIC interventions are applied 129.

Conclusions:

After literature review identified in pre-hospital care, a void on the subject. The results could provide information to advance the field of nursing care in the prehospital setting, adding to other researchers.

Po-617

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RÉAC REGISTRY EPIDEMIOLOGICAL DATA: CLINICAL EXPERIENCE FROM THE BATAILLON DE MARINS POMPIERS DE MARSEILLE.

Céline Brun, Marc Blanchard, Patrick Benner, Charlotte Debeaume, Cécile Deniel, Jacques Marchi, Pascal Menot, Annelise Pradel, Daniel Meyran, François Topin

Prehospital emergency, Bataillon de Marins Pompiers de Marseille, Marseille, France

Corresponding author: celinebrun1@free.fr

Keywords: RéAC registry, cardiac arrest, epidemiological

Introduction

Every month, our Pre-hospital Emergency Unit takes care of twenty to thirty patients for cardiac arrest. Most of them die despite an optimal management. The ones who survive can be rapidly taken to a coronarography or Intensive care Unit.

Patients and Methods

Ongoing prospective study beginning January, 1st, 2013. A standardized data sheet is fulfilled for each patient suffering from cardiac arrest. All the data are then collected in the national RéAC Registry (National Registry on Cardiac Arrest).

Results

Eighty people presented cardiac arrest since the beginning of the study, mainly males (63% cases). Mean age was 74 years old (Median 78 years old). Ninety-five percent of the patients suffered from non-traumatic cardiac arrest, happening at home. Emergency Unit is usually called by the family. Half of the patients had basic cardiac arrest management before Emergency unit arrival.

Paramedics were on site after a mean time of 9 minutes, medical team after a mean time of 17 minutes.

Cardiac arrest management was performed by the Emergency Unit in 2/3 of the cases, for a mean time of 29 minutes. Asystole was observed in 88% cases, ventricular tachycardia or fibrillation in 3% cases.

Conclusion

Despite an optimal management, emergency units usually don't resuscitate the patient. While waiting for their arrival, relatives could improve the outcome by performing basic cardiac arrest procedures. However, our preliminary data clearly show the lack of knowledge of such procedures in about 50% of the population.

Po-618

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WHEN PREHOSPITAL ECG LEADS IN WRONG DIRECTION-SUBARACHNOID HEMORRHAGE MISDIAGNOSED AS AN ACUTE ST ELEVATION MYOCARDIAL INFARCTION

Jankovic Dusica (1), Ivana Jovanovic (1), Tatjana Rajkovic (1), Ignjatijevic Sasa (1), Marina Zdravkovic (2), Dzelabdzic Zvonko (3)

1. Emergency department, EMS Nis, Nis, Bosnia and Herzegovina

2. Department of Anesthesia, Intensive Care and Pain Therapy, Klinikum Bremen Ost,, Bremen, Germany

3. neurosurgery, Neurosurgery clinic nis, Nis, Bosnia and Herzegovina

Corresponding author: draspirinix@gmail.com

Keywords: ECG, SAH, STEMI

Background: A physician in the field meets a number of challenges. The real goal of stabilization of critical patients is adequate primary treatment. Diagnosis is based on knowledge and experience of physicians, and is conditioned by a lack of time and minimal diagnostic resources. When a physician meets the patient with electro-cardiograms showing ST segment elevation, hemodynamic instability and altered consciousness, there is a tendency to misdiagnose as acute myocardial in-farction. The patient will be treated according to the protocol with multiple antiplatelet and anti-coagulate agents even with pre-hospital fibrinolysis which can cause harmful effects. Furthermore, delaying ac-curate diagnosis may result in catastrophic outcome.

Case: EMS team received a call for 52-year-old female. She was a judge and she felt sick at the courtroom toilet. The patient presented was with the loss of consciousness. She was previously healthy and had no symp-toms. On arrival of EMS team, she was drowsy and her blood pressure was 80/0 mmHg, pulse rate 90/min, respiratory rate 6-12/min and blood sugar was 11,6. There was no head trauma, cardiac murmur or abnormal respiration sound. Elec-trocardiogram at the site presented ST segment elevation in lead I, a VL, V6 and depression of 1-3mm in III and a VF. We set up an intravenous line and started fluid replacement. During the transportation level of consciousness was partially recovered and she could respond to questions quite slowly. Assuming acute myocardial infarction with ST elevation, we transported her to coronary unit for emergency coronary angiography and primary PCI where she was admitted immediately. ECG is changing in the next 20 minutes and ST elevation passes

into ST depression. Cardiac bio markers of heart damage (troponin, creatine kinase) are only very slightly elevated. Echocardiogram exhibited hypokinesia of medioapical part of septum, inferior, posterior, and lateral wall. At the apex of the left ventricle shows thrombus, measuring 16x21mm. Left ventricular ejection fraction was 30%. Cardiologist set doubts on Takotsubo cardiomyopathy. Patient became stuporous and started vomiting. Computed tomography was recommended immediately, and a large amount of subarachnoid hemorrhage was found out. Upon cerebral angiographic computed tomography, a large saccular aneurysm in the basilar artery area was detected with a maximum free lumen 7.5 x 8.5mm. Micro catheters were selectively placed in the lumen of the aneurysm, and the aneurysm was then excluded from the circulation by placing micro spiral. The patient was discharged in 30 days without any neurological sequel.

Conclusion: It has been reported that abnormalities of electrocardiography, echocardiography and serum cardiac specific markers are associated with cerebrovascular disease. The most common cause is subarachnoid hemorrhage. It is well known that stress induced cardiomyopathy may develop by a cerebrovascular accident, but typical ST elevation is rare. By reporting this case, we wish to share our uncommon experience and hope that it may be helpful in future cases.

Po-619

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EVALUATION OF MORBIDITY AND USAGE OF HEALTH CARE SERVICES BY NON-TRANSPORTED EMS-PATIENTS

Tennilä Arto (1), Räsänen Pirjo (2), Boyd James (1), Rantanen Esa (3), Porthan Kari (3), Määttä Teuvo (1), Laiho Mia (4), Salminen Johannes (5), Kuisma Markku (1)

1. HUCS Emergency Medical Services, Hospital District of Helsinki and Uusimaa, Finland
2. External Evaluation Unit, Hospital District of Helsinki and Uusimaa, Finland
3. Emergency Medical Services, Helsinki City Rescue Department, Helsinki, Finland
4. Helsinki Emergency Services, Helsinki, Finland
5. IT Management, Hospital District of Helsinki and Uusimaa, Finland

Corresponding author: arto.tennila@hus.fi

Keywords: emergency medicine, ambulance, morbidity

Evaluation of morbidity and usage of health care services by non-transported EMS-patients

Tennilä A, Boyd J, Räsänen P*, Porthan K**, Rantanen E**, Määttä T, Laiho MK***, Salminen J****, Kuisma M

Hospital District of Helsinki and Uusimaa

*External Evaluation Unit, Hospital District of Helsinki and Uusimaa

**Helsinki City Rescue Department

*** Helsinki Emergency Services

****IT Management, Hospital District of Helsinki and Uusimaa

Topic.prehospital

Keywords.emergency medicine, ambulance, morbidity

Background:

Annually approximately 37% of emergency ambulance calls in Helsinki emergency medical services (EMS) are concluded to non-transport decision. According to clinical experience non-transport decisions have been estimated to be safe and also economically beneficial. However, it is not known what proportion of non-transported patients use other health care services soon after emergency call.

Helsinki Dispatching Centre serves the capital city of Helsinki (population 588 500). Dispatching centre prioritizes emergency medical calls into 4 urgency categories from A to D. In this study, we analysed category A, B and C calls concluded to non-transport decision. EMS system provided by Rescue Department consists of 8 basic life support (BLS) ambulances which are manned by emergency medical technicians (EMTs), 3 advanced life support (ALS) ambulances manned with paramedics and one medical supervisor unit. One physician staffed mobile intensive care unit (MICU) serves 24/7.

Objectives:

The aim of this study was to analyse morbidity and usage of health care services by non-transported EMS-patients. In this study we analysed admissions of non-transported patients to primary, secondary and tertiary health care services in 5 days after EMS call.

Methods:

This study was a retrospective observational cohort-study. EMS data was collected with electronic patient reporting system Merlot Medi and the list of non-transported patients was compared with electronic patient data collected from electronic patient reporting systems of Helsinki University Hospital and Helsinki City Hospitals. Patients, who were not transported by EMS, were included. Patients who refused to be transported by ambulance, patients who died on the scene and patients who were transported by other vehicles than ambulance, were excluded.

Results:

Overall 14,697 ambulance calls with correctly identified patients were observed in 1.1.-31.6.2011. Of them, 9721 (63,1%) patients were transported to emergency departments and 5420 (36,9%) non-transported. 973 patients were excluded (patients who refused from transportation, transported some other way). Finally, 4447 patients mean age of 52yrs (male 2156, female 2291) were included into the study for analysis. Overall 902 (20,3%) of these 4447 patients were registered to other health care services in 5 days period after emergency call; 335 (7,5%) to primary health care units (local health care centres) and 333 (7,5%) to secondary health care units (city hospitals emergency departments). 234 (5,3%) were treated in tertiary university hospitals and 96 (2,2%) used both, secondary and tertiary services.

Mean age of patients in primary and secondary units was 59yrs and 48yrs in tertiary units. 46 patients of 668 (7,2%) in primary and secondary services were admitted to ward

and 134 of 234 (57,5%) in tertiary services, respectively. Children from 0 to 6 yrs of age used other services after emergency call in 25,6% of cases, children from 7 to 15 yrs in 19,2%, adults from 16 to 74 yrs in 18,9% and elderly than 75 yrs of age in 20,1% of cases. If patient was met by ALS unit, services was used in 21,2% of cases and if by BLS unit, in 19,3%, respectively. If EMS unit contacted on-line medical control about transportation decision, 13% of patients used other services. If on-line medical control was not contacted, percentage was 11,7%. Pa-tients, who were left alone without non-professional surveillance after emergency call, used health care services in 265 cases out of 1170 (22,6%). If patients had surveillance, they used services in 544 cases out of 2805 (19,4%).

Conclusions:

Eight out of ten non-transported patients did not use any health care services in 5 days period after the emergency call. It is concluded that EMS can safely and effectively recognise pa-tients who have no need for immediate ambulance transportation.

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Hall Accueil Expo poster area

MORTALITY OF NON-TRANSPORTED EMS PATIENTS

Tennilä Arto (1), Räsänen Pirjo (2), Boyd James (1), Rantanen Esa (3), Porthan Kari (3), Määttä Teuvo (1), Laiho Mia (4), Salminen Johannes (5), Kuisma Markku (1)

1. HUCS Emergency Medical Services, Hospital District of Helsinki and Uusimaa, Finland
2. External Evaluation Unit, Hospital District of Helsinki and Uusimaa, Finland
3. Emergency Medical Services, Helsinki City Rescue Department, Helsinki, Finland
4. Helsinki Emergency Services, Helsinki, Finland
5. IT Management, Hospital District of Helsinki and Uusimaa, Finland

Corresponding author: arto.tennila@hus.fi

Keywords: emergency medicine, ambulance, mortality

Mortality of non-transported EMS patients

Tennilä A, Räsänen P*, Boyd J, Porthan K**, Rantanen E**, Määttä T, Laiho M***, Salminen J****, Kuisma M
Hospital District of Helsinki and Uusimaa

*External Evaluation Unit, Hospital District of Helsinki and Uusimaa

**Helsinki City Rescue Department

***Helsinki Emergency Services

****IT Management, Hospital District of Helsinki and Uusimaa

Topic: prehospital

Keywords: emergency medicine, ambulance, mortality

Background:

Annually approximately 37% of emergency ambulance calls in Helsinki emergency medical services (EMS) are concluded to a non-transport decision. According to clinical experience

non-transport decisions have been estimated to be safe and also economically beneficial. However, mortality of non-transported patients after call has not been studied.

Helsinki Dispatching Centre serves the capital city of Helsinki (population 588 500). Dispatching centre prioritizes emergency medical calls into 4 urgency categories from A to D. In this study, we analysed category A, B and C calls concluded to a non-transport decision. EMS system provided by Rescue Department consists of 8 basic life support (BLS) ambulances which are manned by emergency medical technicians (EMTs), 3 advanced life support (ALS) ambulances manned with paramedics and one medical supervisor unit. One physician staffed mobile intensive care unit (MICU) serves on 24/7 basis.

Objectives:

The aim of this study was to analyse mortality of non-transported EMS patients in period of 30 days after the ambulance call.

Methods:

This study was a retrospective observational cohort study. EMS data was collected with electronic patient reporting system Merlot Medi and the list of non-transported patients was compared with electronic patient data systems of Population Register Centre of Finland.

Patients, who were not transported by EMS, were included. Patients who refused to be transported by ambulance, patients who died on the scene and patients who were transported by other vehicles than ambulance, were excluded.

Results:

Overall 14,697 ambulance calls with correctly identified patients were observed in 1.1.-31.6.2011. Of them, 9721 (63,1%) patients were transported to emergency departments and 5420 (36,9%) were non-transported. 973 non-transported patients were excluded (patients who refused from transportation, died on the scene, transported by an alternative way). Overall 30-day mortality of non-transported patients was 1,2% (55 of 4447). For comparison, 30-day mortality of all transported patients was 4,5%. From 55 originally non-transported patients 13 (23,6%) called again to Dispatching Centre in next 48 hours after the first call. One of these 13 patients died on the scene, the rest 12 were transported to hospital by EMS.

Overall 902 (20,3%) of 4447 non-transported patients were registered to other health care services in 5 days after emergency call. 30-day mortality of 668 patients registered to primary and secondary health care services (local health care centres, city hospitals) was 3,9%, and mortality of 234 patients treated in tertiary university hospitals was 4,3%. Mortality of patients who did not register to any health care services after emergency call, was 0,5%.

Mortality of patients capable to walk at the moment on non-transport decision, was 0,8%, whereas mortality of patients incapable to walk was 5,7%.

Conclusions:

Non-transportation decisions are associated with low overall 30-day mortality. However, mortality of non-transported patients incapable to walk was higher than mortality of transported patients. Therefore the non-

transportation decision of patients incapable to walk should be made with special attention to patient safety.

Po-621

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NON TRAUMATIC CHEST PAINS: A MEDICAL REGULATION SCORE FOR ACUTE CORONARY HEART DISEASES.

Alban Privat, Thomas Aubert, Cyril Corrado, Wissem Mrabet, Ludovic Sauvage, Thomas Persico, Fanny Virard, Stéphane Bourgeois

SAMU 84/Emergency department, Centre Hospitalier d'Avignon, France

Corresponding author: privatalban@yahoo.fr

Keywords: chest pain, medical regulation score, call center

Background:

The medical regulation of the chest pain is one of the activities of Call center, centre 15. Responses of the doctor can vary from advice to send an Mobile Intensive Care Unit(MICU) with a physician on board. Scoring methods have been developed to identify Acute Coronary Syndromes (ACS) but not in calling regulation. Our study is based on the search of anamnesis elements compatible with ACS and every types of angor that we named acute coronary heart diseases (ACHD).

Methods:

This prospective and uni center study is based on data collected between April and July 2012 from 200 callings for non traumatic chest pains on SAMU 84 Call Center. Semeiological elements (pain characteristics, cardiovascular risk factors, clinical probability, associated signs) were collected on Day 1. 15 days later, we looked for the diagnosis in the hospitalization reports or, for 35 cases, we phone to the family practitioner or to the patients. We searched the prognostic signs of coronary heart disease by uni variate ($p < 0.10$) and multi variate analysis. A logistic regression model gave us the final value of the acute coronary heart disease score.

Results:

The ACHD score was derived from five variables: more than one cardiovascular risk factors (OR 7.61; IC95[1.5-39.8]), typical chest pain (OR 5.44; IC95[2.2-13.7]), nitrates prescription (OR 4.64; IC95 1.2-17.7), high clinical probability (up to 6 on a numeric scale from 0 to 10) (OR 5.16; IC95[2.2-11.9] and sweat (OR 2.74; IC95[1.2-6.5]) and are respectively noted 4,3,3,3,2 in the ACHD score.

Discussion:

We gave priority to ACHD instead of ACS, that saves the regulation from losing sensibility. Our score has the advantage to gather elements of ischemic coronary physio pathology (cumulative cardiovascular risk factors, nitrates and unstable ischemic heart disease non treated by invasive methods) and simple elements (typical chest pain) and the feeling of the doctor during the first call.

Conclusion:

This score, based only on history of the chest pain need to be validated. A study is in progress. This types of scores must help the doctor to send the right assistance to the patient to access to the right care. Besides that optimizes the use of Mobile Intensive Care Units.

Po-622

Hall Accueil Expo poster area

PROBLEMS ENCOUNTERED BY VOLUNTEERS ASSISTING THE RELIEF EFFORTS IN "VAN" AND THE SURROUNDING EARTHQUAKE AREA

Tarık Ocak (1), Arif Duran (1), Taşkın Özdeğir (2), Cüneyt Hocagil (3), Abdulkadir Küçükbayrak (1)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

2. Department of Forensic Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

3. Department of Emergency Medicine, Ministry of Health, Marmara University, Pendik Training and Research, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Earthquake, Volunteer, Needs, Disaster Area, Job Definition

Purpose: In this study, we aimed to identify the difficulties encountered by the health teams and personnel working as volunteers or on assignment in the earthquake area, and to identify their experiences and recommendations regarding the earthquake disaster.

Materials and Methods: This study was conducted in October and November 2011 in Van and the surrounding region with individuals, mainly health personnel, who arrived in the city as volunteers or on assignment to assist the relief efforts. The study was conducted as these individuals carried out their duties. Face-to-face interviews were conducted with volunteers and personnel who accepted to complete the questionnaires, and it was ensured that the questionnaires were completed as necessary.

Results: A total of 168 persons were included in the study. The mean age of these individuals was calculated as 31±8 (age range 17–56). Of the participants, 74 (44%) arrived in the city or the surrounding area as part of their official assignment, while 94 (56%) arrived as volunteers. During the study, 77 (46%) of the individuals experienced a health problem on at least one occasion. In the disaster area, a job definition could be identified for 74% of the participants.

Conclusion: The job definitions, the required materials, and working times should be pre-determined and rotated according to a shift system. We believe that this will allow for relief efforts to be conducted more effectively.

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RELEVANCE OF FORENSIC INVESTIGATIONS FOR UNNATURAL PRE-HOSPITAL DEATHS.

Laetitia Labastire (1), Jacques Marchi (2), Maica Gimmig (2), Audrey Revol (2), Francois Topin (2)

1. 13, Bataillon de Marins Pompiers, marseille, France

2. 13, Bataillon de marins pompiers, marseille, France

Corresponding author: Laetisse2000@yahoo.fr

Keywords: Relevance of the european recommendation on the harmonization of medico-legal autopsy rules, Medico-legal investigations upon sudden deaths, Out of hospital sudden deaths and autopsy rules: what practice?

Introduction:

In a situation of unexpected and sudden death, the pratician can judge that additional investigations are necessary; legal authorities should then be warned. Up to what point are these investigations necessary ? Are they in agreement with the R99 european recommendation ?

Method:

A retrospective study of 467 out of hospital sudden deaths was made.

Was the R99 , recommendation of the comittee of ministers to the member states on the harmonization of the medico-legal autopsy rules, followed ?

Results

60% of patients are men, median âge 67,8 years old.

The main residence (including old peoples'home) is the principal place of medical care (84%);the public highway and places account for 11% of cases.

These sudden deaths occur primarely in medical situations (80%),seldom in a context of suicide (6%);in 8% the circomstances are unknown.

In 103 cases,the doctor judges advisedly that medico legal investigations are necessary : generally within the framework of an unexpected death (50%) but also in an accident (19%) or a suicide (17%).

For 89 patients the legal authorities are not notified while they should have been, mainly in a context of sudden death (83%).

Conclusion

The R99 european recommendation is imperfectly applied by our practitionners, by ignorance for most of them.

It will then be the subject of recalls during in-house training in order to apply the european recommendation and so harmonize our practices.

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CHEST PAIN: ALWAYS A CARDIAC PROBLEM?

Diana Harambas (1), Anghel Paul Slavu (1), Claudia Ciora (1), Denisa Falamas (2), Marius Smarandoiu (1), Daniela Taran (2)

1. Emergency department, SMURD Sibiu, Sibiu, Romania

2. Emergency department, UPU-SMURD Sibiu, Sibiu, Romania

Corresponding author: dianadiddlina@yahoo.com

Keywords: Chest pain, Shortness of breath, Myocardial infarction

Background

During the last two years, SMURD (Mobile Emergency Service for Resuscitation and Extrication) Sibiu MICU was sent to an important number of cardiac related cases reported as chest pain and/or shortness of breath.

Although chest pain and shortness of breath can be the projection of acute or chronic illnesses, they will always initially be regarded as a possible critical event, such as acute coronary syndrome, because of the frequent life threatening hazard. Acute cardiac-related situations require more elaborated actions, fast diagnosis and proper management. MICU should rapidly evaluate and decide the need of transferring the patient from the local hospital to a tertiary care facility (in case PCI is needed).

The aims of the study are to find out whether these symptoms were initially properly assessed as consequences of an acute cardiac cause; to analyze the medical course of acute cardiac related cases and to identify problems encountered in order to standardize and optimize procedures for these critical situations.

Methods

Data was obtained from SMURD Sibiu medical database, for a period of 2 years, between 01.01.2011 and 31.12.2012. Out of 2922 alerts dispatched to ICU ambulance, selection was done against possible cardiac cases. Information as diagnosis, patient clinical evolution and following treatment was investigated. Cases being transferred to another hospital were also counted and investigated.

Results

From a total of 420 selected cases (chest pain-246 and shortness of breath-174), 117 were Myocardial infarction (MI), 123 were Angina Pectoris, 35 were Pulmonary edema and 145 other medical cases.

Following patients clinical evolution with AMI: 29-improved, 77-stationery, 3-aggravated and 8 patients suffered cardiac arrest on the way to the hospital and died, although CPR and ALS were performed. 69 patients were transferred to the nearest Public Cardiovascular Surgery Clinic for PCI (per-cutaneous coronary intervention). The rest, including those with Pulmonary edema, were admitted to Sibiu Clinical Emergency Hospital.

Conclusions

Patients do not always present themselves as having chest pain and shortness of breath. These are subjective symptoms that are described by patients in various ways, depending of cultural and educational background. Dispatchers should be aware of all this and address targeted questions.

Efforts should be focused on population's medical education in order to better understand, identify and characterize these symptoms.

The necessity of a local center where primary PCI can be performed is imperious and is obviously going to positively influence the outcome of MI patients.

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EMS PERSONNEL RESPONSE: BETWEEN EMOTIONS AND EXPERIENCE. A NATIONAL STUDY

Alin Canciu (1), Denisa Falamas (1), Petre Iliovici (2), Marius Smarandoiu (1), Remus Ivan (3)

1. Emergency department, SMURD, Sibiu, Romania

2. Statistics, ULBS, Sibiu, Romania

3. ISU Sibiu, ambulance driver and paramedic, Sibiu, Romania

Corresponding author: mariussibiu@yahoo.com

Keywords: Reaction time, SMURD EMS, response pattern

Background

The work of Romanian SMURD EMS (Mobile Emergency Service for Resuscitation and Extrication) is highly dependent on the gravity of a call: the more critical a patient, the shorter the time of reaction is. When dealing with an unusual situation or a critical patient, the rescuers push their boundaries furthermore to ensure a good outcome of the situation. Experience has taught us that not all critical reported emergencies are indeed life threatening thus leading in developing an adapted response pattern dependent on the type of the call. The goal of this national study is to identify the emergency priority scale of SMURD teams based on reaction time.

Methods

Statistical analysis of SMURD national database (589873 cases) on a period of 3 years (2010 - 2012), out of which the average EMS time of response was calculated for different pathologies attended, time intervals and type of ambulances.

Results

Rescue teams all over the country speed their way to an emergency such as road accidents and other traumatic injuries, but have a slower response for calls like unconsciousness and respiratory failure. This pattern is present irrespectively of other variables like type of EMS and time of the day.

Comparing the trends for different time intervals (day <> night) although the average speed tends to grow for trauma emergencies (49 km/h -> 59 km/h), for unconscious and respiratory failure cases the average speed falls (40 km/h -> 35 km/h).

When unconsciousness and respiratory failure alerts are associated with the possibility of a cardiac arrest (dispatched as "possible cardiac arrest"), the time response improves with 25%, although the prior hierarchy remains present.

Conclusions

When dealing with trauma, rescuers achieve a better time of response. Uncertainty and false emergency calls are more frequently encountered with unconsciousness, shortness of breath, this leading to a poorer reaction time.

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RETROSPECTIVE STUDY ABOUT THE CHARACTERISTICS AND THE BECOMING OF PATIENT TRANSPORTED BY FRENCH FIREMEN.

Benjamin Andre (1), Farès Moustafa (2), François Dissait (3), Nicolas Vincent (1), Jeannot Schmidt (2)

1. Emergency department, CHU Clermont-Ferrand, Clermont-ferrand, France

2. Emergency department, CHU Clermont-Ferrand, Clermont-Ferrand, France

3. Emergency department, CHUGabriel Montpied, Clermont-ferrand, France

Corresponding author: fmoustafa@chu-clermontferrand.fr

Keywords: regulation, firemen, pre-hospitalization care

Introduction:

Emergency medical care, instituted by the 1968 law, establishes pre-hospital patients sorting out with medical and technical means on the intervention sites. French firemen are more often the first one the scenes.

The aim is to study the regulation, the becoming, the seriousness and the rapidity of room patients 'care, transported by firemen.

Method:

It was a retrospective, monocentric study, over two consecutive week from May 23d 2011 to June 6th 2011. Were included, every patient, aged more than 16, admitted in the emergency room after being transported by firemen. Data is collected from regulation computerized files, administrative and medical emergency room files and firemen medical and intervention files.

Results:

Over 1898 admissions, 430 patients (22.6%) were included. 54% of patients were male and 46% were female. The middle age is 49 years old and with 284 patients being under 60 years old (66%).

Admission is for 335 patients (78%) between ten am and midnight. The firemen station is located less than 20km from our emergency room for 372 patients (86.5%). The middle waiting time between arrival in the emergency room and admission by nurses is 7'21". Regulation way is unknown for 214 patients (49.7%).

Traumatology cares concern 264 patients (40%) and psychiatric 103 patients (24%).

Following CCMU classification, 234 patients (54,4%) are considered stable, 143 (33%) instable, and 38 patients (8.8%) have a threatening vital prognosis. 213 patients (49%) are discharged home, 99 patients (23%) are discharged after a stay in the short duration hospitalization unit, and 118 patients (28%) are hospitalized.

Conclusion:

Detection of potentially serious patients is a priority in emergency medicine and falls under medical regulation. If patients transported by firemen benefit from a quick medical management, the proportion of serious patients stays important, almost 10% within transported victims.

A more systematic conference between medical and firemen regulation, and the patient is essential to maximize the pre-hospitalization care those patient.

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EXPEDITION MEDICINE; MEDICAL ACCOUNTS OF THE FIRST DOMINICAN EXPEDITION TO MOUNT EVEREST

Julio De Pena (1), Ana Gonell (2)

1. Emergency Medicine, University of Miami, Miami, United States
2. Emergency Medicine, Hospital General Plaza de la Salud, Santo Domingo, Dominican Republic

Corresponding author: jmdepena@gmail.com

Keywords: Expedition and Wilderness Medicine, Altitude Medicine, International travel

What does it take to be an expedition physician and provide medical care during travel to high altitudes? What medical supplies do you need? How do we prepare for remote travel? What types of injuries are more common? How do we evacuate in the event of serious injury?

High altitude, mountaineering, distant and remote travel, all pose a serious and potentially life-threatening stress on the human body and spirit, dehydration, stress, strenuous exercise and isolation from loved ones are among the toughest elements pressing upon those that venture into the most remote and austere environments know to humans.

Acute mountain sickness in its range of presentations are among the deadliest threats ever present, from minimal generalized weakness and fatigue to high altitude cerebral/pulmonary edema, from soft tissue injuries to most severe temperature injuries as frost bite, from respiratory infections to the most severe gastrointestinal illness and dehydration are all conspiring against mountaineers and trekkers along the Khumbu Valley on their way to climb to the highest elevations of the planet.

Let us journey together as we prepare for this expedition, and provide medical care to the First Dominican Expedition to the Top of the World...Mount Everest.

We will discuss how to prepare for remote travel, evaluating local and endemic diseases and how to prevent them, physical conditioning, vaccinations and pre-expedition medical evaluations.

Scouting, researching, localizing, gathering and safekeeping all documentation with the information necessary to allocate, if further needed, use of local resources such as hospitals, embassies, supplies, etc. all of this are part of the proper grounding prior to departure.

Preparation of the expedition medical kit is a key element to the success of the expedition, supplies needed and where to get them, quantities and how to pack and distribute supplies during the expedition, medical-legal implications when providing care abroad.

How to arrange, organize and execute the plan in case of an evacuation of an injured climber, resources needed for safe return home and post expedition medical evaluations and follow up.

A team physician is a key element in the welfare and safety of an expedition to extreme altitude and remote places, careful logistical groundwork of all aspects of the medical campaign will positively influence sense of security, group moral and overall overseeing the wellbeing of all team members.

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THE ADMINISTRATION OF ASPIRIN PREHOSPITALLY FOR PATIENTS DISPATCHED FOR CARDIAC CAUSES

Michael Silverman, Brian Walsh, Costas Kaiafas
Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: briwalsh10@aol.com

Keywords: Aspirin, EMS, Cardiac

Study Objective: The administration of aspirin is simple, safe and effective treatment for ischemic cardiac disease with very few contraindications. Because of its safety and efficacy, most providers agree it should be administered liberally whenever cardiac ischemia is being considered. We sought to determine the rate of aspirin administration prehospitally for patients dispatched for "cardiac" etiology and determine if the rate of administration is related to patient age.

Methods: Design: Retrospective cohort study. Setting: A large, suburban, two-tiered Emergency Medical Services (EMS) system with approximately 25,000 Advanced Life Support (ALS) requests per year. Participants: Consecutive patients dispatched as "cardiac" by the EMS Dispatcher and transported with ALS over a 2-year period. Protocol: We calculated the rate of aspirin administration for all patients 40 years old and older. Patients taking daily aspirin therapy were considered to have been given aspirin by ALS. We compared the administration of aspirin in patients between 40 and 64 years of age and those 65 years of age and older. The proportion of patients given ASA in each age group was determined and differences with 95% confidence intervals (CI) were calculated between groups.

Results: Of 5,086 EMS transports dispatched as "cardiac," 4,684 were for patients 40 years of age and older. The average age was 69.0 (CI: 68.5, 69.4) and 47% (CI 45, 48) were male. Less than half of all patients (45% (CI: 44, 47)) were administered aspirin or were on daily aspirin therapy. When broken down by age, there were 1,928 patients 40-64 years old and 2,756 patients 65 years and older. There were no differences between blood pressure or heart rate between the two groups. The percent of patients in the younger category who were administered or on daily aspirin was 43% compared with 47% in the older category (Difference = 4%; CI: 1, 7; p<0.05).

Conclusion: Overall, less than half of all patients dispatched for "cardiac" reasons receive aspirin prehospitally. Older patients were slightly more likely to get aspirin prior to arrival at the hospital, likely due to higher baseline daily

aspirin therapy. It is unclear how much of this overall low rate is due to inaccurate dispatch versus inadequacies of prehospital treatment.

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ASSOCIATION OF DRUG INTOXICATION AND NEUROPSYCHIATRIC HISTORY

Hojung Kim (1)

1. Emergency department, Soonchunhyang univ. bucheon hospital, bucheon, Korea, (South) Republic of

Corresponding author: lovelydr@schmc.ac.kr

Keywords: Drug, Depression, Intoxication

Purpose : The purpose of this study was to investigate the relationship between patients who has neuropsychiatric history and their features of suicide attempt, and to analyze the risk of their prescribed drug from psychiatrist

Methods : We investigated cases of intentional drug ingestion on patients greater than 14 years of age who visited OO emergency medical center for 2 years. We got the information about patients' age, sex, neuropsychiatric history, component of ingested material through medical record, retrospectively . And We got the information about reattempt or not for suicide, follow up after discharge through telephone survey. SPSS version 13.0 was used for statistical analysis. Fisher's exact test were performed, and a p<0.05 was considered to be statistically significant.

Results : Ninety-six of 209 patients (46%) have Psychologic past history. Among the patients who have psychologic history, 46 patients (48%) use their medicine prescribed from psychologist on suicide attempt. Otherwise, in patients who don't have psychologic history, Neuropsychiatric drug and hypnotics are of little impotence. Neuropsychiatric patients have significant difference in reattempt on suicide, follow up care after discharge, but have no difference in disposition of patients. Conclusion : This study show that patients easily use the medicine prescribed from psychologist to their suicide attempt. So, We have to establish exhaustive plan to control the medicine of patients prescribed from psychologist.

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NUTRITIONAL STATUS OF SCHIZOPHRENIC PATIENTS ATTENDING OUTPATIENT DEPARTMENT OF PSYCHIATRY IN DR.HASAN SADIKIN HOSPITAL

Lynna Lydiana (1), Tiara Aulia Maisyarah (2), Gaga Irawan Nugraha (3)

1. Department of Psychiatry, Dr. Hasan Sadikin Hospital, Bandung, Indonesia
2. Faculty of Medicine, Universitas Padjajaran, Bandung, Indonesia

3. Department of Nutritional Sciences, Dr. Hasan Sadikin Hospital, Bandung, Indonesia

Corresponding author: tiarongg@gmail.com

Keywords: Nutritional Status, Schizophrenia, Antipsychotic Drugs

Background: Nowadays, schizophrenia is associated with many health problems due to weight changes caused by lifestyle changes and consumption of antipsychotic drugs (APDs). Nutritional status assessment is needed in order to lower the comorbidity by early detection of risk factors.

Methods: This descriptive type of cross-sectional study involved 94 schizophrenic patients selected using consecutive sampling on October 2012. An anthropometric measurement was verified (body mass index and waist circumference), physical activity level, type of antipsychotic drugs (APDs) used and duration of treatment acquired from medical records.

Results: Among the subjects, 29.8% were aged 28–37 years old, with 69.1% were male and 30.9% female. Most of them were paranoid schizophrenia (71.3%). Body Mass Index of 46.8% subjects were normal, 45.74% were overweight, whereas 7.45% were underweight. Male subjects mostly had lower waist circumference result (78%) compared to female which were dominantly above normal (52%). Physical activity levels were mostly sedentary (76%). Single typical APDs were dominantly prescribed (46%). Subjects with normal Body Mass Index were mostly found among single typical APDs prescribers (53.5%), whereas the majority of atypical APDs users were overweight (61.9%). A total of 63% subjects had been prescribed APDs for 1–5 years, dominated by subjects with normal Body Mass Index (78%).

Discussion: The majority of study subjects (46.8%) were found normal in Body Mass Index. Male subject mostly had normal waist circumference (78%) while females were higher in risk whose measurement above normal were dominant (52%).

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PRECIPITATING FACTORS IN PATIENTS AT RISK OF AUTOLYSIS

Cristina Fernández-figares (1), Rafael Infantes-ramos (1), Iván Villar-mena (2), José Valero-roldan (1), Inmaculada López-leiva (1), Gemma Martínez-alonso (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain
2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Autolysis, Factors, Suicidal

Introduction / Background: Health problems, emotional problems and stressful economic problems based on social may be precipitating in patients at risk of autolysis

Objectives: To assess factors that influence or precipitate suicidal behavior.

Design: Descriptive cross-sectional, observational study.

Methodology:

Sample: 118 patients assisted at Carlos Haya Hospital emergency room for suicidal behavior in the first trimester of 2011 (precision=0.009; Alfa=0.05)

Instruments: medical records of patients, randomly chosen.

Statistical analysis: assessing the relationship between precipitating factors for suicidal behavior and suicidal purpose (SPSS. V15). Logistic regression analysis (dependent variable: purpose of the act)

Results:

113 valid entries Regarding the precipitating factor associated, 49.5% reported emotional causes, 24.7% economic and social problems and only 5.3% reported health issues.

Among patients who acted for sentimental reasons, 23.8% acted on impulse compared with 15.9% who planned the event with suicidal intention. In the patients with socio-economic problems occurred the opposite, 6.1% acted impulsively and 15% to schedule the event.

Conclusions:

Emotional factors have the most influence on the risk of autolysis followed by economic problems and work-related. The least influential are the health problems

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TREATMENT OF PSYCHIATRIC DISORDERS AND ORGANIC DISORDERS MIMIC PSYCHIATRIC DISEASES IN AN EMERGENCY DEPARTMENT - EXPERIENCES OF THE ONE-GATE SYSTEM

Zoltán Kákonyi (1), Zsuzsanna Erdélyi (1), Frigyes Rupp (1), István Szabó (1), Levente Zag (1)

1. Emergency Department, County Hospital of Kecskemét, Kecskemét, Hungary

Corresponding author: zoltan.kakonyi@gmail.com

Keywords: Emergency department, Psychiatric disorder, Physical restraint

Background:

In Hungary, patients enter hospitals through emergency departments (ED); it is called as "one-gate system". In this study, we examined the effects of the new system on the acute treatment, and differential diagnosis of psychiatric patients in our hospital.

Method:

Retrospective review of medical records of patients admitted to our ED due to mental disorder was performed. During the study period (01.01.2012-30.06.2012) 13226 patients visited our ED, 650 patients were admitted with psychiatric diagnosis.

Results:

Neurological (44%) or organic (56%) disorders were diagnosed in 115 cases in the background of psychopathologic symptoms. In 76 cases life-threatening disorders (heart disease, head injury, endocrine disorders, poisoning) were revealed in the background of these symptoms (delirium, panic, acute psychosis). 535 patients were observed in the ED due to psychiatric disorders: suicidal drug intoxication (40,6%), alcohol abuse (21%) or withdrawal syndrome (3%), dissociative disorder (14,3%), acute psychosis (11,3%), mood disorder (4,1%), drug abuse (2,7%). Physical restraint was applied in 101 cases mainly due to acute psychosis, acute intoxication, manic phase of bipolar affective disorder, behaviour disorder caused by alcohol or drug abuse or delirium. Types of medication used in the ED: Haloperidol-Diasepam iv. injection (80%), Midazolam iv. injection (15%), Propofol (5%) iv. injection. During physical restraint medical staff was injured in 15 cases and police actions were necessary in 3 cases. The average time between hospitalisation and physical restraints was 30 minutes. In 3 cases patients left the ED before or after treatment and police had to be involved to find them. We drew conclusions from these data about the connection between the staff's behaviour toward patients with psychopathological symptoms and the effectiveness of treatment. Impulsive actions were followed by adequate administration of medicines apart from etiology in 70% of cases, patients were transferred to a psychiatry department in 40%. In 3 % of cases our ED was not competent to treat the patients.

Conclusions:

In our ED, the main problems are the lack of change of behaviour which is necessary for the treatment of psychiatric patients and the lack of routine to act together as an effective team during physical restraint. We set up local protocol to solve these problems.

Summary:

Our ED has difficulty to cope with the treatment of acute psychosis therefore the treatment is insufficient. On the other hand, ED has essential rule in the differential diagnosis of mental confusion and other psychiatric disorders.

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INTERNET SEARCHES ON "STRESS" DECREASED IN NEW JERSEY AFTER HURRICANE SANDY

Christine Allegra (1), John Allegra (2)

1. School of Social Work, Rutgers University, New Brunswick, United States

2. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: jallegra@gmail.com

Keywords: Internet, stress, disaster

Study Objective: Some have advocated using the volume of internet searches to monitor public health problems. On October 29th, 2012 super storm Hurricane Sandy struck New Jersey causing devastating damage. We hypothesized that there would be higher rates of internet searches on "stress" associated with the storm as measured by Google Trends.

Methods: We conducted a Google Trends search with the term "stress" in New Jersey from October 15, 2012 until November 3, 2012. Google trends provide normalized volumes for a given search term by geographic area over a specified time. Data are displayed on a 0 to 100 scale, with 100 being the highest volume in any given search. We plotted the daily Google Trends for this time period. We calculated the means in Google Trends for the two weeks prior to the super storm (Oct 15th-Oct 28th) and for the day of the storm plus the five days after the storm (Oct 29th-Nov 3rd). We calculated the 95% confidence intervals (CI) of the difference in means and used the Student's t-test for statistical significance with alpha set at 0.05.

Results: There was a statistically significant decrease in the internet searches on "stress" for the day of the storm plus the five days after the storm: means for the two weeks prior to the storm, 75 and for day of the storm plus the five days after the storm, 49 (decrease = 26, 95% CI, 16 to 36, $p < 0.001$).

Conclusion: We found that internet searches for "stress" decreased the week of the super storm. We believe that this was due to power outages and lack of internet access. While monitoring internet searches has been suggested as a good method to track public health problems, monitoring internet searches during storms in areas with widespread power outages may not be useful.

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RETROSPECTIVE STUDY OF SUICIDE ATTEMPT PATIENTS IN EMERGENCY DEPARTMENT OF IASI COUNTY, ROMANIA

Anca Haisan (1), Oana Belehuz (2), Oana Corlat (2), Liliana Tataru (2), Ioana Lupusoru (3), Diana Cimpoiesu (1)

1. Emergency Medicine, UMF "Gr.T.Popa" Iasi, Iasi, Romania
2. Emergency Department, Clinical Emergency County Hospital "Sf.Spiridon" Iasi, Iasi, Romania
3. Pharmacology, UMF "Gr.T.Popa" Iasi, Iasi, Romania

Corresponding author: dcimpoiesu@yahoo.com

Keywords: Suicide risk, emergency, psychiatric behavior

Background: The suicide phenomenon is increasing all over the world for the last decade, being the thirteenth major cause of death worldwide. Data from WHO indicate that one million people worldwide die each year by suicide, corresponding to one death by suicide every 40 seconds. Suicide attempts and suicidal ideation appear to be 20 times higher than the number of deaths by suicide. There

are many factors involved in this particular behavior including age, gender, socio-economical status, religion affiliation, psychopathological aspects of patient and/or family, alcohol or drug addiction. Worth to mention that official statistics in Romania notice suicidal acts tripled in 2011 when comparing to 1990, reaching around 14,7 per 100 000. Even though Romania does not have a leading place in suicidal rates statistics, this high rising trend is alarming and needs to be considered. This dramatic decision of committing suicide represent in fact only the tip of an iceberg as there are no screening programs in place for determining high-risk individuals. The society and medical staff must recognize these psychiatric behaviors in patients before it is too late. Moreover, almost 8-12% of emergency medicine patients have suicidal ideation.

Aim: Our study analyzed the emergency department suicide attempt patients for one year in district with 724 000 inhabitants and depict the overall picture of suicide risk for the north-eastern area of Romania.

Material and methods: The current work studies suicide patients admitted to the Emergency Department (ED) of Saint Spiridon University Hospital of Iasi, Romania, during February 2012 and February 2013. In the retrospective study cohort of 269 patients, 57% were women, the most frequent age group was between 20- 39 (56%) while the rest of the decade groups were around 10%. In the study lot, almost half of victims lived in urban area. The most frequent ways of suicide attempts in decreasing order were medication abuse (77%), self inflicted wounds (16%), hangs (5%) and drug abuse 2%. 62% of the patients were intoxicated with alcohol in addition to the main cause. Among used pills for medication abuse, 47% were psychiatric drugs, while 48% of victims being previously diagnosed with mental depression.

In ED, 92% of suicide attempt patients had Coma Glasgow Scale less than 8, 8% were hemodynamically unstable (SBP<90 mmHg and FR>120 b/min), 32% had hypoglycemia and 3% were hypoxic (SaO₂<90%). Gastric lavage was performed on 70% of patients and active charcoal 1g per kg bodyweight was administered. The treatment included also hydration with NS and D 5%, B vitamins and proton pump inhibitors. The average time between ingestion and ED admission was between 1-4 hours for 66% of the patients. 53% were admitted to toxicology department and almost half of them (26%) needed intensive care. The surgical patients admission rate was 8% and 38% of total patients were sent to psychiatry directly without a need of somatic acute care.

It is important to mention that our study did not include victims who were found dead outside the hospital, as they were dealt by forensic medicine department. In suicidal deaths, 70% were by hanging, most of them being men.

Conclusions: The average suicide attempt patient in region of Iasi, Romania, is a young woman between 20-35years old, diagnosed with depression and under psychiatric treatment. The emergency department's medical personnel should be trained to recognize specific signs of persons at high risk of committing suicide and send them to specific department when necessary.

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Rez de Jardin poster area

IS THE CAT (COPD ASSESSMENT TEST) A USEFUL TOOL FOR EMERGENCY PROFESSIONALS?

Jone Amigo Angulo (1), Edurne Arteta Bilbao (2), Marisol Gallardo Rebollal (1), Susana Garcia Gutierrez (2), Teresa Ortega Ortega (1), Esther Pulido Herrero (1), Jose Maria Quintana Lopez (2), Mikel Sanchez Fernandez (1), Anette Unzurrunzaga (2)

1. Emergency Department, Hospital Galdakao-Usansolo, BILBAO, Spain

2. Research Unit, Hospital Galdakao-Usansolo, BILBAO, Spain

3. Emergency Department, Osakidetza, BILBAO, Spain

Corresponding author: esther.pulidoherrero@osakidetza.net

Keywords: exacerbation of COPD, cpod assessment test, health status of patients with COPD

INTRODUCTION: The CAT is a questionnaire, fast, simple and validated, completed by the patient, developed to measure the quality of life of patients with COPD in clinical practice. Their use, though not widespread, can be useful when making decisions in COPD exacerbations in the emergency views in cases where we do not have baseline FEV values.

OBJECTIVE: To determine CAT scores in patients treated for COPD exacerbation in the ED. Knowing if CAT scores are related to the admission decision.

METHODOLOGY. Prospective observational cohort study in which 166 patients were enrolled with exacerbation of COPD who have come to the emergency room of the hospital-Usansolo Galdakao November 2011 to September 2012. Sociodemographic and clinical episode of ER and hospital history at admission, at 15 days and up to two months after the episode of exacerbation. Patients were interviewed personally in the case of those admitted (107) and by telephone in the case of discharge (59) and completed the CAT QUESTIONNAIRE and other variables used by the patient before the crisis and during the crisis. The questionnaire was repeated at 15 days and two months after discharge / visit by telephone.

ANALYSIS: Categorical variables are expressed as frequencies and percentages and continuous variables as means and standard deviations. Continuous variables were compared using the t test and categorical Student by chi.cuadrado. Univariate analysis was performed to find out which variables and CAT scores could be related to the admission decision and a logistic regression model the dependent variable being the decision and independent income which reached statistical significance set at $p < 0.20$ in the univariate analysis. All analyzes were conducted in SAS v9.2 for Windows.

RESULTS: The mean age of the sample was 74.57 (10.77) years, have a mean baseline FEV 53.94 (19.41). The basal CAT score discharge 12.79 (9.07) in hospitalized of 16.01 (7.51), at the time of the crisis 19.91 (8.70) and 21.51 (7.65). Basal CAT score relates discharge decision or income ($p = 0.026$). Evolution healing in patients discharged from the ED and those admitted is related to the differences

between crisis-basal CAT scores , 15d-crisis CAT, and CAT 2m-crisis.

CONCLUSIONS: The basal CAT score seems to be useful in deciding admission in patients with exacerbation of EPOC.El CAT can detect improvements in the health status of patients with COPD associated with recovery of exacerbations. All data presented here belong to a research project funded by the Basque Government No. 2010111078 Exp.

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Rez de Jardin poster area

CLINICAL PROFILE OF PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT OF A GENERAL HOSPITAL FOR EXACERBATION OF COPD, WE DO WITH THEM IN OUR SERVICE AND OTHER CURIOSITIES.

Jone Amigo Angulo (1), Edurne Arteta Bilbao (2), Marisol Gallardo Rebollal (1), Susana Garcia Gutierrez (2), Oscar Aller García (1), Esther Pulido Herrero (1), Jose Maria Quintana Lopez (2), Mikel Sanchez Fernandez (1), Anette Unzurrunzaga (2)

1. Emergency Department, Hospital Galdakao-Usansolo, BILBAO, Spain

2. Research Unit, Hospital Galdakao-Usansolo, BILBAO, Spain

3. Emergency Department, Osakidetza, BILBAO, Spain

Corresponding author: esther.pulidoherrero@osakidetza.net

Keywords: exacerbation of COPD, cpod assessment test, FEV

INTRODUCTION: COPD is a highly prevalent disease in the Spanish population the EPI-SCAN recent study has established a prevalence of 10.2% for individuals between 40 and 80 years. Exacerbations are frequent and serious patients suffer from 1 to 4 episodes per year, one of the reasons for hospitalization in our environment, as well as admission to the emergency department. The new guidelines for the management of these patients and the recent GOLD GesEPOC basal classify COPD with spirometry not only but with the CAT (COPD Assessment Test), number of exacerbations per year and the MRC dyspnoea scale.

OBJECTIVES: To define the clinical profile of patients with exacerbation of COPD who attend our service. Analyze the prescribed treatment from our service, the final destination of the patient and poor outcome. CAT (COPD Assessment Test) and the MRC dyspnoea scale prior to the exacerbation and the exacerbation.

METHODOLOGY: Prospective observational study in which 172 patients were enrolled with exacerbation of COPD who have come to the emergency room of the hospital Usansolo Galdakao-November of 2011 to September of 2012.Se Sociodemographic and clinical and emergency episode hospital history at admission, at 15 days and up to two months after the episode of exacerbation. This study was supported by a grant from the Department of Health of the Basque Government No. 2010111078.Se obtained informed consent from all patients. Statistical analysis Categorical variables are expressed as frequencies and percentages and

continuous variables as means and standard deviations. All analyzes were conducted in SAS V9.2 for Windows.

RESULTS: Of the 172 patients enrolled: the 89.53% (154) were men with a mean age of 74.67 years, the 55.74% had a baseline FEV1 and severe or very severe. Comorbidities had diabetes on the 78.49% and heart disease on the 90.70%. They come to our emergency department for a mild exacerbation the 22.56%, 45.86% moderate and the severe or very severe 31.58%. Patients entered the 64.53% (111) and were discharged from the 35.47% (61). Ground admitted with 45.87% oxygen, aerosol 94.5%, 96.33% iv corticosteroids, antibiotic iv 84.40% and invasive mechanical ventilation or 10.09%. The 11.7 1% of admitted patients had a poor outcome. The MRC (dyspnea) of the 172 patients basal grade III is 41.46% and the exacerbation passing grade V 66.67%. The baseline score was 14.88 CAT and CAT in the exacerbation was 20.85%.

CONCLUSIONS: The profile of patients who come to our emergency room patient is a man of about 74 years with moderate to severe COPD basal and the new combined evaluation of COPD patients would be more symptomatic B or D, with significant comorbidities. Almost two thirds of patients are admitted due to exacerbation, which was moderate to severe in about 80%. All this information helps us to have a more complete view of COPD in our services and allows a better therapeutic approach.

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Rez de Jardin poster area

USE OF CPAP IN HYPOXEMIA SECONDARY TO NONFATAL DROWNING

Giuseppina Petrelli, Giancarlo Concetti, Isabella Di Zio, Filippo Tommaso Feliziani, Letizia Mattucci, Elisa Pingiotti, Paolo Groff

Emergency department, Madonna del Soccorso Hospital, San Benedetto del Tronto, Italy

Corresponding author: petrelligiusy@libero.it

Keywords: nonfatal drowning, hypoxemia, continuous positive airway pressure

Drowning is the cause of 0.7% of all deaths worldwide. For every person who dies from drowning, another four receive care in the emergency department (ED) for nonfatal drowning, with significant human and social costs. Patients with nonfatal drowning suffer a severe hypoxemia and metabolic acidosis secondary to massive damage of the alveolar capillary. Its increased permeability produces a reduction of gas exchange, for shunt effect as acute cardiogenic pulmonary edema (ACPE). The patient may develop cardiac arrhythmias or post-hypoxic encephalopathy, causing death or serious debilitating outcomes. The most effective treatment of severe hypoxia is the application of a positive pressure in the airways with CPAP or ETI. While the use of CPAP in ACPE is strongly recommended, at present evidence of efficacy is lacking for the use of this method in nonfatal drowning.

The aim of our study was to evaluate the early application of CPAP in acute respiratory failure secondary to nonfatal drowning.

Methods: We conducted a retrospective observational study on 10 consecutive patients related to our ED between June 2009 and March 2013 for nonfatal drowning in salt water, selected according to the following criteria: absence of contraindications for CPAP, severe hypoxemia, bilateral basilar crackles on auscultation, X-ray imaging of acute pulmonary edema. CPAP (Boussignac) was initiated early in ED, with a face mask at a FiO₂ of 80% and average PEEP of 10 cm H₂O, obtained by steps of 2 cm H₂O. All patients were given medical treatment at the discretion of the responsible physician. The following parameters were measured at presentation (T₀), 1 hour after initiation of treatment with CPAP (T₁), and at the time of stabilization (T_n): systolic blood pressure (SBP), heart rate (HR), SpO₂ and PaO₂/FiO₂ ratio (P / F), PH and bicarbonate. An analysis of variance for repeated measures (ANOVA) was applied to assess the statistical significance of the improvement in these parameters. The number of patients discharged, the length of stay in the Critical Area of the ED, the need for Intensive Care Unit (ICU) admission and deaths were also considered.

Results: All patients showed a rapid correction of hypoxemia and metabolic acidosis early after application of CPAP. In particular, a significant increase of the P / F ratio was observed at T₁, followed by a steady improvement until T_n (p <0.01 T₁ vs T₀ and T_n vs T₀).

The increase in SpO₂ was particularly evident in the first hour of treatment, with persistently high values until clinical stabilization (p <0.01 T₁ vs T₀; p <0.05 T_n vs T₀; T_n vs T₁: not significant). The reduction of HR was found to be significant starting from the first hour of treatment until clinical stabilization (p <0.01 T_n vs T₁ and T_n vs T₀ but not statistically significant between T₀ and T₁), while the improvement of SBP was not statistically significant at any time points probably because this parameter was not particularly altered at T₀ in our sample. The degree of significance for the reduction of respiratory rate was expressed by the values of p <0.05 for T₁ vs T₀; p <0.01 for T_n vs T₁ and T_n vs T₀.

The correction of metabolic acidosis expressed by the increase of the pH values showed statistically significant differences from the first hour of treatment until clinical stabilization (p <0.05 T₁ vs T₀ and T_n vs T₁; p <0.01 T_n vs T₀), as indeed is the case for the bicarbonates (p <0.01 T₁ vs T₀ and T_n vs T₀, p <0.05 T_n vs T₁). No deaths and no ICU admission were observed. All patients were discharged from the ED after clinical stabilization within 24 hours (70% of patients) and within 48 hours (30% of patients).

Conclusions: Our study suggests that early application of CPAP in patients with acute hypoxemic respiratory failure and metabolic acidosis secondary to nonfatal drowning may be an effective therapeutic intervention to be investigated in future studies. The rapid correction of the gas exchange derangement and metabolic acidosis allows an early discharges from the ED and a reduction in adverse events related to hypoxemia.

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THE USE OF NONINVASIVE MECHANICAL VENTILATION IN BLUNT CHEST TRAUMA. EXPERIENCE IN AN ELDERLY PATIENT.

Isabella Di Zio, Roberto Pilotti, Filippo Tommaso Feliziani, Giuseppina Petrelli, Giancarlo Concetti, Liliana Talamonti, Paolo Groff

Emergency Department, Madonna Del Soccorso Hospital, San Benedetto Del Tronto, Italy

Corresponding author: isabella.dizio@katamail.com

Keywords: mechanical ventilation, blunt chest trauma, elderly patient

Background. Falls are the most common cause of trauma in the elderly, with particular regard to blunt chest trauma with rib fractures, the prognosis of which linearly worsens with the number of fractures involved. The use of non invasive ventilation (NIV) in this condition is still poorly investigated. We describe a case of blunt chest trauma with "flail ribs" in an elderly patient successfully treated with NIV in our ED.

Case Presentation. An 87 years old woman presents to the ER, reporting head injury and closed chest trauma as a consequence of an accidental fall at home. She mostly complains of chest pain, exacerbated by breaths and movements. The clinical history shows HCV liver disease, cognitive impairment, COPD in OTLT. Vitals at presentation are: BP 140/90; HR 77; RR 25; O₂-saturation 93% on a 24% Venturi mask; NRS 6; ISS 25; GCS 13/15. The patient undergoes primary and secondary surveys according to ATLS guidelines. EKG, laboratory tests, BGA are performed; peripheral venous catheter, urinary catheter and cervical collar are positioned; O₂ therapy is administered. The patient is subjected to EFAST: negative for traumatic findings. The brain CT scan shows a thin layer of subdural left hyperdensity on a framework of marked cerebral leukoencephalopathy. No injuries to the cervical spine are detected at CT scan. The chest CT scan shows bifocal rib fractures, from the III to the V, in the left side. No traumatic lesions of the sternum. Moderate pleural effusion in the left hemithorax. No signs of PNx on a framework of COPD.

One difficulty in this patient is to establish the priorities for action: she presents with head injury complicated by a minor hemorrhagic lesion and acute on chronic respiratory failure due to flail chest. GCS is 13 and the patient confused (probably related to dementia), but BGA and respiratory signs indicate impending respiratory failure. It is therefore essential to give priority to the stabilization of respiratory function. Treatment is aimed at ensuring adequate oxygenation and ventilation through the application of NIV, and reducing pain to improve chest compliance and tolerance to ventilation through the administration of opioids. NIV is therefore initiated with a full-face mask, 24 cm H₂O IPAP, 5 cm H₂O EPAP, 26% inspired oxygen fraction, with short breaks for nebulized bronchodilators. The setting is adjusted to provide the lowest pressure necessary to get a better gas exchange and

patient comfort. The results are checked by continuous monitoring of pulse oximetry and expired tidal volumes. BGA is assessed one hour after starting and subsequently every four hours. A gradual improvement of pH is observed which is finally restored to normality with a concomitant return of gas exchange to values expected in a COPD patient in OTLT.

Discussion. The damage to the rib cage induced by the flail chest substantially affect the respiratory mechanics, causing decreased lung compliance, increased work of breathing, hypoxia and hypoventilation. Particularly dramatic is the case in which these alterations occur in an elderly patient wherein osteoporosis and comorbidities contribute to decrease the physiological reserves and ability to tolerate the traumatic event. In these patients the compliance of the lungs and chest wall is reduced and systemic vascular resistance increased. Further more, a deterioration of endocrine function with reduced response to trauma and a reduction in glomerular filtration and urinary excretion of toxic catabolites have been described. The paradoxical movement and the presence of pain may determine a shallow breathing, difficult expectoration and formation of atelectasis in the lung parenchyma. While improving alveolar ventilation, NIV prevents airway collapse, restoring the functional residual capacity and normalizing the ventilation-perfusion ratio. In our case, the setting of the ventilator followed the necessity to reach a compromise between patient's tolerance to ventilation and the fact that she was already suffering of chronic respiratory failure, accepting a moderate level of permissive hypercapnia. Pain management in this patient was also difficult: elderly patients with dementia usually do not adequately express the pain. In this case it was confirmed that adequately treating pain leads to a reduction of accesses of delirium and a better disposition to ventilatory treatment.

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RE-VISIT FOLLOWING EMERGENCY DEPARTMENT TREATMENT OF COPD EXACERBATION

Dilek Durmaz (1), Erkan Goksu (1), Mutlu Kartal (1), Gunay Yildiz (1), Aslı Yuruktumen (1)

1. Emergency Medicine, Akdeniz University School of Medicine, Antalya, Turkey

Corresponding author: erkangoksu@akdeniz.edu.tr

Keywords: COPD, revisit, emergency medicine

Objective:

COPD is associated with high mortality and morbidity and is projected to be the third most common cause of death worldwide by 2020. For a variety of reasons, there is a drive to manage a greater number of individuals as outpatients. Preventing readmissions can reduce associated morbidity and subsequent healthcare costs.

The aim of the present study was to determine the factors affecting the re-visit of COPD exacerbated patients in the ED.

Materials and methods:

This is a prospective cohort study. Patients included in the study were above 18 years of age, had a previous diagnosis of COPD, and presented to the ED for the treatment of acute exacerbation. All the information relevant to the study was collected during the patient's visit to the ED. Revisit was defined as an unscheduled visit to an ED or primary physician within 2 weeks of initial ED visit for worsening COPD symptoms. Telephone follow-up was done on all patients at the end of 2 weeks.

Results:

The cohort consists of 192 patients. Re-visit rate in this study was 27%. Mean respiratory rate, exacerbations in previous year, home nebulizer therapy, home oxygen therapy, admission to intensive care or hospital ward due to COPD exacerbation, previous intubation and abnormal chest x-ray were associated with increased re-visit in univariate analysis. However, after multivariate analysis, exacerbations in previous year (OR:1.07, 95%CI: 1.01-1.14) and abnormal chest x-ray (OR:2.5, 95%CI: 1.10-6.11) were still significant.

Conclusion:

In conclusion, the number of ED visits previous year and abnormal chest x-ray can predict the revisit of a COPD exacerbated patient within 14 days of an ED visit.

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A RARE DIAGNOSIS THAT IS CONFUSED WITH PNEUMOTHORAX: SWYER JAMES MAC LEOD SYNDROME

Mahmut Cevik (1), Yasin Yildiz (1), Ozlem Guneyysel (2)

1. Emergency Medicine Clinic, Umraniye Training and Research Hospital, Istanbul, Turkey

2. Emergency Medicine Clinic, Dr Lutfi Kirdar Kartal Education and Research Hospital, Istanbul, Turkey

Corresponding author: guneyysel@gmail.com

Keywords: Swyer James Mac Leod Syndrome, Pneumothorax, Emergency medicine

Swyer James Mac Leod syndrome (SJMLS) was first reported in a six-year-old child with unilateral pulmonary emphysema who has hypoplastic pulmonary artery in 1953. It is typically diagnosed in childhood with recurrent respiratory tract infections. However, sometimes in patients who have minor or no sequelae bronchiectasis, they can be minor symptoms or completely asymptomatic; and these patients can be diagnosed in their adulthood period. Here, a 20-year-old Swyer James Mac Leod Syndrome diagnosed male patient who consulted with complaints of fever, coughing and unilateral chest pain is presented.

CASE: 20-year old male patient has consulted to our emergency service with complaints of fever, coughing and stinging unilateral chest pain. It was learnt that, the patient had fever, coughing and chest pain for all day and he did not have any known disease. He was complaining chest pain after coughing, and the pain was getting worse while breathing and coughing. Blood Pressure 128/76 mmHg, Pulse rate 88/bpm, respiration rate 18/pm, body temperature 37,2 oC and SpO2 97%. The patient did not have skin eruption, toxic appearance and neck stiffness. Other system examinations and EKG were determined as normal. The initial diagnosis was pneumonia (because he is tall, thin and has been smoking 1 packet of cigarette for 5 years). Decrease in peripheral vascular shadow and hyperlucent appearance in lower left lobe in CXR was detected. In thorax CT; clear hyperaeration in left lung, secondary linear fibrotic changes caused by the infection in lower zone and bronchiectasis areas were detected. Decrease in vasculature, existence of many cystic areas and the relative smallness of the left lung were detected. Left pulmonary artery was hypoplastic. He was consulted with the Pulmonologist, and the opinion that CT images were compatible SJMS. It was confirmed that he has been having recurrent respiratory tract infections since his childhood, and was treated several times by the diagnosis of lower respiratory tract infection since he was 15 years old. Symptomatic treatment, moxifloxacin 400 mg 1x1 PO and existing mucolytic were prescribed and he was discharged.

DISCUSSION: The pathological changes in SJML Syndrome can be summarized as the obliteration of small bronchioles, non-existence of peripheral vascular structures, existence of pulmonary artery hypoplasia and emphysema. It is thought that hypoplasia of pulmonary vessels and emphysema is secondary to chronic inflammation. Dyspnea, recurrent respiratory tract infections, hemoptysis and chronic productive cough can be observed. Peripheral parenchymal areas are ventilated with collateral air inlet due to the obliteration that acute bronchiolitis causes in small airways. Ultimately; air trapping, distension and growing emphysema create characteristic changes. Thorax CT reveals opportunity to examine the prevalence of bronchiectasis, and the air trapping, evaluate bronchial and pulmonary arterial system and exclude endobronchial lesions. The treatment includes the early control of lung infections and Influenza and Pneumococcal vaccines. Hemoptysis and recurrent lower respiratory tract infections may require surgical treatment.

The case is presented to emphasize the consideration of Swyer James Mac Leod Syndrome as a differential diagnosis for the patients that consulted to the emergency service with cough and unilateral chest pain, have risk factors for pneumothorax and unilateral hyperlucency is observed in CXR.

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DIAGNOSTIC IMPORTANCE OF HYPOCALSEMIA ON PULMONARY EMBOLIA IN EMERGENCY DEPARTMENT

Arif Duran (1), Tarık Ocak (1), Fahrettin Talay (2)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

2. Department of Chest Diseases, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: serum electrolyte levels, pulmonary embolism, Hypocalcemia

Aim: An acute pulmonary embolism (APE) is a life-threatening cardiopulmonary condition, and diagnosis of the disease in the emergency department is difficult. The aim of this study was to conduct a retrospective analysis of the plasma Calcium (Ca) levels of patients with an APE diagnosis in the emergency department.

Materials and methods: Patients presenting to the Abant University Education and Research Hospital emergency clinic with a PE between January 1, 2008, and December 2012 were included in the study. The values of patients with an APE diagnosis and those who presented to the emergency clinic with dyspnea but who were diagnosed with an APE were analyzed.

Results: Two hundred twenty-one patients 67.94±15.49 (112 men and 109 women) with a diagnosis of APE and 165 patients 54.80±18.76 (94 men and 71 women) without APE diagnosis (NPE) were included in the study. The group with the APE diagnosis displayed lower serum electrolyte values compared to NPE diagnosis. In relation to hypocalcemia, the values of the APE group were statistically significant (p<0.05).

Conclusion: Abnormalities in serum electrolyte levels are more frequently observed in APE patients, and hypocalcaemia is a frequent occurrence in these patients. There is a relationship between hypocalcemia and PE.

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THE DIAGNOSTIC AND PROGNOSTIC VALUE OF 'MEAN PLATELET VOLUME' IN PULMONARY THROMBOEMBOLISM

Mehmet Ergin (1), Leyla Ozturk Sonmez (1), Zerrin Defne Dundar (1), Kenan Yavuz (1), Fulya Kose (1), Mehmet Gul (1)

1. Emergency Department, NEU Meram Medicine School, Konya, Turkey

Corresponding author: drmehmetergin@gmail.com

Keywords: pulmonary thromboembolism, venous thromboembolism, mean platelet volume

INTRODUCTION: 'Mean platelet volume' is associated with platelet volume and activity. In the literature, high value of MPV value is pointed as an independent risk factor in MI and stroke patients. It also is associated with poor

prognosis in MI and stroke patients. In the recent studies, high value of MPV is described as a predictor in venous thromboembolism. In this study, we aimed to work about MPV as a cheap and fast marker in patients who diagnosed acute pulmonary thromboembolism (PTE) in emergency medicine department.

METHODS: Our study included patients who applied to our emergency medicine department between 01/01/2010 and 31/12/2012 and had thorax computed tomographic angiography with pre-diagnosis of PTE. Patients who had PTE in CT scan were classified as 'patient group' and ones with negative CT scanning were classified as 'control group'.

RESULTS: 163 patients were involved in our study, 129 of whom were in 'patient group' and others were in 'control group'. There weren't any statistically significant difference in age, gender distribution, diastolic blood pressure, platelet count, and MPV values (p<0.05). We determined statistically significant difference in systolic blood pressure, heart rate, shock index and troponin-I values (p>0.05). When we did a subgroup analysis within 'patient group', there weren't any statistically significant difference for MPV and platelet count level between 'survival and non-survival' subgroups.

CONCLUSION : Our study results didn't support up-to-date literature about diagnostic and prognostic significance of MPV in PTE patients. We are planning a prospective study in our clinic even though we had results of our study with important limitations considered.

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COMPARISON OF THE EFFECT OF EARLY AND DELAYED ENDOTRACHEAL INTUBATION ON THE OUTCOMES FOR CRITICALLY ILL PATIENTS WITH DYSPNEA MANAGED IN THE RESUSCITATION ROOM

Hee Gang Choi (1), Min Jin Choi (1), Mi Yeon Kim (1), Chang Bae Park (1), Bora Yang (1)

1. Emergency department, Seoul National University Hospital, Seoul, Korea, (South) Republic of

Corresponding author: yboralara@gmail.com

Keywords: Endotracheal Intubation, Resuscitation Room, Dyspnea

Background

Appropriate airway management is the cornerstone of the treatment in emergency department. Endotracheal intubation is the most reliable method to ensure a patent airway, provide oxygenation and ventilation. There are patients who need delayed endotracheal intubation although initial treatment under the triage system using emergency severity index. The purpose of this study is to analyze the differences between the early intubation group and delayed intubation group.

Methods

Emergency patients were enrolled from Jan. 1, 2009 to Dec. 31, 2012, who presented with dyspnea and were managed in the resuscitation room in an urban, tertiary, academic

hospital emergency department(ED). Data were collected from electronic medical record system for demographics and designed resuscitation room registry (RRR) for specific risk factors for patients managed in the room which were recorded by emergency registered special nursing staffs.

We classified patients with early intubation (EI) group and delayed intubation (DI) group according to the time from arrival at the ED to providing intubation at the resuscitation room. The cut-off time between EI and DI group was 60 minutes after arrival the emergency department, respectively. Potential risk factors were age, gender, ambulance use, respiratory rate, and mental status (AVPU). Primary Outcome was hospital mortality. Secondary outcome was ED mortality. We analyzed the demographics and outcomes by the time gap between ED arrival and the time of endotracheal intubation.

Results

Eligible population was 178, excluding non dyspnea group (2,808) and non intubation group (554) and unknown results in emergency department (59). Of these, early intubation group was 112 (62.9%) and delayed intubation group was 66 (37.1%), respectively. ED mortality was 3.9% for total group, 3.6% for EI group, 4.6% for DI group, respectively. Hospital mortality was 35.1% for total group, 30.6% for EI group, 42.9% for DI group, respectively. Adjusted ORs were not significantly different between early and delayed intubation group.

Conclusion

ED and hospital mortality for critically ill patients with dyspnea were higher in delayed intubation group. But the differences were not statistically significant.

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SPONTANEOUS PNEUMOTHORAX - DIAGNOSTIC DIFFICULTIES IN THE EMERGENCY DEPARTMENT.

Adela Golea (1), Sorin Mihai Lacan (1)

1. Emergency department, University Emergency County Hospital Cluj-Napoca, Cluj-Napoca, Romania

Corresponding author: dr.sorin.lacan@gmail.com

Keywords: Spontaneous Pneumothorax, Supraventricular tachycardia, Dyspnea

Background: Spontaneous Pneumothorax is rare in emergency department (ED), the patients often presents with sudden dyspnea following physical exercise.

Case report: A 24 year old male patient presents to ER for stabbing pain in the right hemithorax, with irradiation in his right shoulder, with sudden onset one hour ago after an episode of dry coughing. At the moment of examination the patients is without dyspnea. The patient does not have any significant medical history and he does not take any medication. There is no record of a recent chest trauma or thoracic surgery. The patient admits smoking up to 20 cigarettes a day for the last 10years, with an increase in the number of cigarettes (40 a day) for the last 6 months.

Physical examination: The patient is conscious, nervous, pale, presenting increased tympanic and lack of normal lung sounds of the right thorax. BP 144/81 mmHg, HR 102 b/min, regular hearth beats, SpO2 99%, RR 18breaths/minute. A chest X-ray is ordered and a diagnosis is set: compressive right pneumothorax with complete collapse of the right lung and the shift of the mediastinum to the left. Oxygen therapy is being started on a face mask and arrangements are made for the patient to be referred to the thoracic surgery department.

The particularity of the case is represented by the complication the patient presented while awaiting for the transfer to the thoracic surgery department: the patient presented a brief episode of paroxysmal supraventricular tachycardia, although the patient was not hypoxic, nor anemic. A sinus rhythm was restored in less than 3 minutes, after vagal maneuvers and 3 mg of metoprololom.

Conclusion: Spontaneous pneumothorax is more frequent in young males with a smoking habit or those presenting with emphysema bubbles. Patients with dyspnea require careful ECG monitorization due to the high incidence of cardiac arrhythmias caused by the rapid fall of oxygen levels or the pH increase (secondary to hyperventilation). The most frequent arrhythmias are the multi-focal supraventricular tachyarrhythmias.

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EPIDEMIOLOGICAL PROFILE OF PATIENTS DIAGNOSED WITH PNEUMONIA

Irene Fontes Manzano (1), Francisca Alonso Cano (2), Laura Juana López Torres (3), Laura López Abellan (2), Tamara Martín Casquero (2), Daniela Rosillo Castro (2)

1. Emergency Department, Hospital Gneral Universitario Reina Sofía, Murcia, Spain

2. Emergency Department, Hospital General Universitario Reina Sofía, Murcia, Spain

3. Emergency Departamente, Hospital Genral Universitario Reina Sofía, Murcia, Spain

Corresponding author: danielarosillo@hotmail.com

Keywords: pneumonia, Epidemiological profile, Emergency department

Objective: To determine the epidemiological profile of patients with discharge diagnosis of our emergency department of Pneumonia

Methodology: Retrospective, observational clinical record review. We reviewed patients with a discharge diagnosis of our ED with pneumonia in the period June 1 to December 31, 2010. Value: Gender, age, triage Manchester, personal casework (COPD, asthma, smoking, diabetes, congestive heart failure (CHF), renal failure, corticoides treatment with inhaled, oral corticosteroids, HIV, neoplasia, immunosuppression), clinical (cough, expectoration , fever

at home, rib pain. Dyspnea, hemoptysis. Upon his arrival in the ED: temperature, pressure, sat <90%

Results: 57.5% were males, age was 57.5 + - 21.8, of which 27% were older than 70 years, the youngest patient being 13 and the oldest 95. With regard to personal history: COPD were 16.3, 6.7% have asthma, smoking 20.6%, 17.3%, 62.1% exfumadory smoking, 16.7% diabetic, had IC 9, 5% and renal failure 7.9%; taking inhaled corticosteroids for chronic treatment oral 12.3% and 0.8%, 1.6% were HIV, neoplasia had a 5.6% and 1.2% were immunosuppressed other. Clinic 78.5% had cough, fever 56.7%, dyspnea 34.5%, 33.7% purulent rib pain 32.1%, 3.2% hemoptysis. On arrival at urgenciel 89.8% were classified as Level 3 Manchester triage, 19.8% had fever. The 4.3% pO2 <90%. , 3.1% were hypotensive

Conclusions: 60% of our patients were male with a mean age of 60 years, are over 70 years 3 of 10 patients. With regard to personal history: They are smoking or have been 1 in 3, COPD or asthma 1 in 5, like diabetics. 1 in 10 exhibit immunosuppression of any kind. Refer mostly cough, around 80% and 60% fever and only 3% hemoptysis. On arrival to the emergency department are classified as triage 3 Manchester 1 in 10, and a fever 1 in 5

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ANALYSIS OF SUPPOSED ALLERGIC REACTIONS IN EMERGENCY DEPARTMENT BASED ON SAMPSON'S CLASSIFICATION. 227 CASES REPORT

Abdelouahab Bellou (1), Marie Stephan (1)

1. urgences, CHU rennes, rennes, France

Corresponding author: m-stephan@hotmail.fr

Keywords: anaphylaxis, sampson, epinephrine

The aim of our study was to evaluate the assesment and management of allergic reactions in Emergency Departement (ED). In this purpose, we separated anaphylaxis events (AE) and non anaphylaxis events (NAE) based on Sampsons' classification. The primary criteria was epinephrine rate of administration, as the first-line medication of choice in anaphylaxis. We also analysed a range of variables including demographic and diagnostic criteria, treatments, duration of monitoring in ED and the follow-up including using epinephrine autoinjector and the allergist appointment. A 1 year retrospective study was carried out and data were collected from the patients' computerized medical reports. A total of 227 patients admitted to the ED for an allergic reaction were included in the study, divided in two groups : NAE including 109 patients and AE includig 118 patients. Of those, 116 patients (51.1%) was female and their mean age was 40.9±. 26.3% received epinephrine in AE group, mostly by routes not recommanded. The duration averages of supervision in ED were 5h24 in NAE group and 14h in AE group. Hospitalization rate was 7.7% in NAE group and 26.4% in AE group. 86.8% of these hospitalizations were in UHTCD unit.

An epinephrine auto-injector was prescribed in 11.4%. An allergist appointment was recommended in 43.2% but only done in 32%. The management of anaphylaxis is heterogene because of sub-diagnoses and the delay of efficient management which can increase mortality. In the fall of our study, we propose an information notice for patients admitted for an allergic reaction, a medical report to send to the allergologist network in order to plan a follow-up, as well as an algorithm for the management of anaphylaxis in ED. It will be interesting to revalue our practices soon, to assess the impact of these measures.

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ECHO-GUIDED LIFE SUPPORT (EGLS) : AN ALGORITHMIC APPROACH TO SHOCK

Jean-francois Lanctot (1), Maxime Valois (2)

1. Emergency and critical care, Sherbrooke University, Montreal, Canada

2. Emergency and critical care, Montreal University, Montreal, Canada

Corresponding author: maxvalois@hotmail.com

Keywords: point of care ultrasound, shock, algorithm

Many uses of ultrasound are pertinent to the evaluation of the patient in shock. For non-experts in point-of-care ultrasound confusion can arise from the many possibilities available to evaluate a shock patient.

The EGLS approach is designed to standardise and facilitate its use in a potentially stressful situation and to optimise the examination sequence. It is designed to cover the main etiologies of shock and avoid certain pitfalls of ultrasound evaluation. (such as assigning the responsibility of a shock state to a severly, but chronically, dysfunctional left ventricule). The course on Echo-guided Life Support has been given to 300 residents and practicing physicians in Canada via Sherbrooke University. It is currently being considered for incorporation in undergraduate studies at McGill University.

The presentation would cover the components of each step of the algorithm : inferior vena cava assessment, focused echocardiography (subcostal, parasternal long and short and apical views) and lung ultrasound. Emphasis is on the integration of those different ultrasound modalities in a clinically useful

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THE AGREEMENT BETWEEN ABNORMAL PERIPHERAL VENOUS AND ARTERIAL LACTATE IN THE EMERGENCY DEPARTMENT

Benjamin Bloom (1), Tim Harris (1), Jason Pott (1)

1. Emergency Department, Royal London Hospital, London, United Kingdom

Corresponding author: ben.bloom@nhs.net

Keywords: lactate, venous, arterial

The agreement between abnormal peripheral venous and arterial lactate in the Emergency Department

Introduction
Lactate measurement is a standard tool used in the prognostication of critically unwell patients. Most of the evidence for this is based on arterial lactate (AL) measurement. Arterial sampling is painful, technically more difficult and carries small but significant risks. Previous studies comparing peripheral venous with arterial lactate showed little difference but varied in size and predominantly included patients with normal lactates. The population of interest is that with abnormal venous lactates (VL). The objective of this study was to measure the agreement between abnormal peripheral venous and arterial lactate.

Methods

A retrospective review of the medical record was conducted. Patients over the age of 16 presenting to the Emergency Department (ED) with VL>2.0mmol/L and an arterial sample taken within one hour were included. Patients that had intravenous fluid management prior to or between initial venous sampling venous and arterial sampling were excluded. In addition, those patients whose medical record could not be accessed were excluded. A subgroup of patients whose samples were taken less than 16 minutes apart was also analysed.

Results

A total of 245 patients were included. The mean age was 59±20.0. There were 169 (69%) male patients. The highest VL recorded was 15mmol/L. The AL range was 0.6 to 13.20mmol/L.

The mean difference ± standard deviation (MD±SD) between VL and AL (VL minus AL) for all patients was 1.04±1.27mmol/L (95% limits of agreement [LOA] -1.50 to 3.58). For the samples that were taken less than 16 minutes apart (n=86) the MD was 1.01±1.08 (95% LOA -1.13 to 3.15). Samples that were taken between 16 and 60 minutes apart (n=159) were found to have a mean difference of 1.06±1.38 (95% LOA -1.70 to 3.82).

Conclusion

We demonstrate a greater difference between VL and AL with broader LOA than previously reported. This is due to the population sample exclusively investigating patients with abnormal values, for which agreement would confer greatest clinical significance. This demonstrates that the agreement between VL and AL is poor and that VL is not a good substitute for AL. More work is required to demonstrate whether a normal VL can be used as a screen to exclude an abnormal AL.

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PROTECTIVE EFFECT OF MONTELUKAST, A CYSTEINYL LEUKOTRIENE RECEPTOR-1 ANTAGONIST, AGAINST INTestinal ISCHEMIA-REPERFUSION INJURY IN THE RAT

Arif Duran (1), Hayrettin Öztürk (2), Elçin Hakan Terzi (3), Mehmet Tosun (4), Hülya Öztürk (2), Tarık Ocak (1), Aysel Kükner (3)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

2. Department of Pediatric Surgery, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

3. Department of Histology and Embryology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

4. Department of Medical Biochemistry, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Montelukast, Ischemia-Reperfusion, Intestine

Objective: Ischemia-reperfusion (I-R) injury of the intestine is a significant problem because the initial damage caused by ischemia is exacerbated by reperfusion. In this study, we examined the protective effect of montelukast against I-R-induced intestinal tissue damage.

Materials and methods: Eight-week-old male Sprague-Dawley rats were randomly divided into three treatment groups: a sham-operated group, a group receiving I-R, and a group receiving I-R plus montelukast (I-R/M). Tissue samples were evaluated and scored histologically. The blood levels of malondialdehyde (MDA), myeloperoxidase (MPO), glutathione (GSH), and cardiotrophin-1 (CT-1) were measured.

Results: In the I-R group, the histological score and the levels of serum MDA and MPO were increased compared with those in the control group. In the I-R/M group, the histological score and serum MDA and MPO levels were significantly decreased compared with those in the I-R group. Additionally, compared with the IR group, the I-R/M group had increased serum GSH and CT-1 levels and a decreased intestinal injury score. Ileal sections from the I-R/M group showed minimal alterations, characterized by moderate lifting of the epithelial layer from the lamina propria, and few apoptotic enterocytes were observed compared with the number in the I-R group.

Conclusion: The findings of the present study demonstrated that montelukast can protect I-R-induced intestinal damage in rats.

Po-654

Rez de Jardin poster area

OUTCOME OF DELAYED RESUSCITATION BUNDLE ACHIEVEMENT IN EMERGENCY DEPARTMENT PATIENTS WITH SEPTIC SHOCK

Jin Jeon (1), Chang Hwan Sohn (2), Won Young Kim (2)

1. Department of Respiratory and Critical Care Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of
2. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: Septic shock, Surviving Sepsis Campaign, Mortality

Purpose:

The aim of this study was to assess whether delayed resuscitation bundle compliance from 6 to 12 hours after diagnosis of septic shock impacted 28 day mortality.

Materials and Methods:

A prospective observation study of consecutive adult patients with septic shock who were treated with protocol-driven resuscitation bundle therapy including EGDT was performed. Compliance with the resuscitation bundle was assessed at 6 and 12 hours after septic shock diagnosis (Time 0). Patients were divided into three groups: early compliance (≤ 6 hours), delayed compliance (>6 but ≤ 12 hours), and non-compliance (>12 hours).

Results:

A total of 332 patients were included, with an overall 28 day mortality of 17.2%. The mean age was 63.9 years; 57.8% were male. Early compliance was achieved by 195 patients (58.7%), delayed compliance by 59 patients (19.8%), and non-compliance by 78 patients (23.5%). Non-compliance group had a significantly higher 28 day mortality (29.5%) than delayed compliance (13.6%) and early compliance (13.3%) groups ($p=0.04$). Delayed compliance was associated with a lower mortality risk than non-compliance (OR 0.32, 95% CI: 0.13–0.82, $p=0.02$).

Conclusions:

In conclusion, delayed resuscitation bundle compliance within 12 hours is associated with mortality reduction in ED patients with septic shock.

Po-655

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CROUP MANAGEMENT BY PRIMARY CARE PEDIATRICIANS. BRIDGING THE GAP BETWEEN THEORY AND PRACTICE BY MEANS OF HIGH-FIDELITY SIMULATION

Eva Civantos-fuentes (1), Maria Jose De Castro-lopez (2), Manuel Fernandez-sanmartin (2), Antonio Iglesias (3), Sanchez Luis (4), Antonio Rodriguez-nunez (2)

1. pediatrics, primary health care public system. canarias, santa cruz de tenerife, Spain
2. Pediatrics. Intensive Care Unit, Clinical University Hospital, santiago, Spain
3. Director, Public Emergency Care System 061 Galicia - Spain, santiago, Spain
4. Teaching and Research, Public Emergency Care System 061 Galicia - Spain, santiago, Spain

Corresponding author: luis.sanchez.santos@sergas.es

Keywords: croup, EPINEPHRINE, SYSTEMATIC TRAINING

Introduction

Croup is a common condition in pediatric primary care and emergency rooms. Every pediatrician should be familiar with it and should have the knowledge and skills to treat croup patients safely and without delay. Advanced simulation is a training methodology with many advantages over traditional learning-training process. Our objective was to assess the pediatricians' performance when faced with a severe croup simulated scenario, in order to know their strengths and weakness and to obtain clues to improve training.

Methods

A severe croup scenario that was conducted in a series of pediatric advanced simulation courses held between June 2008 and April 2010, and was systematically analyzed via the SimBaby simulator recorder system. Scenario assessment was made by means of a task list derived from current evidence-based croup management.

Results

Sixty one scenarios and groups made up of four primary care pediatricians were evaluated. A correct diagnosis was made in 54 scenarios (88%), appropriate oxygen therapy was performed in 24 (39%), steroids were administered in 35 (57%), and nebulized adrenaline in 46 (75%). Steroid choice was intramuscular or oral dexamethasone in 14 scenarios (21%), being its dosage 0.6 mg/kg in 6 scenarios (10%). Nebulized adrenaline was 0.5 ml/kg or 3 ml in 11 scenarios (18%).

Conclusions

Primary care pediatricians were able to make a fast and accurate diagnosis of croup but they exhibited inadequate skills to provide an effective management according to current evidence. Our data identified many areas of concern related to the performance of oxygen therapy and the administration of steroids and adrenaline. Future training programs should remark the practical aspects of croup management. High-fidelity simulation may be an optimal training tool for primary care pediatricians in order to improve the management of common respiratory emergencies like croup.

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Additional info

Authors declare having no conflict of interest.

Po-656

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PRIMARY CARE PEDIATRICIANS MANAGEMENT OF SIMULATED TRAUMA PATIENTS. FROM THE RECOGNITION OF THE NEEDS TO DE DESIGN OF SPECIFIC PEDIATRIC TRAUMA SIMULATION COURSE

Eva Civantos-fuentes (1), Manuel Fernandez-sanmartin (2), Antonio Iglesias (3), Sanchez Luis (4), Antonio Rodriguez-nunez (2)

1. *pediatrics, primary health care public system. canarias, santa cruz de tenerife, Spain*
2. *Pediatrics. Intensive Care Unit, Clinical University Hospital, santiago, Spain*
3. *Director, Public Emergency Care System 061 Galicia - Spain, santiago, Spain*
4. *Teaching and Research, Public Emergency Care System 061 Galicia - Spain, santiago, Spain*

Corresponding author: luis.sanchez.santos@sergas.es

Keywords: pediatric trauma, systematic training, advanced medical simulation

Introduction

The initial management of an injured child is an essential outcome factor. Training by means of advanced simulation can improve the pediatricians abilities in the management of pediatric trauma patients; also it can decrease errors and increase patient's safety. Training programs must be adjusted to the needs of the target population.

Methods

A trauma patient scenario was developed and included in the mobile simulation training program sponsored by the Spanish Society of Primary Care Pediatrics. The scenario was implemented in the Simbaby simulation system. The performances of 156 pediatric primary care providers, divided in 39 teams, who participated in the courses carried out from May 2008 to February 2010 were retrospectively analyzed. The scenario events and video recording was systematically assessed, considering the items suggested by the Trauma Working Group of the Spanish Society of Pediatric Critical Care and the main 8 targets of the simulation evaluation tool from the Cincinnati Children's Hospital trauma care program. The results of this survey, as well as the instructors experience were the rationale to the design of the first Advanced Simulation of Pediatric Trauma Course for primary care pediatricians and Emergency Medical System providers (SATRAP) in our country.

Results

Although pulse oximeter was placed, the intravenous/intraosseous access was indicated, the blood pressure was checked, and the oxygen was applied in 100% of the scenarios, the primary survey with the ABCDE approach was done only in one scenario (2.5%). In 30.7% of scenarios only steps ABC were made. Cervical collar was placed in 82% of instances but its placement was incorrect or the bilateral cervical immobilization was incorrect in 90% of scenarios. An intravenous fluid bolus was indicated in 87% of the scenarios, after a median of 3 minutes after the primary survey. The appropriate warming measures were done in 25.6% of cases and the Glasgow scale was assessed 5,1%. Despite participants management, the simulated patient progressed to cardiac arrest in 30.7% of scenarios. According to our results we have designed the program of the new two-day SATRAP course that includes lectures about priorities of the primary and secondary survey, representative case reports, skillstations (triage, primary and secondary survey, vascular accesses, airway

management in trauma, thoracocentesis, patient immobilization and cardiopulmonary resuscitation) and 6 advanced simulation scenarios.

Conclusions

Primary care pediatricians have problems applying the primary ABCDE trauma care sequence and the cervical spine precautions in a trauma simulation scenario. Educational programs for pediatricians must improve the practical check points of the trauma initial approach management. The newly designed SATRAP course might be a good training tool in this sense.

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Additional info

Authors declare having no conflict of interest.

Po-657

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EVALUATION OF MEDICAL SIMULATION BY MULTIDISCIPLINARY EMERGENCY TEAMS.

Sandrine Bacquaert, Francis Béguet, Daniel Jost, Stéphane Dubourdieu, Benoit Frattini, Olga Maurin, Anne-Claire Mlynski, Jean-Pierre Tourtier, Laurent Domanski.

Emergency Medical Department, Fire Brigade of Paris, Paris, France

Corresponding author: olgamaurin@free.fr

Keywords: simulation, satisfaction, training

Introduction: Medical simulation is increasingly used for initial and continuing training in emergency medicine for medical, paramedical and emergency service personnel. The aim of this study was to compare the satisfaction of the trainees after the 1st and 2nd year of experience of that type of teaching.

Materials and methods: Satisfaction survey. A questionnaire addressing 5 items was completed by the trainees after each simulation session. The items were: 'briefing', 'realism', 'debriefing', 'change in professional practices' and 'overall assessment'. Each item was scored A (very satisfactory) to D (inadequate) or by a YES/NO answer. With one year of follow-up, the responses enabled corrective measures to be introduced with respect to teaching conditions. The methods were: 1. standardization of the briefing; 2. systematic presence of a trainee emergency service team in addition to the medical team; 3.

improvement in the setup; 4. specific debriefings, in part distinct, for medical and emergency service trainees. The effect of those measures on trainee satisfaction was observed the following year. The percentages were compared using Fisher's exact test. The significance level was 0.05.

Results: From 23/09/2010 to 08/06/2012, 230 questionnaires were collected (1st year: n = 118; 2nd year: n = 112). The items for which a significant improvement was observed were: briefing (score A: 72% (1st year) vs. 86% (2nd year), p = 0.01) and debriefing (score A: 71% (1st year) vs. 89% (2nd year), p = 0.01). There was no significant progression for the other items. Nonetheless, a feeling of potential changes in professional practices remained strong ('yes' in 71% of cases for the 2 periods).

Discussion: Satisfaction with the two key phases in a simulation session, briefing and debriefing, changed significantly between the two periods. The corrective measures were a factor explaining the progress. Standardization of the briefing (written documentation, scheduling of the simulator's presentation) was experienced as a facilitating component for the trainers. The experience acquired by the instructors was also probably another factor contributing to improvement.

Po-658

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A NOVEL USE OF SIMULATION: PALLIATIVE MEDICINE IN THE EMERGENCY DEPARTMENT

Thomas Noeller (1), Pamela Ritchey (2), Michael Smith (2)

1. Emergency department, MetroHealth Medical Center, Cleveland, OH, United States

2. Emergency Department, MetroHealth Medical Center, Cleveland, OH, United States

Corresponding author: mikecwru@gmail.com

Keywords: palliative medicine, simulation, emergency

Introduction: We describe the use of simulation techniques to create a palliative care based scenario that requires the learners to recognize that the simulated patient is Do Not Resuscitate status and communicate with family members along with providing comfort during the dying process. This type of simulation is described minimally in the emergency medicine literature and the techniques were significantly expounded upon as a form of curriculum development in an area that may not be well represented in most emergency medicine curricula. Additionally, learners are usually geared for an intensive resuscitation when high fidelity simulators are used, so this simulation provides a novel educational experience for learners.

Methods: Several planning meetings were held between the simulation directors and a multi-disciplinary team. Our emergency medicine residents rotated through the case in groups of 3 to 4. A case was written involving "Frank

Kopps," a retired 88 year old dentist which had previously experienced intubation. He has expressly told his physician and family that under no circumstances would he allow himself to be intubated again. In the high fidelity scenario, Mr. Kopps is portrayed by the high fidelity simulator as obtunded and in respiratory distress. An electronic medical record was created in a training environment so learners could access his record and find documentation of his resuscitation status. Standardized actors played the patients two adult daughters, who knew of the patient's wishes. The goal of the scenario was to recognize that the patient was critically ill and dying, recognize that his status was DNR, communicate effectively with the family, and follow his wishes. After the simulation, learners were given a video-assisted debriefing utilizing expert faculty from emergency medicine, palliative care, medical ethics, pastoral care, and social work.

Reflection/Results: Instant feedback regarding the simulation was overwhelmingly positive from both residents and faculty. Key learning points were that more education has to be focused on the different do not resuscitate statuses in Ohio along with the legal statutes regarding these. Residents expressed that this was a valuable learning experience, including a resident that had to use techniques used in this simulation on an actual palliative patient/family that very same day.

Po-659

Front of the Auditorium poster area

A NOVEL USE OF SIMULATION: MEDICO-LEGAL SIMULATION

Marilena Disilvio (1), Thomas Noeller (2), Michael Smith (3), Nicole Veitinger (3)

1. Law Firm, Reminger & Reminger, Cleveland, OH, United States

2. Emergency department, MetroHealth Medical Center, Cleveland, OH, United States

3. Emergency Department, MetroHealth Medical Center, Cleveland, OH, United States

Corresponding author: mikecwru@gmail.com

Keywords: legal, lawsuit, simulation

Introduction: We describe the use of simulation techniques to create a mock deposition that replaced one of our morbidity and mortality conferences. This type of simulation is described minimally in the emergency medicine literature and the techniques were significantly expounded upon as a form of curriculum development in an area that may not be well represented in most emergency medicine curricula.

Methods: Several planning meetings were held between the simulation directors, legal/compliance officers for our hospital, and attorneys from the firm that defends our hospital. The agreed upon idea was to develop a medico legal education day. A real case that was found in the defendant's favor was used after altering the case for privacy concerns. A simulated chart was created within our

electronic medical record along with prior visits. A volunteer for the deposed was obtained in the form of a valiant chief resident. A formal notification of deposition was sent to the resident and the entire residency/faculty. The chief resident met with her defense team and prepared for her deposition per normal routine. On the day of the mock deposition, the resident and her counsel gave a brief overview of the preparation by repeating the pre-deposition meeting in abbreviated form. The resident then had a deposition from defense and plaintiff attorneys (actual JDs). The deposition was videotaped and a video debrief was conducted and facilitated by the attorneys. After the debriefing, the learners were then given lectures regarding the anatomy of a lawsuit, HIPAA, AMA, and other legal topics. The attorneys concluded the day with the review of 4 actual blinded ED charts for documentation and discussion points. A post simulation survey was sent to learners involved.

Reflection/Results: Instant feedback regarding the simulation was overwhelmingly positive from both residents and faculty. Key learning points were that participating in a deposition is a skill that improves with time and practice. Techniques for dealing with a deposition were discussed by attorneys. Faculty and residents commented that some points emphasized by the attorneys differed from the dogma usually taught by emergency medicine faculty.

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USE OF TRAUMA SIMULATION FOR TEAM TRAINING: NEEDS ASSESSMENT

Camilla Meager (1), Thomas Noeller (2), Heather Rysaback-smith (3), Michael Smith (4)

1. *Chester's Scholar, MetroHealth Medical Center, Cleveland, OH, United States*

2. *Emergency department, MetroHealth Medical Center, Cleveland, OH, United States*

3. *School of Medicine, Case Western Reserve University, Cleveland, OH, United States*

4. *Emergency Department, MetroHealth Medical Center, Cleveland, OH, United States*

Corresponding author: mikecwru@gmail.com

Keywords: team training, trauma, simulation

Introduction: MetroHealth Medical Center operates the only Level I trauma center in the area and trauma resuscitation requires teamwork skills. We hypothesize that teamwork skills will show room for improvement and a simulation-based team training exercise will improve those skills.

Methods: Prior to intervention, we observed actual trauma resuscitations led by either emergency medicine or surgery residents using trained observers to obtain a baseline of team leadership skills. The primary observation tool used was a trauma resuscitation team leader evaluation developed at MetroHealth designed to score a variety of factors as well as mark any critical omissions. Two other

tools were used: TeamSTEPPS, containing five different categories of scored components, and the Behavioral Assessment Tool, originally developed for use in the neonatal intensive care unit. Preliminary data was collected over 65 days and analyzed for possible trends that might aid in the simulation-based orientation to be implemented in August 2012.

Results: Overall, trauma resuscitation leaders scored well below the possible number of points earned across all leadership categories. No significant difference was found between the scores of surgery residents and emergency medicine residents. Similarly, no significant difference was found between scores at different times of the day, week, or month. This preliminary data indicates that there is room for improvement among trauma resuscitation teamwork, especially in leadership categories.

Conclusions: As these issues are addressed throughout the team training, more effective leadership and teamwork will hopefully lead to improvement of already outstanding patient care and outcomes.

Po-661

Front of the Auditorium poster area

SIMULATION IN PRE-HOSPITAL CARE

Lars Lundberg (1), Magnus Andersson Hagiwara (1), Anders Jonsson (1)

1. *School of Health Sciences, University of Borås, Borås, Sweden*

Corresponding author: llg@telia.com

Keywords: Pre-hospital, EMS, simulation

Simulation has become an integrated part of continuous medical education. There is a general acceptance that simulation is an effective and much appreciated technique for training of different diagnostic and therapeutic procedures, as well as for training of more complex non-technical skills among members of a medical team. However, most of the training performed in simulation centres in Europe targets procedures performed in a hospital setting. Simulator training for pre-hospital emergency care is used to a lesser extent, at least for non-military purposes.

Pre-hospital emergency care is generally characterised by a wide range of medical conditions, in combination with time pressure and lack of clinical information. It is a high-risk discipline, that would likely benefit from the use of simulator training. Why then is simulation not used to a higher extent?

One reason could be that there is a large variety among the different national systems set up for pre-hospital care in Europe. Another reason might be that the number of educators and researchers focusing on this particular field is rather small.

A Pre-Hospital Special Interest Group (PH-SIG) was founded in June 2012 during the annual meeting with the Society in Europe for Simulation Applied to Medicine (SESAM). The aim for this group is to become an active European network

for pre-hospital simulation educators and researchers. One of the main tasks is to compile current pre-hospital research projects in Europe involving simulation, with the aim of coordinating a future common research program. Such developmental training and research projects could for example include:

- Scene assessment simulation
- Modelling process and outcomes
- Evaluation of computerized decision support systems
- Evaluation of compliance with clinical practice guidelines
- Interprofessional team training outcomes
- Zero fidelity communication
- Simulation in mixed reality environments
- Decision-making
- Ethical dilemmas
- Organisational cost-benefit analyses
- Transfer of knowledge from simulation to clinical practice

Po-662

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TRAINING OF AMBULANCE CREWS ON STANDBY USING MOBILE PRE-HOSPITAL SIMULATION

Guillaume ALINIER (1,2), C. CAMPBELL (1), L.A.H. AL SHAIK (1), D. HUTTON (1), R. OWEN (1)

1. Ambulance Service, Hamad Medical Corporation, Doha, Qatar
2. University of Hertfordshire, Hatfield, UK

Corresponding author: g.alinier@herts.ac.uk

Keywords: Mobile simulation, scenario, ambulance

Aim: Training and monitoring of clinical skills and competencies are important components of the provision of safe and effective care and should ideally be done on a regular basis, however engaging staff in such activities can be very disruptive to service provision. The aim of this project is to establish a training process making effective use of the time of ambulance crews on standby by engaging them in hands-on training activities (Alinier & Newton, 2013). Recently, the average down time for an ambulance unit between emergency calls has determined to be around 61 minutes. This varies greatly during the time of the year, day of the week, and geographical standby location. Based on that information it is possible to determine when and where the provision of in-situ training is most suitable and less likely to be disrupted. Another key element to take into consideration is the local climate (high temperatures and dust) which makes outdoor training impossible for over half of the year and hence influences how and where the training occurs away from the Ambulance Service (AS) headquarter.

Methods: The training process under development requires two ambulances per training team. It involves the engagement of a single ambulance paramedic (AP) crew or one paired with a critical care paramedic (CCP) in scenario-based simulation training at the road side or in-vehicle depending on the weather. The facilitation of the simulation session would be done by two technically

competent and simulation trained AP and CCP instructors travelling with a standard ambulance loaded with simulation equipment (Patient simulator and audio-visual equipment). In addition another ambulance with APs would accompany the instructors to act as a replacement crew and cover the particular standby location. Due to the travelling time between standby locations and considering a session duration of 90 minutes, the training team would be expected to facilitate scenarios for 3 crews per day. The session duration consists of the setup time, a short briefing, participation of the crew in the scenario, the scenario debriefing, and tidying up the equipment.

Results: Through this process, basing calculations on one training team operating day time weekdays only, all APs and CCPs within HMC-AS (n=650 staff, excluding Patient Transport Service) could be engaged in one road-side scenario-based training session within 22 weeks. The continuing facilitation of this mobile training process with various pre-hospital scenarios supplemented by other simulation training interventions in the comfort of the ambulance base would ensure that the APs and CCPs are regularly exposed to a range of clinical cases and have opportunities to practise teamwork and crisis management. It also provides a unique opportunity to assess staff competencies, identify skills deficiencies, and encourage reflection. Our pilot simulation sessions have so far been well received by the staff involved as is generally the case with pre-hospital care participants (Power et al., 2013).

Conclusions:

This approach is only one aspect of continuing simulation-based education in which our staff will be involved. It aims at developing staff to operate at the expected level of clinical practice, remain familiar with all HMC-AS clinical practice guidelines, and maintain professional standards. In the future it is expected that the AV recordings will be made available to staff for personal review through an online managed learning environment.

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Po-663

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PROFILE OF ALLERGIC DRUG REACTIONS IN A HOSPITAL EMERGENCY DEPARTMENT

Inmaculada López-leiva (1), José Valero-rolan (1), Rafael Infantes-ramos (1), Iván Villar-mena (2), Cristina Fernández-figares (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain
2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Emergency department, Allergic reaction, Drug

Aim (s) or purpose:

To describe the characteristics of patients with allergic medication reaction in an Hospital Emergency Department.

Design and methods:

Design and study: Cross-sectional study, observational study.

Data Type: Process and intermediate outcome

Technical data: dimensions of quality: scientific-technical quality or professional competence, adequacy and continuity of care.

Site: Emergency Department, Carlos Haya Regional University Hospital, Málaga, Spain.

Subjects: All patients presenting to a hospital emergency as the reason for skin, allergic, urticarial and drug reactions throughout the year 2012. After reviewing the patient's medical history shows that have had a reaction produced by a drug (N= 73).

Instruments: computerized medical record of patients (DIRAYA software), randomly chosen.

Data sources for the study: data from the collection ledger and translation made in the SPSS table. Version 15 (SPSS. V15).

Variables: Age, sex, Nationality, Use of ambulance, Destination (Home Observation area or unknown), use of additional test and priority attention (triage numerical scale of 5 intensities down by severity).

Results:

We analyzed 73 patients in the Emergency Unit with allergic drug reaction. 65,8 % (48) female, mean age 46,6 years and 34,2 % (25) male, mean age 49,24 years. Most of patients had Spanish nationality (87,7%) and they were walking alone without ambulance (91,8%). 94,5% (69) not need additional tests and discharge destination was home in 86,3% (63), was an entry in the observation area in 11 % (8) and 2,7% (2) disappeared. On a scale of triage of 5 for value-related numbers in descending severity, 5,5 % had a priority 5 (the lowest possible severity and priority), 56,2 % had a priority 4 and 38,4 % had a priority 3.

Conclusion:

The profile of allergic reactions to drugs in our regional hospital emergency are women with an average age of 47, of Spanish nationality, who go walking, they did not need additional tests and their destination was home. The most common priority is 5 on a scale of 5 degrees downward intensity.

Po-664

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MEDICATIONS CAUSAL AND MOST COMMONLY AFFECTED LOCATIONS BY DRUG ALLERGIC REACTIONS IN THE EMERGENCY DEPARTMENT OF A REGIONAL HOSPITAL

José Valero-roldan (1), Inmaculada López-leiva (1), Cristina Fernández-figares (1), Iván Villar-mena (2), Rafael Infantes-ramos (1)

1. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MÁLAGA, Spain

2. EMERGENCY DEPARTMENT, HOSPITAL REGIONAL CARLOS HAYA, MALAGA, Spain

Corresponding author: pepevalrol@hotmail.com

Keywords: Locations, Allergic reaction, Medicaments

Aim(s) or purpose:

To identify drugs that cause allergic reactions most frequently drug and principal site of involvement in the emergency department of a regional hospital

Design and methods:

Design and study: Cross-sectional study, observational study.

Technical data: dimensions of quality: scientific-technical quality or professional competence, adequacy and continuity of care.

Site: Emergency Department, Carlos Haya Regional University Hospital, Málaga, Spain.

Subjects: All patients presenting to a hospital emergency as the reason for skin, allergic, urticarial and drug reactions throughout the year 2012. After reviewing the patient's medical history shows that have had a reaction produced by a drug (N= 73).

Instruments: computerized medical record of patients (DIRAYA software), randomly chosen.

Data sources for the study: data from the collection ledger and translation made in the SPSS table. Version 15 (SPSS. V15).

Variables: Age, Sex, medicaments causal drug allergic reactions, locations affected by allergic drug reaction.

Results:

We collect the medical episode of 73 patients attending casualty with allergic drug reaction, 25 men (34.2%) and 48 women (65.8%) with a mean age of 47.51 years. The medication that caused the allergic reaction was in 14 patients (19.2%) for non steroids anti-inflammatory drugs, 15 patients (20.5%) for amoxicillin-clavulanate, 8 patients (11%) by another different antibiotic, 6 patients (8 , 2%) Metamizole, 5 patients (6.8%) for Paracetamol, 6 patients (8.2%) for some topical cream and 19 patients (25.9%) by other medicines. Of the 73 patients analyzed, presents 71.2%, skin involvement, 37% facial involvement, 16.4% oral involvement, uvula edema are 6.8% and 2.7% respiratory involvement.

Conclusion:

The most common drugs that cause allergic reactions are non steroids anti-inflammatory drugs, amoxicillin-Clavulanate, metamizol and paracetamol. The most commonly affected are the facial skin lesions and, while it is rare oral involvement, respiratory and uvula edema.

Po-665

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METHEMOGLOBINEMIA CAUSED BY LOCAL ANAESTHESIA; A CASE REPORT CAUSED BY LOCAL ANAESTHESIA; A CASE REPORT

Sabiha Sahin (1), Adnan Sahin (2)

1. Pediatric Emergency Department, ESOGUMF, Eskisehir, Turkey
2. General Surgery, ESOGUMF, Eskisehir, Turkey

Corresponding author: sabiha.sahin@mynet.com

Keywords: Methemoglobinemia, local anaesthesia, child

Objective: Methemoglobinemia, a rarely seen cause of cyanosis, is a disease that should be considered in the differential diagnosis of childhood cyanosis. In a cyanotic infant, when the cyanosis don't improve by oxygen introduction and blood gases are into normal range and, if no disease related to respiratory, cardiovascular and central nervous system are found to explain the sepsis, methemoglobinemia should be considered. We aimed to report this case to emphasize the idea that local anaesthetics which are commonly used for circumcision feast during neonatal period in our country can cause hethemoglobinemia.

Case: A thirty six -day-old male infant with a history of prilocaine introduction as local anaesthetic before the circumcision in a private clinic and developed extensive bruising all over the body about one hour after prilocaine introduction was brought to Eskişehir Osmangazi University Faculty of Medicine, Department of Pediatric Emergency because of the cyanosis. Despite the extensive cyanosis on the physical examination and oxygen saturation of 72 %, infant's systemic examination findings are normal.

Results : According to laboratory investigations, Hb was 10.9 gr/dl, Htc was 32.5%, white blood cell count was 11200/mm³, thrombocyte was 432.000/mm and blood gas pH was 7.38, pCO₂ was 48 mmHg, pO₂ was 60 mmHg, BE was -3,5 mmol/L and HCO₃:22.3 mmol/L. Biochemical values were within the normal range. Also, lung radiography was normal but methemoglobine ratio was 53% in blood. The patient was taken to the intensive care unit with the diagnosis of methemoglobinemia. Methylene blue of 0.1-0.2 ml/kg was introduced intravenously as bolus. Cyanosis resolved completely after four hours and methemoglobin level was measured as 3.5%. **Conclusion:** We want to indicate that prilocaine which is used for local anaesthesia in surgeries may be undesirable because of methemoglobinemia particularly in children under six months.

Po-666

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SELF-POISONING WITH DATURA STRAMONIUM IN EMERGENCY DEPARTMENT: TWO CASE REPORTS

Alexandru Nicolae Carstea (1), Gabriela Filip (1), Rodica Daniela Gavrilă (2), Vasile Gavrilă (1)

1. Emergency Department, Emergency County Hospital, Timisoara, Romania

2. Department of Family Health Care Providers, Romanian National Society of Family Medicine, Timisoara, Romania

Corresponding author: gavrilă_vasile@yahoo.com

Keywords: Datura Stramonium, self-poisoning, anticholinergic syndrome

Introduction: Datura stramonium is an annual plant distributed throughout most parts of temperate regions of the world and contain tropane alkaloids such as scopolamine, hyoscyamine, and atropine. The plant is known by various names that vary from country to country and from one region to another: Jimsonweed, Jamestown weed, Thorn Apple, Devil's Trumpet, Moonflowers in North America; Loco weed, Angel Trumpet, Chamiso, Estramonio in Spain; Tatoore in Iran; Sikrane in Algeria; sehharotu, sihribazotu in Turkey; ciumafaie or laur in Romania. All parts of the plant are toxic, but the leaves and the seeds are the usual source of poisoning. **Case report:** We report two cases of self-poisoning with Datura Stramonium in two young men who presented in the emergency department with altered mental status and behavioral disorders. One patient was brought by the ambulance after he suffered a calcaneal cominutive fracture by jumping from the first floor due to hallucinatory syndrome, and the other was transferred from another hospital for behavioral disorders that started 20 hours ago. On admission in the Emergency Department the patients were presented with a typical anticholinergic syndrome: hallucinations, agitation, confusion and combative behaviour, mydriasis, dry mouth. **Vital signs:** mild sinus tachycardia with moderate increase of respiratory rate and normal temperature for both. The biological results revealed moderate increase levels of creatine kinase, creatine kinase MB and lactic dehydrogenase. Cerebral scan was normal and toxicological test for cocaine, amphetamine, barbiturics, ethanol and methadone were negative. Intravenous fluids, activated charcoal and diazepam were administered in the Emergency Department. Both patients were transferred to Intensive Care Unit and none of them received physostigmine. In Intensive Care Unit repeated neurological examination revealed a gradual improvement of their level of consciousness with disappearance of tachycardia, mydriasis, delirium and agitation. On the second day of hospitalization the neurological exam was normal and patients were transferred to the psychiatric service. Both patients had amnesia episode after recovery. **Conclusion:** The prognosis of Datura Stramonium intoxication is usually favourable and the treatment is essentially supportive. Emergency physicians should consider Datura intoxication in adolescents or young adults patients with unexplained anticholinergic toxicity.

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PATTERN OF ACUTE POISONING OF ADULT PRESENTED IN EMERGENCY COUNTY HOSPITAL, TIMISOARA, ROMANIA

Ovidiu Horea Bedreag (1), Alexandru Nicolae Carstea (2), Vasile Gavrila (2), Dorel Sandesc (1)

1. Intensive Care Unit, Emergency County Hospital, Timisoara, Romania

2. Emergency Department, Emergency County Hospital, Timisoara, Romania

Corresponding author: gavrila_vasile@yahoo.com

Keywords: acute poisoning, emergency department, suicidal poisoning

Introduction: Acute poisoning is one of the most common reasons for visiting Emergency Department and is a major cause of mortality and morbidity in young adult patient worldwide.

Material and methods: A retrospective analysis of patients diagnosed with acute poisoning and admitted to the Emergency Department (ED) of Timisoara County Hospital between 1 January 2012 and 31 December 2012 was carried out. The aim of this analytical retrospective study was to evaluate etiological and demographical characteristics of acute poisoning in adult patients admitted to ED. The data regarding age, gender, date and time of emergency department visit, place of residence (rural or urban), type of poison, time between poisoning and admission in the hospital, reason of exposure, route of exposure, exposure time, duration of hospitalization, history of psychiatric disorders, complications and discharge profile were collected from the medical records. Poisoning Severity Score was used to determine the severity of poisoning. Poisons involved in the exposure were classified into one of ten categories: pharmaceuticals products, illicit drugs, gases, pesticides, raticides, cleaning agents, corrosives, venomous animal, mushrooms and plants. The drugs were categorized into nine subgroups: psychoactive drugs (including antipsychotics, benzodiazepines etc.), antiepileptics, analgesics, antibiotics, NSAID's, cardiovascular drugs, antidiabetics, multiple drugs, others (hormones, vitamins, antiulcerous drugs, anticholinergics and antiemetics etc.) and unknown.

Results: During the study period a total of 67837 patients were presented in the ED and 266 of these were admitted for acute poisoning (0.39%). The female to male ratio was 1.3:1 and the most affected age group was 16-35 years age (n=142 cases, 53.38%). Mean ages of patients was 35.7+/-15.43 years. Suicidal poisoning was the observed etiology in the majority of cases (n=222 cases, 83.46%). Pharmaceutical products were the most common category of substances involved in acute poison exposure (n=161 cases, 60.52%) followed by gas poisoning (n=26 cases, 9.77%) and illicit drugs (n=16 cases, 6.01%). The substances most frequently involved were benzodiazepines (n=47 cases, 17.67%). Suicidal poisoning was the most observed etiology in the majority of cases (n=222 cases, 83.46%). Most patients had mild clinical forms (severity grades 0, 1 and 2). In contrast, 62 patients required admission in the Toxicology Department of Intensive Care Unit. Moreover, the mortality rate due to poisoning was 2.25% (6 patients). The mean length of hospitalization was 3.5+/-4.85 days.

Conclusion: Acute poisoning is one of the common problems presenting to the Emergency Department and the reduction of suicide attempts is a major objective. This study suggests that morbidity for adult patients with poisoning varied by sex, age, and type of poison. Length of hospitalization was affected by age, arrival time to ED, severity of poisoning and type of poison.

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A RARE CASE OF INTOXICATION: THE STORY OF A FAMILY OF THREE INTOXICATED WITH CARBON DIOXIDE

Virgina Bologa (1), Alina-mihaela Busan (1), Cristiana Geormaneanu (1), Alexandru Marinescu (1)

1. Emergency department, University of Medicine and Pharmacy Craiova, Craiova, Romania

Corresponding author: alina_busan@yahoo.com

Keywords: carbon dioxide, intoxication, wine fermentation

Carbon dioxide intoxication is very rare and very hard to diagnose due to the fact that there are no specific signs and symptoms. Such intoxication can occur when the level of carbon dioxide rises in a room where there is no ventilation. This happens in cellars where there are barrels with fermented grapes for wine production and that have no windows. The air with more than 0,5 - 2% of carbon dioxide is toxic, deadly at more than 30%.

We present the case of a family intoxicated with carbon dioxide in such conditions.

The mother, E.V., aged 46, presented in the ER with altered state of consciousness, cervical spine flexion, left shoulder pain, polipnea, dyspnea, sudden onset tachypnea after falling from about 2m to standing in a cellar with high carbon dioxide concentration. The physical exam reveals edema, worm skin, ecchymosis lesions, in the left subclavian region, mydriasis, diminished breath sounds, subcutaneous emphysema in the upper 1/3, edema on the left anterior thoracic wall, left superior member plegia, obnubilation, confusion, heart rate:111, blood pressure: 92/64 mmHg.

Laboratory showed: Ht: 40%, Hgb: 8.2%, Leuc: 15100/mm³, Urea: 57mg%, Creatinine: 2.1 mg%,

SGOT / AST: 274.5 U / L, SGPT / ALT: 623 U / L, Amylase 349 U / L, Total Bilirubin: 0.4 mg / dl, Myoglobin: 627 U / L.

Ultrasound examination: 2-3 mm fluid in the Morrison space, heterogeneous spleen

X-ray examination: no posttraumatic bone lesions

CT scan: no traumatic lesions of cranium, posttraumatic bone lesions of cervical spine, unorganized bilateral infiltration, paramediastinale interstitial changes which can be of toxic etiology or of a preexisting cause, bilateral low effusion without pericardial effusion, thickening of the left anterior pararenal fascia with diffuse edges (a pancreatic reaction may be present), fatty liver, gallbladder sediment

and morphological integrity of spleen and kidney, without abdominal collections

DIAGNOSIS: carbon dioxide poisoning, sinus tachycardia, hyperkalemia, metabolic acidosis, multiple organ dysfunctions in observation, left hemiparesis.

Treatment: administration of: Dexamethasone i.v. 4 mg, Hydrocortisone Hemisuccinate i.v. 200mg, Insulin 1 IU, Glucose 5% infusion, 500ml, Enalaprilum i.v. 25 mg, 2x 500ml Salin solution, Tetanus Vaccination, another 2 units of salin solution, and 1 ampoule of Dexamethasone. Oxygen was also administered.

The patient's condition has improved and the recommendation is transfer to Intensive Care Unit.

The father, E.F., aged 52, and daughter, E.E., aged 25, died due to carbon dioxide intoxication. Forensic report of the father showed: multiple bruising and excoriations, extra cranial hemorrhagic infiltration, hemorrhagic pleurisy, cardiomegaly and generalized visceral stasis.

Forensic report of the father showed: multiple bruising excoriations, epicranian infiltrates, serocitrin pleurisy, generalized visceral report.

The conclusions of the forensic report in both cases: violent death, produced by poisoning wine fermentation gas, lesions of violence produced by hard body strikes and there is no causal link between the lesions and the death. In the case of the father there was an alcohol level of 4% and 0% in case of the daughter.

Discussions: Carbon dioxide is a colorless gas with a density of 1,526. CO₂ dissolves in the blood causing metabolic acidosis. It can cause acute poisoning with a state of deep narcosis, with muscle relaxation and abolition of reflexes, but more important attempts to rescue might cause the death of the rescuer. The lesions are uncharacteristic, including marked cyanosis, rashes, petechial, organ stasis, there for the impossibility of a certain diagnosis without knowing the fact that the patient was found in an environment with high doses of CO₂. The forensic report isn't specific either. The treatment includes removal from the environment, artificial respiration, oxygen therapy, respiratory and cardiac analeptics.

The particularity of this type of intoxication is that is very rare and very hard to diagnosis without knowing where the victim was found. It is also a very dangerous one due to the fact that it can cause death easily but once the victim was removed from the environment the recovery is rapid and sure.

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CARDIAC AND NEUROMUSCULAR EFFECTS OF ACUTE ORGANOPHOSPHATE POISONING

Mehmet Yuzugullu (1), Zeynep Kecec (1), Filiz Koc (2), Gulsah Seydaoglu (3)

1. Emergency Medicine, Cukurova University Medical School, Adana, Turkey
2. Norology, Cukurova University Medical School, Adana, Turkey
3. Biostatistics, Cukurova University, Adana, Turkey

Corresponding author: zkecec@cu.edu.tr

Keywords: Organophosphate Poisoning, Neuromuscular Effect, Cardiac Effect

Purpose: The knowledge about cardiac and neuromuscular effects of organophosphate poisoning depends on limited publications and case reports. In this study, we aimed to determine the agent type, cardiac and neuromuscular effects of organophosphate poisoning and the influence of these information in clinical approach and treatment modalities that will guide further studies to prevent complications, disability and death.

Materials and methods: In this prospective study conducted for 2 years with the approval of ethical committee, 46 patients older than 15 years old who were admitted with cholinergic complaints with suspected organophosphate poisoning were evaluated. The demographic properties of the patients (age, gender), comorbidities, the route of exposure, the type of agent, serum pseudocholinesterase levels and cardiac markers (Electrocardiographic findings, Creatine kinase, Creatine kinase-MB, Troponin-T) on admission, 6th and 12th hours were recorded. After proper primary assesment and treatment Electromyography, Visual evoked potential, Somatosensory evoked potential were performed to evaluate the neuromuscular affect.

Results: Forty six patients, 27 (58,7%) females and 19 (41,3%) males were included in our study. Of this 91,3% was suicidal where 8,7% was accidental exposure. The most common Electrocardiographic finding was sinus tachycardia (30,4%). While long QT interval (15,2%), negative T wave (4,3%), left bundle branch block (2,2%), righth bundle branch block (2,2%), nodal extra systole (2,2%) were other common findings. The elevated Creatine kinase was 65,2%, Creatine kinase-MB 52,2% and Troponin-T 4,3% as cardiac biomarkers, 76,1% of patients had decreased pseudocholinesterase levels supporting organophosphate poisoning. Electromyography of 20 patients were normal with normal neuromuscular junction functions. Latency and/or amplitude asymmetry were found in 4 (20%) patients in Visual evoked potential and 3 (15%) patients in Somatosensory evoked potential. All of the patients were discharged without sequela.

Conclusion: All though the mechanism of cardiac affects of organophosphate poisoning is still adilemma, this is an important clinical entity. There is no evoked potential studies performed in organophosphate poisoning although electroneurography repetitive and P300 studies exist in literature. More further studies are needed to evaluate the cardiac and neuromuscular effects of organophosphate poisoning.

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A CASE OF ACUTE CRESOL INTOXICATION

Ming Yuan Huang (1), Liong Rung Liu (1)

1. Emergency department, Mackay Memorial Hospital, Taipei, Taiwan

Corresponding author: lewis0815@gmail.com

Keywords: Cresol, chemical burn, Black urine and dark skin

Cresol, a common household disinfectant or industrial cleaner, can be fatal to human after ingestion. Although the lethal dose of cresol is about 1g/kg, the information on immediate dangerous dose of which to human life is lacking. Small amount of cresol have been reported to cause death soon after the ingestion, however, as in our report, people can survive a large dose of cresol intoxication with no sequelae. A 59-year-old female swallowed 200 ml of concentrated cresol solution (50%) in a suicide attempt. She was intubated in a resuscitation about 30 minutes after the ingestion and was placed on mechanical ventilator for 5 days. No organ failure or complication developed during the treatment. She was discharged home on day 14 after the hospitalization, and was doing well at follow-up 6 months after the ingestion

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EPIDEMIOLOGICAL ANALYSIS OF THE CASES ADMITTED TO THE EMERGENCY DEPARTMENT WITH PHARMACEUTICAL POISONING

Ozgun Kosenli (1), Salim Satar (2), Mehmet Oguzhan Ay (2), Aybike Kosenli (3), Ayca Acikalin (4), Nalan Kozaci (5), Muge Gulen (2), Alim Cokuk (6)

1. Emergency Medicine Service, Tarsus State Hospital, Mersin, Turkey
2. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
3. Internal Medicine Service, Tarsus State Hospital, Mersin, Turkey
4. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
5. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey
6. Emergency Medicine Service, Kirklareli State Hospital, Adana, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Drug poisoning, emergency, epidemiological

Background: This study aimed at the epidemiological analysis of the patients diagnosed with pharmaceutical poisoning in our Emergency Department.

Methods: Patients 18 years and over, diagnosed with pharmaceutical poisoning in our Emergency Service between December, 1 2009 and December, 31 2010 were included in this study. Age, sex, cause of poisoning, way of posing, admission time previous interventions applied to the patients referred from another center, treatment after the admission, level of consciousness at admission, condition at admission, the length of hospital stay and outcome for inpatients were recorded. SPSS 17.0 statistical program was used for the statistical analysis of the obtained data.

Results: Total 1507 patients were included to this study and 70.3% of them were female. The mean age of female patients were 28.43 ± 9.07 . Statistically significantly, spring and summer months were determined to be associated with higher number of cases ($p = 0.02$). Poisonings have been determined to occur more frequently with multiple pharmaceutical intake (43.1%) and for suicidal intent (93%). The mean duration of arrival at emergency department was found as 2.28 ± 2.2 hours. While 1277 (84.7%) patients directly applied to the emergency services, 230 (15.2 %) patients were referred from another medical institution. No treatment or intervention had been applied to 29 (12.6%) out of 230 referred patients, in the referring health institution. 94% of the patients were conscious at admission and oral intake was the most common way of intake in poisoning cases. While 57% of the patients were treated and discharged from emergency service, 647 (43 %) patients were admitted to the emergency critical care unit. The mean length of hospital stay in the admitted patients was 1.65 ± 1.44 days. 627 (96.91%) of these patients discharged from the hospital after the termination of their treatment, 18 of them were referred to another health institution and only 1 patient was dead on arrival in the emergency department, and no patient died in Emergency Department due to poisoning.

Conclusion: Our study determined that the patients were mostly female, admitted to the Emergency Department due to multiple pharmaceutical intake for suicidal intent in spring and summer. Almost all of them were discharged from the Emergency Department after their treatment and observation.

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EFFECTIVENESS OF THERAPEUTIC PLASMA EXCHANGE IN PATIENTS WITH INTERMEDIATE SYNDROME DUE TO ORGANOPHOSPHATE INTOXICATION

Mustafa Yilmaz (1), Ahmet Sebe (2), Mehmet Oguzhan Ay (3), Umut Gumusay (4), Metin Topal (3), Mesude Atli (1), Ferhat Icme (5), Salim Satar (3)

1. Emergency Medicine Service, Necip Fazil State Hospital, Kahramanmaraş, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
4. Emergency Department, Elazığ Education and Research Hospital, Elazığ, Turkey
5. Emergency Department, Ankara Atatürk Education and Research Hospital, Ankara, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Toxicology, organophosphate, therapeutic plasma exchange

Objective: We aimed to determine effectiveness of therapeutic plasma exchange (TPE) in patients with

intermediate syndrome (IMS) due to organophosphate intoxication.

Methods: Patients diagnosed with IMS due to organophosphate intoxication were included in this prospective study. TPE procedure was performed with fresh frozen plasma as a replacement fluid via Fresenius-AS-TEC 204 device by Therapeutic Apheresis Unit to patients who developed IMS during follow up. Samples were taken from patient's blood and waste plasma collected in the device before and after TPE procedure to be studied in laboratory for detection of organic phosphate and pseudocholinesterase (PChE) levels. In this study, SPSS 18.0 software package was used for statistical analysis of the data obtained. Level of statistical significance was taken as $p < 0.05$ for all tests.

Results: Of all 17 patients, 4 (23.5%) were female and 13 (76.5%) were male. A statistically significant decrease was detected in organic phosphate levels in the plasma of patients after TPE procedure ($p = 0.012$). A statistically significant increase was detected in PChE levels in the plasma of patients after TPE procedure ($p = 0.014$). Of 17 patients included in the study, 13 patients showed clinical improvement and were discharged after the TPE process.

Conclusion: In our study, it was observed that a significant decrease in the level of blood plasma organophosphate and a significant increase in the level of PChE were achieved with TPE process in the early period of IMS due to organophosphate poisoning. This study indicates that TPE is one of the effective treatment options for IMS due to organophosphate intoxication.

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RELATIONSHIP BETWEEN MORTALITY AND ACUTE INFLAMMATORY MARKERS, ERYTHROCYTE CHOLINESTERASE, SERUM CHOLINESTERASE LEVELS IN THE ACUTE ORGANIC PHOSPHORUS INTOXICATION

Meryem Genc Karanlik (1), Ahmet Sebe (2), Mehmet Oguzhan Ay (3), Ayca Acikalin (2), Mesude Atli (4), Serenat Citilcioglu (5), Muge Gulen (3), Salim Satar (3)

1. Emergency Medicine Service, Kilis State Hospital, Kilis, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
4. Emergency Medicine Service, Necip Fazil State Hospital, Kahramanmaraş, Turkey
5. Emergency Medicine Service, Cukurova Dr. Askim Tufekci State Hospital, Adana, Turkey

Corresponding author: droguzhan2006@myynet.com

Keywords: Organophosphate, acute inflammatory markers, mortality

Aim: In our study, we aimed to investigate the relationship between the mortality and acute inflammatory markers,

serum - erythrocyte cholinesterase levels in patients with organophosphorus poisoning.

Material and Methods: We planned to take patients who administered to emergency department with organic phosphorus poisoning prospectively for 2 years after approval by the Ethics Committee of Cukurova University. Patients with hereditary cholinesterase deficiency, liver disorders, malnourished, anemia, using cocaine, morphine, codeine, and medications such as succinylcholine were excluded from the study. A total of 39 patients were included in the study. Standard data entry form has been created. Blood samples were taken from all of the patients included in the study for use in study after diagnosis. White blood cell (WBC) and platelet counts, fibrinogen, ferritin, C-reactive protein (CRP), tumor necrosis factor-alpha (TNF- α), interleukin-1 (IL-1), interleukin 6 (IL-6), interleukin 10 (IL-10), erythrocyte and serum cholinesterase levels were determined from blood samples in Central Laboratory of Hospital of Balcali in Cukurova University School of Medicine. SPSS 18.0 package program was used for statistical analysis of data. The statistical significance level of all tests was $p < 0.05$.

Results: The laboratory data of patients who died due to organophosphorus poisoning were compared with the patients discharged; the mean serum cholinesterase levels of the patients who died were statistically low ($p = 0.006$), platelet counts were low ($p = 0.031$), fibrinogen levels were high ($p = 0.011$). However, there was no statistically significant differences between erythrocyte cholinesterase ($p = 0.984$), IL-1 ($p = 0.139$), IL-6 ($p = 0.513$), IL-10 ($p = 0.089$), TNF- α ($p = 0.074$), CRP ($p = 0.081$), ferritin ($p = 0.275$), WBC ($p = 0.272$) levels of the patients who died or discharged. There was a statistically significant relationship between fibrinogen levels and erythrocyte cholinesterase ($p = 0.013$), serum cholinesterase ($p = 0.029$) levels of the patients who discharged or died.

Conclusion: Low serum cholinesterase levels, low platelet count and high fibrinogen levels were found to be important factors for the high mortality rate of organic phosphorus poisoning. This study will be useful for emergency physicians to be able to predict mortality of organic phosphorus poisoning and contribute to more clinical experiences. These laboratory tests can be used as prognostic markers after more detailed studies.

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THE RELATIONSHIP BETWEEN ELECTROCARDIOGRAPHIC CHANGES, CHOLINESTERASE LEVELS AND MORTALITY IN ACUTE ORGANOPHOSPHATE POISONING

Mesude Atli (1), Ahmet Sebe (2), Mehmet Oguzhan Ay (3), Meryem Genc Karanlik (4), Ayca Acikalin (2), Nalan Kozaci (5), Mustafa Yilmaz (1), Salim Satar (3)

1. Emergency Medicine Service, Necip Fazil State Hospital, Kahramanmaraş, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey

3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

4. Emergency Medicine Service, Kilis State Hospital, Kilis, Turkey

5. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Organophosphate, cholinesterase, electrocardiographic findings

Aim: In our study we aimed to investigate the relationship between electrocardiographic (ECG) changes, cholinesterase levels and mortality due to acute organophosphate poisoning.

Material and Methods: We planned to take patients who administered to emergency department with organic phosphorus poisoning randomized and prospectively for 2 years between 01.08.2009 – 31.08.2011 after approval by the Ethics Committee. The electrocardiograms of the patients were taken after admission to the emergency department, before the treatment (atropine and pralidoxime application). Blood samples were taken and serum - erythrocyte cholinesterase levels were studied in the laboratory of our hospital. ECG findings, cholinesterase values and the final situation of the patients were recorded at the standard data entry form. SPSS 18.0 package program was used for statistical analysis of data. The statistical significance level of all tests was $p < 0.05$.

Results: The five of thirty nine patients (12.8 %) included in the study have died during the treatment. The electrocardiographic findings seen in patients in order of frequency; sinus tachycardia (48.7 %), prolonged QT interval (20.5 %), and right bundle branch block (20.5 %), ST-T wave changes (12.8 %), atrial fibrillation (7.7 %), right axis deviation (5.1 %), prolonged PR (2.5 %). There was no statistically significant difference between the ECG findings of the patient groups who died or discharged ($p \geq 0.05$). The mean serum cholinesterase levels of the patients who died were statistically lower than the discharged patients ($p = 0.006$).

Conclusion: There is not a significant relationship between ECG findings and the severity of organophosphate poisoning. There is a statistically significant relationship between mortality and low levels of serum cholinesterase due to severe poisoning. ECG findings and their effects to the mortality in organophosphate poisoning can give an opinion to the emergency physicians and contribute to their clinical experiences. However, more detailed studies are needed in this matter.

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THE RELATIONSHIP BETWEEN BLOOD LACTATE, CARBOXY-HEMOGLOBIN AND CLINICAL STATUS IN CO POISONING

Ferhat Icme (1), Nalan Kozaci (2), Mehmet Oguzhan Ay (3), Akkan Avci (3), Umut Gumusay (4), Mustafa Yilmaz (5), Zikret Koseoglu (3), Salim Satar (3)

1. Emergency Department, Ankara Atatürk Education and Research Hospital, Ankara, Turkey

2. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey

3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

4. Emergency Department, Elazığ Education and Research Hospital, Elazığ, Turkey

5. Emergency Medicine Service, Necip Fazıl State Hospital, Kahramanmaraş, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Carbon monoxide, Carboxyhemoglobin, Lactate

Aim: We aimed to determine the relationship between blood lactate, carboxy-hemoglobin (COHb) levels and the severity of clinical findings in patients with CO poisoning.

Material and Methods: Patients over 18 years old and of both gender who were admitted to Emergency Department with the diagnosis of CO poisoning between 10.02.2008 and 17.03.2011 were enrolled in this study. Detailed physical examination of each patient was performed, patients and their relatives were informed about the study and written consents were noted. The levels of consciousness, physical examination findings, electrocardiographic findings, Glasgow Coma Scale (GCS) scores, laboratory results (lactate, COHb, CK-MB, Troponin-I levels) and applied treatments (normobaric oxygen therapy (NBOT), hyperbaric oxygen therapy (HBOT)) were recorded to standart data entry form for each patient. "SPSS for Windows version 18" package program was used for statistical analysis of the data.

Results: Total 201 patients were included in this study. Thirty five patients (17.4%) received HBOT and lactate, COHb, CKMB, Troponin-I levels of this group were higher than the other patients. Lactate and COHb levels were statistically significantly higher in patients with GCS < 15 than the ones with GCS= 15 ($p < 0.01$). The patients whose both Troponin-I and CK-MB levels increased have higher lactate levels ($p = 0.038$), but COHb levels of these patients did not change ($p = 0.495$).

Conclusions: According to our study, blood lactate and COHb levels were both correlated with the changes of consciousness in CO poisoning. Blood lactate levels together with COHb in defining indications for HBO treatment might be suggested.

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EFFICACY OF HYPERBARIC OXYGEN THERAPY IN CARBON MONOXIDE PATIENTS

Han Joo Choi (1), Gab Teug Kim (1), Yong Hae Oh (1)

1. Emergency Medicine, Dankook University Hospital, Cheonan, Korea, (South) Republic of

Corresponding author: iqtus@hanmail.net

Keywords: Carbon Monoxide, Complications, Hyperbaric Oxygen Therapy

Purpose: Although hyperbaric oxygen therapy (HBO) is used for the treatment in the acute carbon monoxide (CO) poisoned patients, its efficacy remains controversial. This study was conducted to investigate whether HBO can reduce the late sequelae from CO poisoning.

Method: This prospective study included 138 patients with CO poisoning January 2009 to December 2012. To identify the efficacy of HBO in reduction of late sequelae of CO poisoning, we compared HBO group (n=91) with normobaric oxygen therapy (NBO) group (n=47). They were divided into three groups of alert, confused, and comatose mentality at admission. Late sequelae were considered to be present when the patients had clinical symptoms and signs of delayed neuropsychiatric sequelae (DNS) and persistent neurological sequelae (PNS) within 6 weeks after CO poisoning.

Results: Late sequelae were occurred rate of 44.9%. In patients with alert and confused mentality, there was no significant difference in rate of late sequelae of CO poisoning between HBO group and NBO group ($p < 0.1$). But, in patients with confused mentality, occurrence rate of late sequelae were lower in HBO group than NBO group at borderline level. (71.9% vs 100%, $p = 0.086$). The independent prognostic factor for late sequelae in CO poisoned patients was consciousness at admission ($p = 0.000$).

Conclusion: In patients with alert and confused mentality was no evidence of superiority of HBO over NBO. In comatose patients, HBO was associated with good outcomes than NBO.

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ELECTRON MICROSCOPIC EXAMINATION OF THE EFFECTS OF METHYL PARATHION EXPOSURE ON THE OVARIES

Deniz Aka Satar (1), Ozgul Tap (2), Mehmet Oguzhan Ay (3)

1. Andrology Laboratory, Adana Numune Education and Research Hospital, Adana, Turkey
2. Department of Histology and Embryology, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Methyl parathion, infertility, ovaries

Objective: In our study, we aimed to investigate histopathological effects of chronic methyl parathion exposure on ovaries at electron microscopic level.

Materials and Methods: In this study, Wistar albino type, adult, female rats with an average weight of 190-250 g

were used. 30 female rats, included in this study, were divided into 3 groups. Group I received only saline and was evaluated as the control group, whereas Group II received 1/50 percent of LD50 dose of methyl parathion and Group III received 1/20 percent of LD50 dose of methyl parathion every day at 130 pm orally by gavages during two estrus cycles (8 days). The rats at proestrus stage on the morning of 9th day of the study underwent bilateral ovariectomy. Ovarian tissues of the control and drug groups were examined under the electron microscope; primordial and growing follicles were included in the evaluation, however, corpora lutea were excluded taking into account the presence of remaining regressive corpora lutea from the previous cycles.

Results: Following examination of ovarian tissues of rats exposed to 1/50 and 1/20 percent of LD50 dose of Methyl parathion at electron microscopic level, it was detected that significant structural changes had occurred in developing follicles and ovarian stroma in both drug groups, and that primordial follicles had not been affected significantly from methyl parathion but necrosis had been developed in oocyte and granulosa cells of developing follicles, and that in 1/20 group in addition to these changes, apoptotic changes had been found in granulosa cells of developing follicles.

Conclusion: As a result of chronic exposure to methyl parathion, rat ovaries are significantly affected and follicular development is impaired. This state may explain the cause of infertility due to chronic pesticide exposure.

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THE RELATIONSHIP BETWEEN CARBON MONOXIDE INTOXICATION AND NEW GENERATION CORN TASSEL NARGHILE (WATER PIPE) SMOKING

Nurhak Aksut (1), Abdulkadir Gunduz (1), Yunus Karaca (1), Ahmet Mentese (2), Ozgur Tatli (1), Suleyman Turedi (3), Suha Turkmen (1)

1. Department of Emergency Medicine, KTU School of Medicine, Trabzon, Turkey
2. Department of Medical Biochemistry, KTU School of Medicine, Trabzon, Turkey
3. Department of Emergency Medicine, KTU School of Medicine, Trabzon, Turkmenistan

Corresponding author: drsuhaturkmen@hotmail.com

Keywords: Carbon monoxide poisoning, Narghile, Water pipe smoking

Objective

In addition to determining the effect on environmental CO levels of narghile consumption using corn tassel and similar substances, the primary aim was to investigate the effect of this new generation narghile consumption on blood COHb levels and whether this causes CO intoxication in active and passive narghile users.

Methods

Four hundred ninety-nine individuals exposed to narghile smoke were divided into four groups; Group I: active narghile smokers but cigarette non-smokers, Group II: active narghile smokers and active cigarette smokers, Group III: passive narghile smokers and non-cigarette smokers, Group IV: passive narghile smokers and active cigarette smokers. Fifty-nine healthy volunteers were enrolled as Group V, non-smoker controls, and Group VI, smoker controls. COHb levels were compared among the groups.

Results

Mean pre-exposure % COHb levels for groups I-IV were 2.61 ± 1.46 , 3.00 ± 1.37 , 2.09 ± 1.45 and 3.00 ± 2.13 , and 3.45 ± 1.92 , 4.17 ± 2.01 , 2.60 ± 1.66 and 4.50 ± 2.32 , respectively. Control group (groups V-VI) % COHb levels were 0.90 ± 0.82 and 1.60 ± 0.85 . COHb levels rose significantly after exposure to narghile smoke in all groups. COHb levels in all groups were higher than those in healthy individuals. Additionally, 12.8% of those exposed to corn tassel narghile smoke had critical values for CO intoxication.

Conclusion

Active narghile smoking has greater negative effects on COHb levels than passive smoking. Blood COHb levels in active and passive narghile smokers can rise to intoxication levels.

Key words: Carbon monoxide poisoning, Narghile, Water pipe smoking

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HYDROXOCOBALAMIN IN SMOKE INHALATION VICTIMS: 1-YEAR EXPERIENCE OF THE PRE-HOSPITAL MEDICAL SERVICES IN PARIS AREA, FRANCE.

Hugues Lefort (1), Dan Lu (2), Daniel Jost (1), Stéphane Travers (1), Cédric Ernouf (1), Laure Alhanati (3), Jean-luc Petit (4), Bruno Megarbane (5), Jean-michel Tourtier (1), Laurent Domanski (1)

1. Emergency Medical Department, Fire Brigade of Paris, Paris, France

2. Emergency department, Saint Antoine Hospital, Paris, France

3. Emergency Medical Department BSPP, Military University of Val-de-Grâce, Paris, France

4. Anesthesiology and reanimation department, Thionville Hospital, Metz, France

5. Medical and Toxicological Intensive Care Department, Lariboisière hospital, Paris, France

Corresponding author: hdldefort@gmail.com

Keywords: hydroxocobalamin, smoke poisoning, pre-hospital

Introduction: Cyanide is one of the major toxicants known to be responsible for death following fire smoke inhalation. Hydroxocobalamin is the cyanide antidote that has been proved both efficient and harmless. The aims of this study were to describe circumstances and outcomes of patients treated with hydroxocobalamin in out-of-hospital emergency situations.

Materials and methods: Retrospective observational multicentric study. All fire smoke-intoxicated victims treated with hydroxocobalamin by the pre-hospital medical services in Paris area were included. Age, sex, intervention, clinical features, carboxyhemoglobinemia (COHb), administered hydroxocobalamin dose, and short-term mortality were recorded. The main assessment endpoint was return of spontaneous circulation (ROSC) after hydroxocobalamin administration.

Results: In 2011, 968 fires resulted in 1809 victims of which 178 were managed by one of our interdepartmental out-of-hospital medical teams. Twenty patients (1.1% of all victims and 11.2% of the patients treated by any medical service) received hydroxocobalamin. The statistical analysis included 16 out of these 20 patients. The median age was 60 years [47.5; 64.5] with 8/16 males (50%). Five patients (31%) presented severe carbon monoxide intoxication with a median 48% [34.5; 49.5] COHb. Nine patients (56%) were in cardiac-arrest: six asystoles, one ventricular fibrillation, and two with unknown rhythm. ROSC was reached in 5/9 patients after administration of both epinephrine and hydroxocobalamin. Three out of the five patients who presented ROSC had received the recommended 10g hydroxocobalamin and were transported to hospital, while all the other patients only received 5g hydroxocobalamin.

Conclusion: Hydroxocobalamin administration is the first-line antidote in fire smoke-related cyanide poisoning in France. In case of initial cardiac-arrest on the scene, ROSC was obtained after hydroxocobalamin administration (mainly after 10g dose). Out-of-hospital physicians should be aware about the adequate hydroxocobalamin dose regimen to administer, in order to save lives.

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LICORICE INDUCED HYPOKALAEMIC PARALYSIS AND RESPIRATORY FAILURE: A CASE REPORT

Mehmet Oguzhan Ay (1), Abdulkadir Akturk (1), Ahmet Colakoglu (1), Alper Celikdemir (1), Nalan Kozaci (2), Ayca Acikalin (3), Akkan Avcı (1), Salim Satar (1)

1. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

2. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey

3. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Licorice, hypokalemia, paralysis

Licorice is the root of *Glycyrrhiza glabra*, which has a herbal ingredient, glycyrrhizic acid. Excessive intake of licorice may cause a hypermineralocorticoidism-like syndrome characterized by sodium and water retention, hypokalemia, hypertension, metabolic alkalosis, low-renin activity, and hypaldosteronism. However, hypokalaemic paralysis and

respiratory failure due to chronic licorice ingestion have rarely been reported. We report an 34 years old man who presented to the emergency department with respiratory failure and marked muscle weakness of all extremities that progressed to paralysis. The patient was conscious, had a dyspnea and tachypnea. His blood pressure was 160/80 mmHg, respiratory rate was 32/minute, and oxygen saturation was 86%. The major biochemical abnormalities were hypokalemia (plasma K⁺ concentration= 1.4 mmol/L) and metabolic alkalosis (HCO⁻= 43.2 mmol/L). A detailed history revealed that he had ingested 3-4 liters of licorice syrup daily for one week to get rid of kidney stone. The patient's respiratory distress and loss of muscle strength recovered completely after potassium replacement. Excessive intake of licorice should be kept in mind as a cause of respiratory failure and paralysis with a hypokalemia to avoid missing this recognizable and curable medical disorder.

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PYRETHROID – A COMMON POISONING IN AN UNCOMMON ROUTE

Narendra Nath Jena (1), Kiruthika Meenavarthini S (1), Binita Jena (2), Ramesh Ardhani (3), Senthilkumaran S (4)

1. Department of Emergency Medicine, Meenakshi Mission Hospital and Research Centre, Madurai, India

2. Department of Plastic and Reconstructive Surgery, Meenakshi Mission Hospital and Research Centre, Madurai, India

3. Department of Surgery and Surgical Gastroenterology, Meenakshi Mission Hospital and Research Centre, Madurai, India

4. Department of Emergency and Critical Care Medicine, Sri Gokulam Hospital, Salem, India

Corresponding author: drnaren11@gmail.com

Keywords: Insecticide, suicide, Prallethrin, cellulites, necrotizing fasciitis, limb threatening injuries

Insecticide poisoning is most common in rural India, as it is used widely for agriculture and household purposes. Pyrethroids are taken commonly through oral route or with pesticides and other poisons but subcutaneous injection of pyrethroid is rarely reported. We report a 49 year old female who attempted suicide by injecting commercially available insecticide (Good Knight mosquito repellent – prallethrin) into multiple areas of her body. She presented to our emergency department with cellulites with early compartment syndrome of affected limbs with ongoing necrotizing fasciitis. Early fasciotomy, multiple debridement and skin grafting were done for the patient and eventually recovered.

The clinical features, emergency department management of pyrethroid poisoning and the role of emergency physician in identifying such limb threatening injuries and timely surgical intervention for prevention of extensive tissue damage and death has been discussed in this article.

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IMPACT OF NEW UK PARACETAMOL OVERDOSE GUIDELINES

Galamoyo Nfila, Solmi Lee, James Binchy
Emergency Department, University Hospital, Galway, Ireland

Corresponding author: galanfila@gmail.com

Keywords: Paracetamol overdose, Toxicology guidelines, UK paracetamol overdose guidelines

Introduction: Paracetamol is involved in a large proportion of overdoses that present to the Emergency Department (ED), either as lone or mixed overdoses. Non-treatment of toxic levels can lead to fulminant liver failure.

Aim : The aim of this study was to determine to what extent the introduction of the new UK guidelines 1 will result in a greater number of patients needing treatment with N-acetylcysteine.

Method: All patients who had paracetamol levels done between September 2011 and August 2012 were identified from the laboratory. Details of those with positive levels were obtained from the ED notes. Time of overdose and time paracetamol levels were done was reviewed. Risk assessment documentation was also reviewed.

Results: A total of 523 patients were identified as having had paracetamol levels done. Of these 95 (18%) had detectable paracetamol levels. Fourteen ED notes were not available therefore eliminated from study. Thirteen (13%) charts had no documented time of ingestion. Of the 13, only 6 (6%) had presented following an overdose. The remainder had a toxicology screen as part of their workup. A total of 74 patients were evaluated.

Most of these patients presented between 8pm and 8am (63%), with male:female of 1:1.7,

The average age was 29, with a range of 14 – 69 years;

Eighteen (24%) patients were treated with N-Acetylcysteine in accordance with the current/old guidelines.. Assessing these patients against the new UK guidelines would have resulted in only 3 more patients having been admitted over the 12 months.

Risk assessment was only documented in 27 patients (36%).
Discussion : This study confirms that most patients who present following paracetamol overdose do not require treatment with N-Acetylcysteine. It also confirms that the introduction of the new UK guidelines, which lower the treatment threshold for all patients to the previous high risk line will result in a small increase in the number of patients requiring treatment. The need for risk assessment, which was poorly recorded in this study will also be eliminated.

Conclusion: The introduction of the new UK guidelines will, by eliminating the need for risk stratification, simplify the assessment and management of paracetamol overdose

without causing a large increase in the number of patients requiring admission for treatment.

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ACCIDENTAL POISONING TO ORGANOPHOSPHORADE - CASE REPORT

Ana Paula Boaventura (1), Cybelle Cristina Tomazin (2)

1. Faculty of Nursing, Estate University of Campinas - UNICAMP, Campinas, Brazil
2. Toxicology departament, Planitox, Campinas, Brazil

Corresponding author: anaboa@fcm.unicamp.br

Keywords: organophosphate, Accidental Poisoning, toxicology

INTRODUCTION: Insecticide group of organophosphates are widely used in different types of culture. Your use of correct form, within the safety standards hampers the risk of intoxication, as well as its storage and final disposal, preventing possible accidents. Its main mechanism of toxicity is the organophosphates competitively inhibit pseudo-cholinesterase and acetylcholinesterase, preventing hydrolysis and inactivation of acetylcholine. Acetylcholine accumulates at nerve junctions, causing malfunction of the sympathetic, parasympathetic, and peripheral nervous systems and Central Nervous System (CNS), and therefore immediacy of first aid interventions are necessary for a good prognosis intoxicated. **OBJECTIVE:** To report a case of poisoning by organophosphate that died because they were not instituted measures necessary emergency treatment. **CASE REPORT:** Patient, female, 12 years old, residing in rural areas, the pesticide ingested organophosphorus base (methamidophos) for attempted suicide due to personal problems. Showed characteristic symptoms of intoxication, being taken to the city hospital, performed gastric lavage, where he remained for about 12 hours, and was later transferred to a reference hospital in the city of Bauru-SP (Brazil). Had fasciculations, drooling, lung secretion, decreased level of consciousness and respiratory distress, was intubated and administered atropine in "bolus", staying for a few hours hemodynamically stable. Medical staff of the Intensive Care Unit were instructed on the importance of the maintenance dose of atropine in continuous infusion for service specializing in toxicology, however, such conduct was not adopted, and the patient evolved to death after 3 days. **DISCUSSION:** The symptoms from organophosphates are the muscarinic effects can include bradycardia, salivation, lacrimation, diaphoresis, vomiting, diarrhea, urination, and miosis, bronchorrhea, bronchospasm and acute lung injury; the nicotinic effects are Tachycardia, hypertension, mydriasis, and muscle cramps. Muscle fasciculations, weakness, and respiratory failure and the central effects are CNS depression, agitation, confusion, delirium, coma, and seizures, Hypotension, ventricular dysrhythmias, metabolic acidosis, pancreatitis, and hyperglycemia can also develop. Alterations of level of

consciousness, anxiety, paralysis, seizures and coma may occur. In acute exposure delayed toxicity can occur to highly lipophilic organophosphates, the emergency conduits was monitor vital signs frequently, Institute continuous cardiac and pulse oximetry monitoring, Monitor for respiratory distress and for clinical evidence of cholinergic excess, Determine plasma and/or red blood cell cholinesterase activities, depression in excess of 50% of baseline is generally associated with cholinergic effects, in severe poisoning cholinesterase activity may be depressed by 90% of baseline, Correlation between cholinesterase level sand clinical effects in milder poisonings may be poor, Obtain serial Elettcardiogram, Monitor electrolytes and serum lipase in patients with significant poisoning, Monitor pulmonary function in symptomatic patients, may help anticipate need for intubation. Administer antidotes: atropine for muscarinic manifestations in ADULT: 1 to 3 mg IV; CHILD: 0.02 mg/kg IV. If inadequate response in 3 to 5 minutes, double the dose. Continue doubling the dose and administer it IV every 3 to 5 minutes as needed to dry pulmonary secretions. Once secretions are dried, maintain with an infusion of 10% to 20% of the loading dose every hour. Admit to intensive care with continuous monitoring, ventilation, and inotropes as needed. Use the activated charcoal for large ingestions and consider nasogastric tube for aspiration of gastric contents, or gastric lavage for recent large ingestions, if patient is intubated or able to protect airway. Endotracheal intubation may be necessary because of respiratory muscle weakness or bronchorrhea. Is the most important consult a medical toxicologist and/or poison center for assistance with any patient with moderate to severe cholinergic manifestations. **CONCLUSION:** In Brazil, health professionals lack knowledge related poisoning cases. However, specialized services, reliable sources of such information, find great barrier in sharing with such professionals.

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RELEVANCE OF STAT TOXICOLOGICAL TESTS: IMPACT OF A TWO-LEVEL PRESCRIPTION TOOL

Mireille Bartoli (1), Damien Cadinot (2), Françoise Carpentier (2), Sabine Lautaret (3), Maxime Maignan (2), Carole Paquier (4), Philippe Pommier (2), Damien Viglino (3)

1. toxicology department, CHU de Grenoble, Grenoble, France
2. Emergency department, CHU de Grenoble, Grenoble, France
3. emergency department, CHU de Grenoble, Grenoble, France
4. Emergency department, CHU de Grenoble, Grenoble, France

Corresponding author: damienCADINOT@hotmail.com

Keywords: acute self-poisoning, toxicological analysis, emergency

Introduction. Drug self-poisoned patients account for 1% of emergency admissions and their management leads to a substantial amount of toxicological analyses. Several international guidelines have described the clinical

relevance of selected target toxicological tests. Our aim was to assess the impact of a two-level prescription tool on the compliance of analysis requests with guidelines.

Methods. We conducted a retrospective before-and-after study in the emergency department of a university hospital. All adult drug self-poisoned patients admitted from February 1st to March 31st 2011 (before) and from February 1st to March 31st 2012 (after) were included. A computer-assisted prescription tool was implemented on May 1st 2011. It was based on a two-level approach: first emergency physicians could prescribe ethyl alcohol and/or acetaminophen analyses; second, physicians had to reach a specific user interface if they wanted to prescribe others selected target toxicological tests. No specific training about toxicological analyses was provided to emergency physicians. Our primary endpoint was the number of irrelevant toxicological analyses per patient according to international practice guidelines. On analyses in serum or plasma were studied. Data were obtained from computerized medical records of the emergency and the analytical toxicology departments. Cost analysis was performed based on the tariff grid for biological analyses published by the French government. Data are presented as absolute (n) and relative (%) frequencies or mean and +/- standard deviation. Statistical analysis was conducted using SPSS v.20 (SPSS Inc., Chicago).

Results. We included 536 patients, 273 before and 263 after the implementation of the prescription tool. During the whole study, 784 toxicological tests were performed including 279 (35.6%) ethyl alcohol, 126 (16.1%) acetaminophen, 116 (14.8%) benzodiazepine, and 81 (10.3%) tricyclic antidepressant analyses. The number of irrelevant analyses per patient was lower after the intervention (0.2 +/- 0.6 vs. 0.5 +/- 0.8, p<0.001). The number of patients who benefited from at least one analysis and the mean number of analyses per patient also decreased in the after-period (129 (47.3%) vs. 77 (29.4%) and 1.13 +/- 1.55 vs. 1.78 +/- 1.95 respectively, p<0.001). Qualitative benzodiazepine tests in serum accounted for the majority of irrelevant analyses (116, 58.0%). The decrease in the number of inappropriate analyses led to a cost reduction of 12.7 euros per patient, equating to an annual cost savings of 21,900 euros in our emergency department.

Conclusion. Despite several limitations due to the design of this study, our results seem to demonstrate that a simple two-level prescription tool can enhance the relevance of toxicological analyses in the emergency setting. It also appears that it may help reducing the medical cost associated with drug self-poisoning.

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'BONSAILI'; A NEW DRUG WITH DEATHLY OUTCOMES IN TURKEY.

Ezgi Yildirim (1), Oner Bozan (1), Ozlem Guneyssel (2)
1. Emergency Medicine Clinic, Umraniye Education and Research Hospital, Istanbul, Turkey

2. Emergency Medicine Clinic, Dr Lutfi Kirdar Kartal Education and Research Hospital, Istanbul, Turkey

Corresponding author: guneyssel@gmail.com

Keywords: Bonsaii, Synthetic cannabis, Anion gap acidosis

Introduction: Synthetic cannabis is a psychoactive drug obtained by spraying synthetic chemicals onto natural herbs that in return mimic the effects of cannabis, often smoked or inhaled to get high. It's intoxication results in various symptoms and findings such as psychosis, paranoid behavior, nausea and vomiting, urinary retention, bowel dysmotility, tachycardia, myocardial infarction, seizure and coma. Synthetic cannabis intoxication can result in severe respiratory depression as well as serious metabolic complications such as an irreversible decrease in body pH that leads to an increased anion gap acidosis.

Case Report: A 24 year-old male patient with a history of alcohol, ecstasy and synthetic cannabis abuse was found unconscious and cyanotic state by his family and was brought to our emergency department. He had a prior history of unknown amount of synthetic cannabis use, also known as the brand name 'bonsaii' in Turkey, 3 hours before the symptoms had begun. He was unconscious and gasping with a Glasgow Coma Scale of '3', pin-point pupils, blood pressure was 80/40mmHg, heart rate of 110 bpm, SpO₂:68 and 35,4C °. He was sedated and intubated orotracheally. His pH was 6.98, HCO₃ was 18 mEq/L, an anion gap was 14 mEq/L and lactate level was 6.2 mmol/L, troponin I was 0.37ng/mL (<0,012). Serum creatin kinase level was 220 ng/ml (0-200 ng/ml). He was given 1000 ml saline and 500 ml 10% Dextrose, 20 mEq HCO₃ and 200 mg Dopamine IV in the emergency department. He was admitted to the ICU and the treatment was continued for 2 days. **Discussion:** The use of synthetic cannabis use and it's side effects in the world is known since 2000s. It's use in Turkey is new and we have been coming across with it's side effects for just a few months. A few cases of death from Bonsaii use were reported but patients referring to emergency services with it's side effects are rare and new in our country.

Conclusion: Emergency medicine physicians should keep in mind the possibility of synthetic cannabis use in patients with respiratory depression, an altered mental status and an increased anion gap metabolic acidosis.

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EFFECTS OF CYTOKINES ON PROGNOSIS AND TREATMENT OF SCORPION STING

Sevdiye Acele (1), Zeynep Kekeç (2), N Rana Di?el (2), Arma?an Acele (3)

1. Department of Emergency, Cukurova Dr. A?k?m Tüfekçi Government Hospital, Adana, Turkey
2. Department of Emergency Medicine, Cukurova University Faculty of Medicine, Adana, Turkey
3. Department of Cardiology, Numune Training and Research Hospital, Adana, Turkey

Corresponding author: ranalpay@gmail.com

Keywords: Cytokines, Emergency Department, Scorpion Sting

Purpose: Knowledge about the changes of cytokines in toxications due to scorpion sting based on limited case reports and publications. In this study we aimed to demonstrate the effect of changes in cytokine levels in toxications due to scorpion sting over the treatment and clinical course.

Materials and Methods: After local ethical committee approval, we enrolled 40 patients who had admitted to emergency service because of scorpion sting and control group through two years to this prospective study. Age, sex, duration of hospitalization and ECG findings were recorded. We evaluated if there was a statistical relation between Tumor Necrosis Factor- α , Interleukin-6, Interleukin-8, Interleukin-10 level on admission and the clinical course.

Findings: 21 women and 19 men were enrolled to the study. It was found that scorpion stings are most frequent in July and August, especially at night time between 16:00-20:00 pm and seen particularly on handfingers. Mean duration of hospital stay was 13 \pm 12 hours. Mean values of Tumor Necrosis Factor- α , Interleukin-6, Interleukin-8, Interleukin-10 were (19,8 \pm 55,3), (29,5 \pm 41,7), (82,5 \pm 130,4), (34,4 \pm 74,5) respectively. Local complains like pain, rush, paresthesia were seen in % 80 of cases. % 50 of patients were phase 1, other half was phase 2. The most apparent ECG finding was the sinus tachycardia. All patients were treated in emergency service. After follow period all patients were discharged with full recovery.

Results: Admissions to emergency service with toxications due to scorpion sting increase in Cukurova, an agricultural region, especially during summer. There was a significant relation between hospital stay duration and TNF- α but the other cytokines did not show relation. The fact that all the patients admitted with scorpion sting did not develop any complication represents that scorpions living in this region are at low toxic levels. The relation between hospital stay duration and TNF- α give rise to thought that this parameter can be useful in patients with risk. However multicentric studies including higher volume of patients can provide certain datas to lighten this subject.

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ACUTE POISONING IN EMERGENCY ROOM: RISK FACTORS FOR INTENSIVE CARE UNIT TRANSFER.

Jihène Essid (1), Sami Souissi (1), Hanène Ghazali (1), Sarra Bellili (1), Rebeh Daoudi (1), Anwar Yahmadi (1), Ali Sellami (1), Noura Laamouri (1).

Emergency department, Regional Hospital, Ben Arous, Tunisia

Corresponding author: samisouissi@yahoo.fr

Keywords: acute poisoning, emergency room, ICU transfer

Introduction: Acute poisoning represents a frequent reason of admission in emergency rooms and intensive care units (ICU). Evaluation of intoxication severity should rely on a rigorous approach based on analysis of prognostic factors. Existing prognostic scores are not efficient enough to predict ICU admission in daily practice. We purpose to identify ICU transfer risk factors in acute poisoning.

Methods: We performed a prospective and monocentric study from July 2012 to March 2013. All patients admitted to emergency department (ED) with a diagnosis of accidental or voluntary intoxication were included. Clinical and toxicological data were first analyzed with univariate tests. Factors significantly associated with ICU admission were then introduced in a logistic regression model.

Results: During nine months, 132 patients were included, 78 % were women. Mean age was 26 +/- 13 years. Toxic ingestion was voluntary in 86% of cases. The median delay of consultation was 2 hours [1-24] after toxic ingestion. 59 (45%) patients were admitted to ICU. In multivariate analysis, pesticide ingestion was identified as risk factor for intensive care admission (OR=1,82 ; 95% CI, 1.03- 3.2). Clinically, only Glasgow coma scale (less than 13) had a prognosis value (OR=4,97 ; 95% CI, 1.73- 14.25).

Conclusion: Emergency physicians should focus on poison classes and Glasgow coma scale to identify acute poisoned patients at risk of ICU admission.

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THE EFFECT OF GREEN TEA EXTRACT ON A-MANITIN INDUCED HEPATOTOXICITY IN A MURINE MODEL

Yong Jin Park (1)

1. Emergency department, Chosun University Hospital, Gwangju, Korea, (South) Republic of

Corresponding author: chosunem@naver.com

Keywords: alpha-amanitin, green tea extract, animal model

Purpose: Alpha-amanitin is a powerful natural hepatotoxin that belongs to the amatoxins isolated from deadly poisonous Amanita phalloides mushroom. Intoxications caused by amanitin containing mushrooms represent an unresolved problem in clinical toxicology. The aim of this study was to investigate whether green tea extract (GTE) has the protective effects on amanitin-induced hepatotoxicity.

Methods: Swiss mice (n = 40 in all groups) were divided four groups (n=10/group): control group (0.9% saline injection), AMA group (given an alpha-amanitin 1mg/kg, approximate LD75 dose of intraperitoneal injection), GTE group (green tea extract 100mg/kg subcutaneous injection). AMA+GTE group (amanitin and green tea extract were administered simultaneously). After 48 hours of treatment, each subject was killed, cardiac blood was aspirated for hepatic aminotransferase measurement (alanine transaminase and aspartate transaminase), and liver

specimens were harvested to evaluate the extent of hepatonecrosis. The degree of hepatonecrosis was determined by a pathologist blinded to the treatment group and divided into 4 categories according to grade of hepatonecrosis.

Results: There were significant increased level of serum AST and ALT in the amatoxin group compared with that of the control group and significantly improved in the AMA-GTE group. Further, AMA-GTE group demonstrated an important decrease in hepatonecrosis compared with controls when a histologic grading scale was used.

Conclusion: In this murine model, green tea extract was effective in limiting hepatic injury after alpha-amanitin poisoning. Increases of aminotransferases and degrees of hepatonecrosis were attenuated by this antidotal therapy.

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ENIGMA BENEATH A CAR ACCIDENT

Serhad Ömerciko?lu (1), Can Özen (1), Erhan Altunba? (1), Serkan Emre Ero?lu (1), Haldun Ako?lu (2), Özge Onur (1), Arzu Denizba?? (2), Musa Adanç (1)

1. Emergency department, Marmara University Pendik Research and Training Hospital, ?stanbul, Turkey

2. Emergency department, Marmara University Pendik Research and Training Hospital, istanbul, Turkey

Corresponding author: drseroglu@gmail.com

Keywords: Tricyclic antidepressants, Drug poisoning, Trauma

Introduction: The change of mental status in emergency department should always warn us about different possible diagnosis. Drug intoxications, which may present in many clinical forms, are conditions really hard to identify sometimes. In this report, we present a patient who experienced a motor vehicle accident but during her admission showed the clinical findings of tricyclic antidepressant drug poisoning.

Case: The patient is a 29 year old female presented with minor soft tissue injuries after a motor vehicle accident. She was alert, had a Glasgow Coma Scale (GCS) score of 15, on examination blood pressure was 122/85 mm/Hg, pulse was 92 beats per minute, body temperature was 36.2°C, oxygen saturation was %100 and blood sugar was 119 mg/dl. She had no findings apart from minor edema and crepitation on os nasale. Routine blood tests, electrocardiography, X-rays and computed tomography (CT) revealed no abnormalities except a non-deplaced fracture on os nasale. The patient was consulted by Neurosurgery and Ear Nose Throat specialist and no intracranial pathology was suspected. During her stay in the emergency room the patient developed sudden agitation, aggression and tachypnea. To rule out intracranial damage a second CT was performed (Figure 1). After another consultation to neurosurgery no additional pathology was reported. During her follow up, the patient's GCS diminished to 10. Follow up blood work showed signs of metabolic acidosis. Patient developed

hypotension and a wide QRS dysrhythmia was observed on the EKG (Figure 2). When a more detailed history is obtained, her relatives and friends informed us of an empty box of a tricyclic antidepressant drug found in the car. The patient's treatment started accordingly and a toxicological screening was planned. The results showed high amounts of tricyclic antidepressants in patient's blood. The patient was admitted to an intensive care unit.

Discussion: Vital signs and mental status of emergency department patients should be closely monitored and follow up examinations should be performed frequently. Sudden changes in mental status must warn us about metabolic abnormalities as well as drug intoxications. Patients should be treated rapidly and toxicological screening must be considered. In this particular case changes in ECG, vital signs and physical examination were noticed quickly, tricyclic antidepressant poisoning was suspected and the treatment started immediately. Close monitoring and early treatment have saved the patient's life.

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ECG-CHANGES AND ACUTE ETHANOL POISONING

Koenraad Meesschaert (1), Marc Sabbe (2)

1. Dept of Emergency Medicine, University Hospitals, Leuven, Belgium

2. Dept of Emergency medicine, University Hospitals, Leuven, Belgium

Corresponding author: lea.vanroelen@uzleuven.be

Keywords: ethanol poisoning, ECG changes, cardiac arrhythmias

Introduction: Acute ethanol poisoning is a common problem in society and the Emergency Room. Several studies suggests potential cardiac effects such as arrhythmias due to alcohol.

Objectives: The study was performed to assess how ethanol can affect ECG-intervals that are associated with lethal cardiac arrhythmias.

Protocol: We included 21 patients between 18-35 year without any comorbidity, chronic medication or the use of illegal substances, who were hospitalised with acute ethanol poisoning. At admission, an ECG was recorded and blood was sampled for ethanol-level measurement. Seventeen also had ECG recorded at discharge. Twenty-one employees and patients without known alcohol ingestion, co-morbidity or use of medication served as controls. The ECG's were compared to the controls and compared with the intoxication level.

Results: In the ethanol subjects the P wave, PR interval, QRS-complex, QT and QTc interval were prolonged compared to the control group.(p-values: 0.013, 0.014, 0.068, 0.149 and p < 0.001). The segments of the ECG at discharge were less prolonged. We did not found any correlations between the intervals and the concentration of ethanol.

Conclusion: Ethanol causes several changes in the ECG that are associated with an increased risk of cardiac arrhythmias

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POST-HURRICANE INTERNET SEARCHES PARALLEL POISON CENTER CALL VOLUME IN AN OUTBREAK OF CARBON MONOXIDE POISONING

Diane Calello (1), John Allegra (1), Bruce Rupp (2)

1. Emergency Department, Morristown Medical Center, Morristown, United States

2. Pharmacy, New Jersey Poison Information and Education System, Newark, United States

Corresponding author: jallegra@gmail.com

Keywords: carbon monoxide poisoning, poison center, internet

Introduction: Hurricane Sandy caused massive damage and power outages and was followed by a regional outbreak of carbon monoxide (CO) poisoning as reported by the CDC. This was likely due to improper use and placement of fossil-fuel generators and heating devices. Internet searches may be a useful surveillance tool during these outbreaks. We sought to determine whether there was an increase in CO internet searches after Hurricane Sandy in the New Jersey and New York area, as measured by Google Trends, and whether this paralleled the number of calls to the regional poison center.

Methods: We conducted a Google Trends search with the string "carbon monoxide" in New Jersey and New York from October 29, 2012 (the day of the storm) until November 13, 2012. We plotted Google Trends and the daily call volume at the New Jersey Poison Information and Education System (NJPIES). We calculated mean search frequencies and the correlation coefficient (R squared) for Google Trends and calls to NJPIES for the week after the storm and the following week. We calculated 95% confidence intervals (CIs) and used Student's t- test for statistical significance with alpha = 0.05.

Results: Visual inspection of the plot reveals that Google Trends paralleled the call volume to NJPIES. Both peaked on November 1, the day the average daily temperature dropped below 100 C in Newark. Both internet search and NJPIES call volumes were greater for the 7 days after the storm compared to the next 7 days: mean Google Trends were 66 and 33 respectively (difference = 33, 95% CI, 16 to 49, p = 0.001); mean number of calls to NJPIES were 14 and 3 respectively (difference = 10, 95% CI, 1 to 21, p = 0.04). The correlation coefficient for daily Google Trends and calls to NJPIES for the two week after the storm was R squared = 0.64 (p = 0.001)

Conclusion: Poison center data has an established history of effective surveillance. In this study, regional internet search behavior, as measured by Google Trends, paralleled poison center call volume during an outbreak. This highlights the potential importance of internet resources in public health.

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CLINICAL EVIDENCES OF ITALIAN VIPER VENOM NEUROTOXICITY: 11-YEAR EXPERIENCE OF PAVIA POISON CONTROL CENTRE

Monia Aloise (1), Francesca Chiara (1), Andrea Giampreti (2), Carlo Locatelli (1), Davide Lonati (1), Luigi Manzo (1), Valeria Petrolini (1), Sarah Vecchio (1)

1. Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy

2. Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy

Corresponding author: davide.lonati@fsm.it

Keywords: viper, neurotoxicity, phospholipase

Objective: To study neurotoxic effects after viper envenomation in Italy.

Methods: All human cases of snakebite referred to Pavia Poison Centre (PPC) presenting peripheral neurotoxic effects (PNE) from Jan 2001 to Dec 2011 were included. Cases were assessed for: time from bite to PPC evaluation, Grade Severity Score (GSS) [1], onset/duration of clinical manifestations, severity/time course of local, non-neurological and neurological effects, antidote treatment.

Results: Twenty-four were included (age 3-75 years) and represented an average of 2.2 cases/year (about 7% of total envenomed patients). The mean interval time of PPC evaluation from snakebite was 10.80±19.93 hours. GSS at ED-admission was 0 (1 case), 1 (10 cases) and 2 (13 cases). All patients showed local signs: 41.6% minor, 58.4% extensive swelling and necrosis. The main systemic non-neurological effects were: vomiting (86.7%), diarrhea (66.7%), abdominal discomfort (53.3%) and hypotension (20%). PNE were: accommodation troubles and diplopia (100%), ptosis (91.7%), ophtalmoplegia (58.3%), dysphagia (20.8%), drowsiness (16.6%), cranial muscle weakness (12.5%), dyspnoea (4.2%). PNE were the only systemic manifestation in 9 cases; in 4 cases they were associated with only mild local swelling. In 10 patients the onset of PNE followed the resolution of systemic non-neurological effects. Antidote was administered intravenously in 19 (79.2%) patients. The mean duration of manifestations in untreated vs treated group was 53.5±62.91 vs 41.75±21.18 hours (p=0.68) (local effects) and 9.77±3.29 vs 8.25±12.23 hours (p=0.1) (systemic non-neurological effects) and 43.4±14.69 vs 26.58 ± 20.62 hours (p=0.03) (PNE).

Conclusions: PNE may appear late (11 hours after the bite in 58.3% of cases), in contrast with the data reported in French medical literature [2]. PNE was reversible in all cases and may be the only systemic manifestation of envenomation. PNE are shorter in the treated group. Antidote treatment of patients considered as GSS 2 only for

PNE (with mild local effects) may not be necessary. Variable factors such as the different amount of venom injected, concentration of PLA2 component and individual susceptibility may explain the lower percentage of patients presenting neurotoxic effects. References: 1. Audebert F et al. *Toxicol* 1992; 30 (5-6), 599-609. 2. de Haro L et al. *Hum. Exp. Toxicol.* 2002; 21, 137-145.

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“SYNTHETIC CO-CAINE” HIDES SYNTHETIC CANNABINOIDS

Monia Aloise (1), Eleonora Buscaglia (1), Francesca Chiara (1), Andrea Giampreti (2), Carlo Locatelli (1), Davide Lonati (1), Pietro Papa (3), Valeria Petrolini (1), Claudia Rimondo (4), Catia Seri (5), Giovanni Serpelloni (6), Antonella Valli (3), Sarah

1. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

2. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

3. *Laboratory of Analytical Toxicology - Clinical Chemistry Service, IRCCS Policlinico San Matteo Foundation, Pavia, Pavia, Italy*

4. *Department of Antidrug Policy, Presidency of the Council of Ministers, Rome, Italy, Rome, Italy*

5. *Presidency of the Council of Ministers, Rome, Italy, Department of Antidrug Policy, Pavia, Italy*

6. *Department of Antidrug Policy, Presidency of the Council of Ministers, Rome, Italy, Pavia, Italy*

Corresponding author: davide.lonati@fsm.it

Keywords: synthetic cannabinoids, drug abuse, early warning system

Objective: Synthecaine is a slang term that seems to originate from “Synthe-tic” and “Co-caine” and is available from on-line markets as legal cocaine. Web-sources describe synthecaine as a mixture of dimethocaine/camfetamine; the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) report notified dimethocaine and 3-(p-fluorobenzoyloxy)tropane (pFBT). We describe a case of abuse of synthecaine (containing synthetic cannabinoids) identified through the Italian N.E.W.S. of Department for Antidrug Policies - Presidency of the Council of Ministers.

Case report: A 20 year-old man, with a history of cannabis and cocaine abuse, were admitted to the emergency department (ED) about 6 hour after sniffing an unknown amount of a whitish powder named “synthecaine”, bought on the web as “legal cocaine”. On admission the patient presented excitement, xerostomia, chest pain, dyspnoea, tachycardia (150 beats/minutes) and hypertension (160/80 mmHg). Blood glucose (160 mg/dL) and CK (860 U/L) were elevated. Body temperature, oxygen saturation on room air, complete blood count, serum electrolytes, cardiac enzymes, EKG and coagulation parameters were normal.

The patient was successfully treated with intravenous fluids and diazepam 10 mg and discharged asymptomatic 12 hours later. GC-MS of the purchased substance identified benzocaine, MAM-2201 and sugars. Toxicological analysis of biological samples revealed the presence of MAM-2201 (11 ng/mL) and benzoilecgonine (137 ng/mL) in blood and cocaine and benzoilecgonine in urine (using GC-MS); opiates, methadone, amphetamines, MDMA, THC, ethanol and benzocaine were negative.

Conclusion: Our experience revealed that synthecaine may contain mainly MAM-2201 and benzocaine. MAM-2201 is an analog of AM-2201 a potent synthetic cannabinoid which binds the CB1 and CB2 receptors with high affinity (K_i = 1.0 and 2.6 nM, respectively). MAM-2201 has never been identified in Italy. Actually, no human pharmacotoxicological data are available for MAM-2201 but the toxic effect should be related to AM-2201 (under law control in Italy from May 2011). On the basis of these cases and the increasing evidence of the availability of synthecaine on the Internet, clinicians should be made aware of the potential severe toxicity of synthetic cannabinoids mixed with benzocaine in patients presenting to the ED.

Acknowledgements: Study carried out with a grant of the Department of Antidrug Policy, 2012

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POISONING DUE TO METFORMIN ACCUMULATION IN DIABETIC PATIENTS ON CHRONIC THERAPY: ANALYSIS OF 66 PATIENTS WITH LACTIC ACIDOSIS AND HIGH PLASMATIC METFORMIN LEVELS

Andrea Giampreti (1), Carlo Locatelli (2), Davide Lonati (2), Luigi Manzo (2), Pietro Papa (3), Valeria Petrolini (2), Alessandro Protti (4), Laura Rolandi (3), Antonella Valli (3), Sarah Vecchio (2)

1. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

2. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

3. *Laboratory of Analytical Toxicology - Clinical Chemistry Service, IRCCS Policlinico San Matteo Foundation, Pavia, Pavia, Italy*

4. *Department of Anesthesia and Intensive Care, IRCCS Foundation Ca? Granda, Ospedale Maggiore Policlinico, Milan, Italy, Milan, Italy*

Corresponding author: davide.lonati@fsm.it

Keywords: metformin, lactic acidosis, poisoning

Objective: To study the relationship between metformin therapy and lactate increase in all patients with metformin accumulation referred to Pavia Poison Control Centre (PPC). **Methods:** All cases of lactic acidosis (pH ≤ 7.35; arterial lactate ≥ 5 mmol/L) related to metformin accumulation (plasma level ≥ 4 mcg/mL) referred to PPC from 2007 to 2011 were retrospectively reviewed. Medical history, epidemiological, clinical and analytical data were evaluated

either in all patients either in MILA (Metformin-Induced Lactic Acidosis) and MALA (Metformin-Associated Lactic Acidosis) subgroups (classified according to the presence of risk factors for lactic acidosis other than metformin accumulation). A correlation between metformin plasma levels and lactic acidosis has been evaluated. Results: Sixty-six patients (76% female, age 68.35±10.17 years) were included. Thirty-five patients had no contraindications to metformin therapy: among these, 57% was treated with ACE-inhibitor or NSAID. Mild gastrointestinal manifestations were the most frequent prodromal symptoms. All patients showed severe lactic acidosis (pH 6.91±0.18, lactate 14.36±4.90 mmol/L) and acute renal failure (creatinine 7.24±3.29 mg/dL). The mean metformin plasma concentration was 40.68±27.70 µg/mL (range 4.6-117) and showed a correlation with creatinine (p=0.002, R=0.37) and plasma lactate levels (p=0.001, R=0.41). Sixty-two patients (94%) underwent dialysis. Hospitalization in Intensive Care Unit (ICU) lasted for a median of 5 days and mortality before discharge from ICU was 26%. The mean level of creatinine was 7.91±3.10 mg/dL in survivors and 5.30±3.15 in patients who died (p=0.011). Among the included patients, 55% were attributed to MILA group and 45% to MALA group. Despite a more severe lactic acidosis (p=0.01), the higher creatinine (p=0.004) and metformin plasma levels (p<0.0001), MILA and MALA patients showed similar mortality rate. Conclusions: Metformin accumulation should be suspected in diabetic patients with metabolic acidosis, acute renal failure and a history of gastrointestinal manifestations. Mortality does not present any correlation with serum creatinine, metformin and lactate levels: therefore the role of concomitant risk factors in determining the outcome could be highlighted. Metformin accumulation may develop also in patients without contraindications to therapy or risk factors for lactic acidosis, suggesting a potential primary role of metformin in determining lactic acidosis.

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CAUSTIC EFFECTS DUE TO SODIUM HYPOCHLORITE INGESTION: TOXICOLOGICAL PROPERTIES, CLINICAL MANIFESTATIONS AND ESOPHAGO-GASTRO-DUODENOSCOPY

Monia Aloise (1), Francesca Chiara (1), Andrea Giampreti (2), Carlo Locatelli (1), Davide Lonati (1), Luigi Manzo (1), Valeria Petrolini (1), Sarah Vecchio (1)

1. Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy

2. Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy

Corresponding author: davide.lonati@fsm.it

Keywords: hypochlorite, caustic, esophago-gastro-duodenoscopy

Objective: Medical literature lacks data concerning specific management of sodium hypochlorite ingestion. (1) We describe the clinical manifestations and Zargar classified esophago-gastro-duodenoscopy (EGDS) (2) of a retrospective case series of sodium hypochlorite ingestions from Pavia Poison Centre experience.

Case series: 109 cases of 1-5% sodium hypochlorite (household bleach) confirmed ingestions has been retrospectively evaluated during a 20 month period (Jan2011-Aug2012). Deliberate ingestion was registered in 31/109 (28%) patients, while 78/109 (72%) accidentally ingested hypochlorite. All patients presented clinical manifestations characterized by abdominal pain (69/109; 63%) and spontaneous vomiting (54/109; 49%); no fatal cases were registered. Deliberate ingestion of 100-200 mL (estimated) occurred in 19/31 (61%) cases and more than 200 mL in 12/31 (39%) cases. The largest number of deliberate ingestions occurred in adult patients (27/31 aged 18-75) and a minority in younger patients (4/31 aged 14-18). Among deliberate ingestions 25 patients underwent EGDS and 13/25 (52%) presented moderate to severe esophageal-gastric lesions (9 grade 2A; 2 grade 2B and 2 grade 3). Among accidental ingestions 48/78 (61%) patients were under 18 years old and 30/76 (39%) were 18-73. Nineteen (25%) accidental ingestions underwent EGDS that showed moderate gastric-esophageal lesions (grade 2A) in 10/19 (52%) patients. Three patients (2 accidental, 1 deliberate) presented a clinical worsening of esophageal and gastric lesions during the following 12-24 hours after sodium hypochlorite ingestion.

Conclusion: Hypochlorite ingestion may represent a medical emergency. However clinical and toxicological evaluation may be complex and related to multiple critical aspects (e.g. hypochlorite concentration, pH solution, amount ingested) which are not always assessable. Thus, the diagnosis and the therapeutic approach can be difficult, and not standardized as in the medical literature. Considering our case series, more than half of symptomatic accidental ingestions ('one swallow') of 1-5% hypochlorite solution may present with moderate-severe esophageal-gastric lesions. EGDS should be performed within 12-24 hours from ingestion. In deliberate massive ingestions it would be reasonable to perform a prompt EGDS in the emergency setting followed by a second-look EGDS within 12-24 hours aimed to evaluate a potential clinical worsening of gastric-esophageal lesions.

References: 1. Racioppi F et al. Food Chem Toxicol. 1994;32(9):845-61. 2. Zargar SA et al. Gastrointest Endosc. 1991;37(2):165-9.

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ANTIDOTES AVAILABILITY IN THE ITALIAN HEALTH SYSTEM: A NATIONAL SURVEY

Eleonora Buscaglia (1), Carlo Locatelli (1), Davide Lonati (1), Valeria Petrolini (1), Sarah Vecchio (1),

Monia Aloise (1), Francesca Chiara (1), Andrea Giampreti (2), Marta Mazzoleni (1)

1. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

2. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

Corresponding author: davide.lonati@fsm.it

Keywords: antidote, survey, Health System

Objective: To survey and to ameliorate the availability of antidotes in the Italian Health System (NHS), also for CRN emergencies; to update the National Antidote Database (BaNdA at www.cavpavia.it); to compare the actual antidote availability in the NHS to the previous data collected in 2003 (1).

Methods: In April 2012 a questionnaire was sent to the emergency services (EDs, ICUs and Poison Centres) and to pharmacies of all Italian hospitals, requiring information on the availability of 94 antidotes/molecules useful in the treatment of poisonings.

Results: Preliminary data from 192 questionnaires (137 EDs and 55 ICUs) and relative to 23 antidotes (folic acid, physostigmine, activated charcoal, ethanol, fomepizole, amyl nitrite, sodium thiosulphate, hydroxocobalamin, cobalt edentate, pralidoxime, Viper-Fab, Fab-antidigoxin, glucagon, NAC, methylene blue, Prussian blue, PEG 400, BAL, DMSA, DMPS, Ca-DTPA/Zn-DTPA, vitamine C) have been analyzed until now. Three antidotes (DMSA, DMPS, Ca-DTPA/Zn-DTPA) and 4 antidotes (fomepizole, cobalt edetate, DMPS, Ca-DTPA/Zn-DTPA) were not available in EDs and in ICUs that participated to the survey, respectively. The comparison with data collected in the 2003 survey showed an increase in the availability of fomepizole (6.8% in 2012 vs 0% in 2003), sodium thiosulphate (24.5% vs 6.7%), hydroxocobalamin (33.1% vs 0.5%), glucagon (69.9% vs 0.5%) in the EDs and of hydroxocobalamin (12.7% vs 0%), glucagon (27% vs 0%) in ICUs. Only for NAC, pralidoxime and Fab-antidigoxin a reduction in availability was registered: this is probably due to difficulties in purchase and to the availability of these antidotes in strategic stockpiles. No differences have been registered for the other analyzed antidotes. Considering the recommended dose to treat an adult for 24 hours, a dramatic decrease in the percentage of hospitals that stock a sufficient amount of antidotes is registered.

Conclusions: Preliminary data show an increase of availability of antidotes for methanol/ethylene glycol, cyanide and beta-blocker poisonings in Italian hospitals. The Poison Centers remain the unique services that ensure a prompt and complete availability of all the antidotes.

References: 1, Locatelli et al, *Ann Ist Super Sanità*, 2006.

Acknowledgements: study carried out with grants of the Department of Civil Protection—Presidency of the Council of Ministers and of the Ministry of Health, 2012

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RABIES: ARE WE ALIGNED WITH THE INTERNATIONAL AND NATIONAL GUIDELINES?

Eleonora Buscaglia (1), Andrea Giampreti (2), Carlo Locatelli (1), Davide Lonati (1), Marta Mazzoleni (1), Valeria Petrolini (1), Sarah Vecchio (1)

1. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

2. *Poison Control Centre and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy*

Corresponding author: davide.lonati@fsm.it

Keywords: Rabies, Guidelines, Poison Centre

Objective: Rabies exposures in humans are associated with bites or scratches by rabid animals. Post-exposure prophylaxis (PEP) must be applied (according to the international guidelines) with prompt administration of vaccine alone or combined with human rabies immunoglobulin (HRIG). Incorrect PEP is related to a fatality rate of nearly 100%. Rabies is not endemic in Italy, and only a few cases are detected annually in wild animals in the north-east regions. Nevertheless, in the last 5 years, 22 cases of potential rabid patients were presented to the Pavia Poison Control Centre (Pavia-PCC) for clinical management and vaccine and/or HRIG supplying. Five cases, involving travellers from other countries where rabies is endemic, required the rapid co-administration of vaccine and HRIG: in these cases the HRIG was unavailable in the relevant Emergency Departments (EDs), and it was difficult to find it all over the country. To improve the availability and supply of vaccine and HRIG in Italy, a national survey has been conducted.

Methods: In September 2012, the Pavia-PCC sent by email/fax to the Italian EDs a questionnaire to evaluate (i) the existence of standardized procedures for the management of patients bitten by potentially rabid animals, (ii) the availability of HRIG and/or (iii) vaccine.

Results: Preliminary data from 116 EDs were analysed. In 68.2% neither procedure, vaccine nor immunoglobulins were present. In 29% a protocol for the management of potentially rabid patients was present; vaccine and HRIG, vaccine alone, and HRIG alone were present in 16.4, 12.0 and 3.4%, respectively. Vaccine and HRIG are mainly located (74%) in EDs of the north-east of Italy, where a periodic reappearance of rabies involving wild animals is registered.

Conclusion: Despite Italy being declared free from rabies since 1973, cases of imported rabies due to international travellers have shown an increase in recent years. Our preliminary data show a lack of uniform preparedness of EDs and a lack of active/passive immunisation in some potentially infected cases. A critical revision of the procedures for the fast treatment of potentially affected patients and a new specific storage system for HRIG and/or vaccines has now been adopted in Italy.

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FLUMAZENIL IN BENZODIAZEPINE INTOXICATION

Marije Sterckx (1)

1. Emergency department, Canisius-Wilhelmina Hospital, Nijmegen, Netherlands

Corresponding author: marijesterckx@hotmail.com

Keywords: benzodiazepine, flumazenil, intoxication

Question: In patients with an intoxication of benzodiazepines, should flumazenil be administered and if so, what are the chances of (serious) adverse events?

Background: Intoxications with benzodiazepines are a common problem at the emergency department. Often the benzodiazepines are combined with other drugs, like antidepressants and/or alcohol.

This can lead to a decreased consciousness and hence decreased respiration, especially in patients with comorbidity and the elderly. Flumazenil is an antidote for benzodiazepines, but there seem to be believers and non-believers regarding the administration of flumazenil in the emergency room. It can be used both diagnostic and therapeutic, but a possible side-effect is stimulation of epileptic insults in which case benzodiazepines don't work anymore.

Search strategy:

The Cochrane Library, TRIP database, Pubmed and the National Guideline Clearinghouse were searched with the following terms: benzodiazepines [Mesh], flumazenil [Mesh], benzodiazepine overdose and flumazenil (free text).

3 relevant articles were found of which one Best Bet from 2000, one retrospective cohort study and one systematic review. The retrospective cohort study from Veiraiah led to another article in the reference list, though it was only available as an abstract.

In the National Guideline Clearinghouse no guidelines were found, considering the use of flumazenil in benzodiazepine overdose.

Results:

Best Bet, 2000, Kumar Singh

In this Best Bet a three part question is answered: In patients with suspected overdose is a single dose of flumazenil indicated to safely diagnose benzodiazepine ingestion?

They did a medline search and eventually they found 6 articles which were relevant. 4 of these were RCT's which all showed a significant increase in GCS-score and no difference in side effects. One study was a diagnostic test study and one a retrospective study.

Most important comment is that all studies included small patient groups, ranging from 23 to 105.

In the retrospective cohort study of Veiraiah et al. NPIS data were searched for patients with benzodiazepine overdose to see whether or not flumazenil was administered and which factors and side-effects were associated with flumazenil use. Ventilatory failure was

associated in 29 of 80 patients treated with flumazenil versus 60 of 4424 patients not treated with flumazenil (p-value <0,001). There was one seizure after flumazenil use.

Study weakness: not every case is reported to NPIS, there were insufficient data, detection bias and a small intervention group. The level of evidence is 2b.

In the systematic review of Ngo et. all a meta-analysis of 7 RCT's was performed. In all RCT's patients with benzodiazepine overdose were treated with flumazenil or a placebo. There was a significant improvement in GCS and only minor side-effects were significant in the group treated with flumazenil. **Study weakness:** heterogeneity, level of consciousness and dosages of flumazenil not standardized. The level of evidence is 1a.

In the abstract of Jurgens et al. a meta-analysis of 12 RCT's was performed. In all RCT's patients with impaired consciousness due to suspected benzodiazepine overdose were treated with flumazenil or a placebo. The overall risk on adverse events was 4,07 (95% CI 2,80-5,91). There was no significant difference in serious adverse events. Most important study weakness is that 9 RCT's contained mixed intoxications. The level of evidence is 1a.

Conclusion and level of recommendation:

Based on these studies flumazenil seems to be safe regarding the risk of serious adverse events. The level of recommendation is B.

Comments:

In the emergency room as a doctor you're always dealing with individual patients of whom you don't know for certain whether they have taken only benzodiazepines or also something else. This makes the decision whether or not you should use flumazenil difficult. Besides this, if a patient has a stable airway but a decreased level of consciousness, he has to be monitored anyway, so this decision is not based on the administration of flumazenil.

Clinical bottom line:

In every patient with a suspected overdose, risks and benefits must be outweighed carefully before administration of flumazenil. But should you decide that flumazenil is indicated for a patient, the risk of serious adverse events is considerably low.

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EVOLUTION IN THE MANAGEMENT OF RATTLESNAKE ENVENOMATIONS IN THE U.S. - 1960 TO 2010

Stephen W. Borron (1), Susan Watts (1), Jack Sun (1), Kristin R. Schroeder (1), Robert Bassett (1)

1. Emergency Medicine, Texas Tech University HSC, El Paso, TX, United States

Corresponding author: stephen.borron@ttuhsc.edu

Keywords: Rattlesnake, Antivenom, History of Medicine

Background: Rattlesnake bites continue to result in significant morbidity and rare mortality in the United

States, with several thousand envenomations reported each year. Treatment of snakebite varies across the country, in part due to species differences, but also due to traditional regional preferences for management. We endeavored to identify trends in the management of rattlesnake bite over time, focusing on 50 years from 1960 to 2010. We attempted to identify thought leaders and to discern the scientific basis, where it exists, for current treatment paradigms.

Methods: We searched PubMed using the following criteria: 1) tourniquet AND snakebite; 2) suction AND snakebite; 3) child AND snakebite; 4) F(ab) AND snakebite; 5) F(ab)2 AND snakebite; 6) fasciotomy AND snakebite; 7) antivenom AND rattlesnake; 8) steroid AND rattlesnake; 9) mortality AND rattlesnake. We then reviewed the search results for pertinence to our research. Additional references were obtained from the bibliographies of the initially identified articles. Articles were limited to the English language and primarily to the North American continent. We then classified the obtained references as review articles, prospective trials, retrospective studies, case series, case reports, editorials and other articles. As historical trends were the primary foci of our review, we placed greatest emphasis on review articles and clinical trials. We then summarized the evolution of treatment by modalities and by decade.

Results: 674 articles were identified through the initial PubMed searches. Additional articles were obtained, based on pertinence of citations within the articles. This review identified a significant reliance on surgical methods of management during the 1960s and 1970s, including various recommendations for incision and suction, excision and suction, and fasciotomy and debridement. Use of tourniquets and corticosteroids were also prominent during these 2 decades. Cryotherapy was espoused by some authors in the 1960s, but had generally fallen out of favor by the 1970s. Antivenom was available during this period and was recognized as definitive treatment, but the dosage and route of administration was not yet standardized. A few authors advanced surgery as the preferred method of management. The following 3 decades, from 1980 to 2010 saw a growing reliance on larger doses of antivenom, more often given intravenously than previously. In the last 10 to 15 years, fasciotomy and debridement have become rare, generally only recommended in case of confirmed compartment syndrome. The transition from whole antibodies derived from horse serum to F(ab) and F(ab)2 ovine antivenoms has resulted in significantly fewer major allergic reactions. Recurrent coagulopathy remains a clinical challenge, but disfiguring injury from aggressive debridement appears to have declined. While the evidence base for snakebite treatment remains inadequate, well-designed clinical trials have begun to find their way into the medical literature.

Conclusions: Therapy of venomous rattlesnake bites has markedly evolved since 1950. An initial reliance on primarily surgical management has given way to higher doses, and earlier intravenous administration of specific antivenoms. Refinement of antivenom production has resulted in decreased antigenicity and improved safety.

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COLCHICUM AUTUMNALE: BEAUTIFUL AUTUMN, TOXIC SPRING.

Kasarra Ben Hammouda (1), Christine Tournoud (2), Philippe Sauder (3), Negar Sedghi (4), Françoise Flesch (2)

1. Emergency department, Hôpitaux civils de Colmar, Colmar, France
2. Poison centre, Nouvel Hôpital Civil, Strasbourg, France
3. Reanimation department, Nouvel Hôpital Civil, Strasbourg, France
4. Emergency department, Nouvel Hôpital Civil, Strasbourg, France

Corresponding author: kasarra@hotmail.fr

Keywords: Colchicum autumnale, toxicology, poisoning

Introduction: Colchicum autumnale poisoning is rare but potentially serious. It occurs after confusion between *Allium ursinum* (wild garlic) or *Allium polyanthum* (Levant garlic, wild leek) and *Colchicum autumnale* (autumn crocus).

Materials and methods: This is a retrospective study of the incoming calls for *Colchicum autumnale* intoxication to the poison Center of Strasbourg between the 1st January 2009 and the 30th November 2012.

Results: 36 335 cases of human exposure to xenobiotics are stored in the database of the poison center during the study period. Plant poisonings account for 4% of cases. 6 of them were hospitalized due to ingestion of *Colchicum autumnale*. There were 3 men and 3 women with an average age of 55 years [36-74 years]. The confusion was made with wild garlic (2 cases) or with wild leek (4 cases).

The time to onset of clinical signs was 1 to 4 hours. All patients had gastrointestinal symptoms (vomiting, diarrhea) as well as elevated liver enzymes (2 to 300 times the norm). Two patients presented a serious intoxication with early leukocytosis, severe coagulopathy, acute renal failure, cardiovascular shock, medullar aplasia, and secondary alopecia. 2 patients had rare complications such as acute pancreatitis, intestinal obstruction, severe polyneuropathy and major hypertriglyceridemia.

The outcome was favorable: all patients survived with a hospital stay from 6 days to 3 months.

It was impossible to assess the quantity of colchicine ingested. The blood dosage of colchicine was performed in 3 patients [4,2 to 15,9 ng/ml] (the toxic concentration being > 5ng/ml)

Discussion: The autumn crocus contains several active molecules including colchicine. The clinical and biological criteria proposed by Bismuth help to predict the severity of the intoxication: the supposed ingested dose (prognostic in case of drug ingestion but not in plants one), the early leukocytosis (WBC 15000/mm³ before H24), the fall of coagulating factors (TP < 20% before H24), the onset of an ARDS or a heart failure within the first 72 hours. The biological assays confirm the diagnosis but there is no linear

correlation between blood concentration of colchicine and the severity of the intoxication.

Conclusion: This study focuses on the severity of the poisoning with *Colchicum autumnale*: unpredictable changes in the acute phase, but depending on the ingested quantity, and complications that may develop life-threatening. In the absence of specific immunotherapy, the treatment is only symptomatic.

Po-701

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SCOMBROID POISONING MIMICS SEVERE ALLERGIC REACTIONS

Maritza Oostenenk (1)

1. SEH, UMCN St. Radboud, Nijmegen, Netherlands

Corresponding author: maritzaoostenenk@hotmail.com

Keywords: Allergic reactions, Poisoning, Public health

Scombroid poisoning mimics severe allergic reactions

M.W.H. Oostenenk*, Registrar Emergency Medicine, Radboud University Nijmegen Medical Centre, The Netherlands

Introduction

Scombroid poisoning is a common type of sea-food poisoning. It is often mistaken for an allergic reaction¹, which could be the reason it is not often diagnosed at the Emergency Department (ED) in the Netherlands. Early recognition can prevent a wrong diagnosis and treatment.

Case description

Four young colleagues came to the ED two hours after eating tuna in the canteen. They complained of flushing, redness of the skin, palpitations and headache. It started 30 minutes after eating the tuna. 2 colleagues had only mild redness of the skin. The other 2 complained about palpitations and headache as well. It all appeared as an allergic reaction. After taken the history and a full physical examination the diagnosis of scombroid poisoning was made. During observation at the ED, all symptoms resolved spontaneously. All 4 patients had an uneventful recovery.

Discussion

Scombroid poisoning, also called histamine fish food poisoning, mimics a severe allergic reaction to fish. It is caused by eating fish with high levels of histamine due to improper processing or storage.

This poisoning is named after the first cases ever described, caused by eating fish in the suborder Scombroidea.

The main symptoms include flushing, rash, urticaria, palpitations, headache, dizziness, sweating and a burning sensation of mouth and throat². Gastro-intestinal symptoms can be present as well. Symptoms begin 10-90 minutes after eating the contaminated fish.

Most cases are self-limiting. The rash lasts 2-5 hours, and the other symptoms will disappear in 3-36 hours.

Sometimes symptoms can be severe and require treatment. Rapid acting antihistamines can be given, along with supportive care.

It is important to explain that there is no allergic reaction to fish.

To forestall further cases of scombroid poisoning you can contact public health authorities to investigate the source and remove the product from distribution².

Conclusion

Although scombroid poisoning is not often seen on the ED it is useful to early recognize the symptoms in order to start adequate therapy. Proper education is important to prevent people from avoiding sea-food.

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Po-702

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METHADONE OVERDOSE PATIENT PRESENTATIONS TO US EMERGENCY DEPARTMENTS

Laura Shih (1), Richard Shih (2)

1. Emergency Department, Somerset Medical Center, Somerville, United States

2. Emergency Department, Morristown Medical Center, Morristown, United States

Corresponding author: shih100@yahoo.com

Keywords: Overdose, methadone, opioids

Introduction: Methadone overdose is an infrequent type of opioid poisoning presentation to US emergency departments (EDs). Compared to other opioid poisonings, methadone is particularly dangerous because of its prolonged duration of action. The epidemiology of methadone overdoses to US EDs is poorly studied.

Study Objectives: To characterize methadone overdoses presenting to New Jersey and New York emergency departments. Methods: Design: A multi-center retrospective emergency department (ED) cohort. Study setting: 23 New Jersey and New York EDs. Subjects: Consecutive patients with the ED diagnosis of methadone poisoning (ICD10 code = T40.3) were identified from October 1, 2004 to September 30, 2009. Results: Out of 4.2 million consecutive patients in the 23 EDs, 64 patients were diagnosed with methadone poisoning. (0.01% of all ED patients), but only 40 had completed charts for review. The patient demographics were as follows: mean age=39.7 years (range:16-62 yrs), gender =50%, mean methadone dose =78mg (range:30-140mg). Overdoses were more frequent on Monday (18%), Thursday (18%) and Friday (20%). The poison center was notified and naloxone was administered in 5% and 27.5% of cases, respectively. The admission rate was 28% due to prolonged sedation or unrelated complications. There were no recorded deaths or intubations in the ED.

Conclusion: Methadone poisoning is a rare presentation to US emergency departments. The risk of mortality and serious morbidity (e.g. intubation) appears to be extremely low.

Po-703

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THE TREATMENT EFFECTIVENESS OF THERAPEUTIC ERYTHROCYTE APHERESIS IN CARBONMONOXIDE POISONING

Hakk? Cuma Türkmen (1), Yüksel Gökel (2), N Rana Di?el (3), Ferda Tekin Turhan (4), Birol Güvenç (5)

1. Emergency Department, Research Hospital of Derince, Kocaeli, Turkey
2. Department of Emergency Medicine, Çukurova University Faculty of Medicine, Adana, Turkey
3. Department of Emergency Medicine, Cukurova University Faculty of Medicine, Adana, Turkey
4. Therapeutic Apheresis, Stem Cell and Criopreservation Unit, Çukurova University Faculty of Medicine Balcal? Hospital, Adana, Turkey
5. Division of Hematology in Department of Internal Medicine, Çukurova University Faculty of Medicine, Adana, Turkey

Corresponding author: ranalpay@gmail.com

Keywords: Carbon Monoxide, Poisoning, Therapeutic Erythrocyte Apheresis

Aim: Carbon monoxide poisoning is a significant health problem and common cause of death in the world. In our study, we aim to determine the frequency of patients who are diagnosed with carbon monoxide poisoning in our emergency service and to cure the patients with therapeutic erythrocyte apheresis in which hyperbaric oxygen therapy is indicated but unavailable.

Patient and Methods: We studied 42 patients (11 males and 31 females) who were diagnosed as carbon monoxide poisoning in our emergency department between September 2010 and May 2012. The mean age of patients was $35,2\pm 15,7$. We treated nine patients (% 21,4) (4 males and 5 females) with therapeutic erythrocyte apheresis method, who had ischemic findings in electrocardiogram, who had elevated cardiac enzymes and whose Glasgow coma scale score was 13 or under. The remaining 33 (% 78,6) patients received normobaric oxygen therapy.

Results: Before therapeutic erythrocyte apheresis, patients' mean carboxyhemoglobin level was $23,43\pm 15,46$ and Glasgow coma scale score was $10,7\pm 3,0$. The average exchange time was $39,22\pm 12,54$ minutes. After the treatment, the average blood carboxyhemoglobin level was $4,25\pm 2,8$ and Glasgow coma score was $14,44\pm 1,67$. There was statistically significant improvement in blood carboxyhemoglobin levels and Glasgow coma scale scores before and after the treatment ($p=0,008$ and $p=0,007$). No patients died. In only one (% 11,1) patient who was treated with therapeutic erythrocyte apheresis, neurological complication was observed secondary to carbon monoxide poisoning; he developed permanent hypoxic ischemic

encephalopathy. One pregnant lady who had indication for hyperbaric oxygen treatment, discharged healthy therapeutic erythrocyte apheresis, and gave birth to a healthy baby girl three months later. Mean carboxyhemoglobin level was $18,42\pm 10,26$ in the patients treated with normobaric oxygen therapy. There was no neurological complications in this group and all were discharged healthy.

Conclusion: We concluded that therapeutic erythrocyte apheresis is an efficient treatment modality in patients with severe carbon monoxide poisoning, and may be used whenever hyperbaric oxygen therapy can not be provided. Randomized controlled studies should be conducted to compare the efficacy of therapeutic erythrocyte apheresis and hyperbaric oxygen therapy in carbon monoxide poisoning since it may be an alternative treatment.

Po-704

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CLINICAL CHARACTERISTICS AND OUTCOMES OF PATIENTS WITH GRAYANOTOXIN POISONING AFTER THE INGESTION OF MAD HONEY FROM NEPAL

Chang Hwan Sohn (1), Won Young Kim (1), Bum Jin Oh (1), Seung Mok Ryoo (1), Dong Woo Seo (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: grayanotoxin, poisoning, Nepal

Most of grayanotoxin poisoning after the ingestion of mad honey made from the nectar of *Rhododendron* species have been reported in the Black Sea region of Turkey. Also, some grayanotoxin poisonings due to mad honey brought from the Black Sea region of Turkey have been reported in Germany, Austria. However, grayanotoxin poisoning cases after the ingestion of mad honey brought from Nepal have been reported very rarely. The aim of this study was to evaluate the clinical characteristics and outcomes of patients who were diagnosed with grayanotoxin poisoning due to mad honey brought from Nepal.

Medical records of 15 patients with grayanotoxin poisoning after the ingestion of mad honey from Nepal who admitted to the emergency department between January 1, 2004 and May 31, 2012 were retrospectively reviewed. The mean age was $52,2 \pm 11,1$ years and 66.7% were males. The mean amount of mad honey ingested was $46,7 \pm 35,7$ cc and the mean time from ingestion to onset of symptoms was $35,9 \pm 30,5$ minutes. In all patients, initial vital signs showed hypotension and bradycardia. The mean pulse rate was $40,9 \pm 5,8$ beats per minute. Initial electrocardiogram showed sinus bradycardia in 8 patients, junctional bradycardia in 4 patients, complete atrioventricular block in 2 patients, and atrial fibrillation with slow ventricular response in 1 patient. Four patients were treated with intravenous normal saline solution only. However, 11 patients were treated with intravenous normal saline

solution and intravenous atropine sulfate in a dose ranging from 0.5 to 2.0 mg. In all patients, blood pressure and pulse rate returned to normal limits within 24 hours. In-hospital mortality was 0.0%.

The present study showed that clinical characteristics and outcome of mad honey from Nepal are similar with those from mad honey from the Black sea region of Turkey. Clinicians should take into consideration the possibility of grayanotoxin poisoning in previously healthy patients presented with unexplained hypotension, bradycardia, and a variety of bradyarrhythmias and obtain a detailed dietary history including the ingestion of mad honey brought from the Black sea region of Turkey or Nepal. For suspected grayanotoxin poisoning, symptomatic treatment and close surveillance should be carried out.

Po-705

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PLASMA LACTATE LEVEL MAY BE AN INSUFFICIENT MONITORING TOOL IN CRITICALLY ILL PATIENT: A CASE OF ISCHEMIA MODIFIED ALBUMIN IN ACUTE GLYPHOSATE POISONING

Ru Bi Jeong (1), Chang Hwan Sohn (1), Bum Jin Oh (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: Ischemia modified albumin, Poisoning, Monitoring

Introduction: To date, plasma lactate level has been thought that the most important monitoring tool to measure systemic tissue hypoxia. However, the time lag and relatively low value in some cases are frequently encountered.

Case: Sixty-seven year old female was admitted emergency room after 80 minutes from acute pesticide poisoning. She drank 500 mL of glyphosate with intension of suicide. She was alert but her vital signs were unstable at admission; BP 84/37 mmHg, PR 97/min, SpO2 98%. After the initial resuscitation management including general decontamination treatment, she moved to the Acute Care Unit and continuous resuscitation due to her unstable hemodynamic status. During the hospital course, we daily measured the ischemic modified albumin (IMA) level using albumin-cobalt binding assay that its value could tell us the tissue hypoxia. Among the monitoring values, the trend of IMA and base deficit would be correlated with the clinical progress (Fig 1).

Conclusion: We experienced that IMA has a more sensitive monitoring value than lactate in critically ill patient in our acute pesticide poisoning patient. IMA could be measured in venous blood and may be a alternative monitoring laboratory value as base deficit. Also, further study is warranted.

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METHEMOGLOBINEMIA CAUSED BY AN INERT INGREDIENT AFTER INTENTIONAL INGESTION OF PESTICIDE: TWO CASE REPORTS

Chang Hwan Sohn (1), Seoung Mok Ryou (1), Bum Jin Oh (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: pesticide, inert ingredient, methemoglobinemia

Introduction:

Methemoglobinemia occurs when hemoglobin is oxidized to form methemoglobin (MetHb), rendering it incapable of oxygen transport and if severe, it leads to tissue hypoxia. Most commonly, acquired methemoglobinemia can arise after exposure to an exogenous oxidizing agent and a variety of compounds are capable of inducing methemoglobinemia. Cases of methemoglobinemia caused by indoxacarb, the active ingredient in some pesticides, have been reported. However, to date, no cases of methemoglobinemia caused by an inert ingredient in pesticide have been reported.

We report herein two cases of toxic methemoglobinemia caused by an inert ingredient in pesticide product after intentional ingestion of pesticide.

Case 1:

A previously healthy 51-year-old male visited to the nearest emergency department (ED) with a history of ingestion of three mouthfuls of pesticide containing 21.3% of mefenacet (CAS registry number 73250-68-7) and 1.3% of cyclosulfamuron (CAS registry number 136849-15-5) as active ingredients in a suicide attempt. He had no past medical problems. He received gastric lavage with 10 L of normal saline and 50 g of activated charcoal. During close observation, dyspnea and cyanosis developed and then MetHb concentration was measured at about 4 hours later after ingestion of pesticide. Initial MetHb level was 25.6%. He was transferred to our ED for antidote therapy. On arrival to the ED, he was drowsy mentality. His blood pressure was 134/95 mmHg, pulse rate was 84 beats/minute, respiratory rate was 20 breaths/minute, and oxygen saturation in pulse oxymeter was 91%. He had dyspnea and lip cyanosis. Initial MetHb in our ED was 12.3%. But because she constantly complained of shortness of breath, we decided to use methylene blue. He received a single dose infusion of methylene blue (2 mg/kg body weight intravenously) over 10 minutes at about 16 hours later after ingestion of pesticide. And then his symptoms were relieved. Methemoglobin level on follow up was 0.1%. On psychiatric consultation, he was considered low risk for a suicide reattempt and close outpatient follow-up with psychiatry was decided. Three days after admission, he was discharged without any symptoms or signs. We did not know the cause of methemoglobinemia at that time.

Case 2:

A previously healthy 56-year-old female visited to the nearest emergency department with a history of ingestion of two cups of pesticide containing 21.3% of mefenacet (CAS registry number 73250-68-7) and 1.3% of cyclosulfamuron (CAS registry number 136849-15-5) as active ingredients in a suicide attempt. She had no past medical problems. She received gastric lavage and activated charcoal. During close observation, dyspnea developed and then MetHb concentration was measured at about 100 minutes later after ingestion of pesticide. Initial MetHb level was 6.3% and MetHb level on follow up was 16.1% after 30 minutes. She was transferred to our emergency department for antidote therapy. On arrival to the ED, he was drowsy mentality. Her blood pressure was 151/81 mmHg, pulse rate was 61 beats/minute, respiratory rate was 20 breaths/minute, and oxygen saturation in pulse oxymeter was 88%. She had dyspnea, general weakness, and lip cyanosis. Initial MetHb in our ED was 21.4%. She received a single dose infusion of methylene blue (2 mg/kg body weight intravenously) over 10 minutes at about 5 hours later after ingestion of pesticide. And then her symptoms were relieved. MetHb on follow up was 1.1%. On psychiatric consultation, she was considered moderate risk for a suicide reattempt and was encouraged to inpatient psychiatric hospitalization. But, three days after admission, she discharged against medical advice without any symptoms or signs. One week after the patient discharged, we contacted a pesticide expert in Korean Rural Development Administration and then could identify exact inert ingredients in the pesticide formulation. We estimated that of inert ingredients, magnesium nitrate was more likely to cause methemoglobinemia.

Conclusion:

The present study highlights the importance of considering the possibility of toxicity caused by an inert ingredient in pesticide and in particular, methemoglobinemia in cases of exposure to an inert ingredient such as magnesium nitrate for its early recognition and antidotal therapy.

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GRAYANOTOXIN POISONING CAUSED BY DRINKING LIQUOR MADE FROM RHODODENDRON BRACHYCARPUM: TWO CASE REPORTS

Byung Ho Choi (1), Chang Hwan Sohn (1), Bum Jin Oh (1)

1. Department of Emergency Medicine, Asan Medical Center, Seoul, Korea, (South) Republic of

Corresponding author: schwan97@gmail.com

Keywords: Rhododendron brachycarpum, Grayanotoxin, Poisoning

Introduction:

Many plants of the Ericaceae family such as Rhododendron, Pieris, Agarista and Kalmia, contain diterpene grayanotoxins. Rhododendron brachycarpum D. Don ex G. Don belongs to the Ericaceae family, which is distributed in

Eastern Asia such as Korea and Japan. Rhododendron brachycarpum contains grayanotoxin and can be poisonous. However, Rhododendron brachycarpum has been known as a panacea in Korean folk medicine and has been widely used in Korea to treat various diseases.

We report the case of two patients with cardiotoxicity after drinking liquor containing Rhododendron brachycarpum to call attention to the potential cardiotoxicity of Korean folk medicine Rhododendron brachycarpum.

Case presentation:

Case 1:

A previously healthy 67-year-old male presented to the emergency department (ED) with a history of drinking about 200 cc of liquor made from Rhododendron brachycarpum followed by chest discomfort and shortness of breath. He had no past medical problems. On arrival to the ED, he was alert mentality. His blood pressure (BP) was 83/52 mmHg, pulse rate (PR) was 32 beats/minute, respiratory rate (RR) was 24 breaths/minute, and oxygen saturation in pulse oxymeter (SpO₂) was 98%. Initial electrocardiogram (ECG) showed marked sinus bradycardia with sinus arrhythmia (Figure 1). He received supplemental oxygen at 4 L/min via nasal prong and 0.5 mg of atropine sulfate intravenously. Ten minutes later, after the administration of atropine, his BP was 119/70 mmHg, PR was 83 beats/minute, RR was 16 breaths/minute, and SpO₂ was 96%. ECG on follow up showed normal sinus rhythm (Figure 2). The results of laboratory tests including cardiac markers were all within normal range. Two days after admission, he was discharged without any symptoms or signs.

Case 2:

A previously healthy 48-year-old male, the son of a former patient, presented to the ED with his father as patient protector. While his father was receiving the emergency care, he went to the toilet in the ED. Five minutes later, he had syncope on his way out of the toilet. Immediately, he was transferred to the resuscitation area in the ED. Initial mentality was drowsy. His BP was 61/43 mmHg, PR was 43 beats/minute, RR was 15 breaths/minute, and SpO₂ was 98%. Initial electrocardiogram (ECG) showed marked sinus bradycardia. He stated that he had no past medical problems and drank about 200 cc of liquor made from Rhododendron brachycarpum with his father. He received supplemental oxygen at 4 L/minute via nasal prong and 1 L of normal saline intravenously over 30 minutes. Thirty minutes later, his BP was 94/55 mmHg, PR was 46 beats/minute, RR was 20 breaths/minute, and SpO₂ was 97%. He received three doses of atropine sulfate (total 1.5 mg) intravenously. Twenty minutes later, after the administration of atropine, his BP was 133/89 mmHg, PR was 82 beats/minute, RR was 18 breaths/minute, and SpO₂ was 100%. ECG on follow up showed normal sinus rhythm (Figure 2). The results of laboratory tests including cardiac markers were all within normal range. Computerized tomography of brain was normal. Two days after admission, he was discharged without any symptoms or signs.

Conclusion:

Clinicians should be familiar with locally available poisonous plants and their toxicity for early recognition and prompt

treatment, especially as grayanotoxin poisoning from ingestion of Rhododendron species. The possibility of grayanotoxin poisoning in previously healthy patients presented with unexplained hypotension, bradycardia, and a variety of bradyarrhythmias should be considered as a differential diagnosis. For suspected grayanotoxin poisoning, symptomatic treatment and close surveillance should be carried out.

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RELATIONSHIP BETWEEN NEUTROPHIL-LYMPHOCYTE RATIO AND CARDIAC INJURY IN CARBON MONOXIDE POISONING

Zerrin Defne Dundar (1), Nazire Belgin Akilli (2), Basar Cander (1), Ramazan Koylu (2), Yahya Kemal Gunaydin (2), Rasim Bilgin (2), Ahmet Caglar (2), Kemal Bicer (2)

1. Emergency Medicine Department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

2. Emergency Department, Konya Training and Research Hospital, Konya, Turkey

Corresponding author: zerrindefnedundar@yahoo.com

Keywords: carbon monoxide poisoning, neutrophil-lymphocyte ratio, cardiac injury

Objective: Neutrophil-lymphocyte ratio is a systemic inflammatory marker that has prognostic value in patients with cardiovascular diseases, cancers, cirrhosis, and renal insufficiency. The aim of this study is to investigate the prognostic value of the neutrophil-lymphocyte ratio in patients with carbon monoxide poisoning in terms of cardiac injury.

Methods: All patients (18 years of age and older) admitted to the emergency department of a training and research hospital with acute carbon monoxide poisoning from 2008 to 2013 were enrolled in this retrospective study. Patients with pregnancy, hematological disease, severe renal, liver or cardiac disease, and cancer were excluded from the study. The characteristics of patients such as age and gender were recorded. Patients' admission complaints, Glasgow Coma Scale scores, carboxyhemoglobin (COHb) levels, systolic and diastolic blood pressure levels, complete blood count results on admission, serial troponin I levels, electrocardiographic (ECG) findings, length of stay in hospital, and outcomes were also recorded. The neutrophil-lymphocyte ratios (NLR) and platelet-lymphocyte ratios (PLR) of patients were calculated. >0.2 ng/mL for troponin I were accepted as indicating cardiac injury. The patients were divided into groups as those with cardiac injury and without cardiac injury. The differences between the groups for parameters were compared. Correlations of NLR, PLR, COHb, and troponin I were examined. The receiver-operating characteristic (ROC) analyses were used to detect the cutoff values of leukocyte, neutrophil and NLR.

Results: A total of 196 patients were enrolled in the study. The mean age of patients was 38.55 ± 18.32 years and 77 (39.3%) of the patients were male. Dizziness, nausea, and vomiting were the common symptoms on admission to hospital. The mean COHb level of patients was $31.39 \pm 8.80\%$. Sinus tachycardia was present 24.5% of patients in baseline ECGs. Cardiac injury was detected in 35 (17.9%) patients during serial cardiac enzyme measurements. The patients with cardiac injury had significantly higher leukocyte and neutrophil levels compared to the patients without cardiac injury (respectively 13.71 ± 5.35 K/uL vs 9.21 ± 3.06 K/uL, 10.49 ± 5.03 K/uL vs 5.81 ± 2.87 K/uL, for both $p < 0.001$). The patients with cardiac injury had significantly higher NLRs and PLRs compared to the patients without cardiac injury (respectively 5.97 ± 4.26 vs 2.82 ± 2.62 , 148.04 ± 98.64 vs 118.55 ± 73.48 ; for NLR $p < 0.001$, for PLR $p = 0.045$). Serum troponin I levels were found to correlate with leukocyte and neutrophil levels, and NLRs (respectively $r = 0.25$; $r = 0.29$; $r = 0.32$, for all $p < 0.001$). For NLR, the area under the ROC curve was 0.763 (95% CI 0.667-0.858) ($p < 0.001$). The cut-off value was calculated as 3.62 and the sensitivity, specificity, positive predictive value, and negative predictive value were 77%, 78%, 37%, and 93%, respectively.

Conclusions: Complete blood count is a cheap and fast resulting laboratory evaluation can be performed on admission to the emergency department. The leukocyte levels, the neutrophil levels, and NLR can be used as prognostic markers in patients with carbon monoxide poisoning for predicting the cardiac injury.

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MUSHROOMS POISONING

Lucio Brugioni (1), Cristina Gozzi (1), Maurizio Tognetti (1), Daniela Vivoli (1)

1. Emergency department, Azienda Ospedaliero Universitaria Policlinico di Modena, Modena, Italy

Corresponding author: brugioni.lucio@policlinico.mo.it

Keywords: poisoning, Amanita Phalloides, N-acetylcysteine

A 70 y.o. man was hospitalized in our Department after he ate pasta with mushrooms that he had picked up in mountain. He presented vomiting, diarrhea and abdominal pain. In the suspect of mushroom poisoning, he underwent a gastric lavage and he received activated carbon with sulphate magnesium. A therapy with N acetylcysteine and hydration was started from the beginning.

The mushroom's examination revealed *Macrolepiota rachodes* and *Omphalotus olearius*.

The first day the biohumoral exams showed a normal value of AST and ALT and of liver function index

The day after AST and ALT showed an important increase (1568U/l and 1520 U/l).

The dosage of amanitina on blood was asked and it resulted positive (24,28 ng/ml)

After 3 days ALT reached 4762 U/l and AST 7069 U/l. Liver function index progressively decreased (PT 34%, INR 2,05); PLT decreased until 100000. Renal function was normal.

Patient presented an acute liver failure and Liver Transplantation Centre of our hospital was informed. A total body TC was performed and it showed a pulmonary embolism that we could not treat with heparin because of value of PT and aPTT.

Therapy with N-acetylcysteine was continued as hydration. The days after biochemical exams started to improve and patient was discharged after 10 days in good health without need of liver transplantation.

Amanita Phalloides is a deadly poisonous fungus widely distributed across Europe. It is responsible for the majority of fatal mushroom poisonings worldwide.

These toxic mushrooms resemble several edible species commonly consumed by humans, increasing the risk of accidental poisoning.

In general, poisoning incidents are unintentional and result from errors in identification. The principal toxic constituent is *alpha amanitina* which damages liver and kidneys. The toxicity is not reduced by cooking, freezing or drying.

The species is known to contain two groups of toxins: the amatoxins, and the phallotoxins. Initially symptoms are gastrointestinal and include abdominal pain, diarrhea and vomiting. A fulminant hepatic failure may then occur. Renal failure and coagulopathy may appear too.

The mortality rate is around 10%

The four main categories of therapy for this kind of poisoning are medical care, supportive measures, specific treatments, and liver transplantation. Preliminary care consists of gastric decontamination with activated carbon or gastric lavage.

Supportive measures are directed towards treating the dehydration. An antidote is not available but some treatments as N-acetylcysteine have been shown to improve survivability

In our patient, the first mushroom's examination that revealed *Macrolepiota rachodes* and *Omphalotus Olearius* could mask the *Amanita* poisoning but the clinical experience brought us to the right diagnosis and the right treatment. This report is useful because in case of mushrooms poisoning is necessary to think to *Amanita Phalloides* poisoning: a quick treatment can save patient's life and avoid fulminant hepatitis

Po-711

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RETROSPECTIVE EVALUATION OF ADMISSIONS DUE TO CORROSIVE SUBSTANCE INGESTION AT ED

Mehmet Ergin (1), Fulya Kose (1), Muhammed Rasit Ozer (1), Kadir Kucukceran (1), Basar Cander (1)

1. Emergency Department, NEU Meram Medicine School, Konya, Turkey

Corresponding author: drmehmetergin@gmail.com

Keywords: corrosive substance, emergent endoscopy, toxicology

BACKGROUND: While oral intake of corrosive substance can cause serious burn and perforations in the esophagus and stomach during acute phase, serious stenosis occurs during chronic follow up. Systemic symptoms are not frequent after acute oral intake whereas there were sudden cardiac death reports in the literature. **METOT:** The patients who had been admitted to our ED between 1 January 2009 and 28 February 2013 were included in the study. Hospital data system research was completed and the patients with acute intake of corrosive substances were identified and their demographic and clinical data were summarized. **RESULTS:** There were 25 patients identified and 52 of whom were male. The corrosive substance ingested was acidic for 52% patients and others were alkaline. There were 60% of cases with accidental ingestion whereas 16% of patients had suicidal purpose. We had 48% of patients who had oesophagogastroduodenoscopy within first 24 hours after oral intake. All these patients had esophagitis and gastritis with varying degrees except one with normal findings. There wasn't any need to have additional therapeutic procedure. There were 32% of patients who were discharged from ED with appointment for oesophagogastroduodenoscopy but we couldn't find their reports. **DISCUSSION:** Corrosive esophagitis is preventable health problem that is very important in terms of socioeconomic aspects. Accidentally intake is much more common suicidal intake, in which unrestrained selling of cleaning products and their storing within non-original packaging at homes are the mainstream reason.

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WARFARIN OVERDOSE: FIVE YEARS OF EXPERIENCE

Sedat Kocak (1), Esmâ Erdemir (2), Birsen Ertekin (3), Defne Dunder (4), Cesareddin Dikmetas (1), Sadik Girisgin (1), Basar Cander (1), Mehmet Gul (1)

1. Emergency department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

2. Emergency department, Kahramanmaraş Necip Fazil City Hospital, Kahramanmaraş, Turkey

3. Emergency department, Beyhekim State Hospital, Konya, Turkey

4. Emergency department, Konya Training and Research Hospital, Konya, Turkey

Corresponding author: skocak@konya.edu.tr

Keywords: warfarin, overdose, bleeding

Objective: Cardiovascular and cerebrovascular diseases are leading causes of death all around the world. Therefore, the preventive measures for those diseases come into prominence and warfarin use is common for this purpose. Warfarin has many drug and food interactions, and a narrow therapeutic window. Bleeding complications can occur during warfarin treatment due to patients' poor compliance with treatment and follow-up period. In our study, we have examined the patients who were admitted

to emergency department due to bleeding complications during warfarin treatment.

Methods: Male and female patients (18 years of age and older) who were admitted to the emergency medicine department of a university hospital between the years 2007-2012 due to bleeding complications or high INR levels without bleeding during warfarin treatment were successively included in this prospective study. Demographic data, physical examination findings, laboratory and imaging results, treatment procedures, and outcomes were recorded. The patients were divided into groups according to age (<45, 45-54, 55-64, 65-74, and ≥75 years of age), admission INR levels (≤5.00, 5.01-9.00, and >9.00) and survival (survivors and nonsurvivors). All parameters are compared between groups. $p < 0.05$ is accepted as statistically significant.

Results: A total of 518 patients were enrolled in the study. The mean age of patients was 64.19 ± 13.28 years, 229 (44.2%) of the patients were male and 289 (55.8%) of them were female. The mean dose of warfarin was 31.9 ± 10.7 mg per week. The most common indication of warfarin treatment was valve replacement (34.2%). When the admission complaints were analyzed, the first three rows comprised gastrointestinal bleeding (21.8%), hematuria (18.1%), and epistaxis (15.4%). No bleeding was identified in 24 (4.6%) of the patients. The overall mortality rate was 7.1%. The survivors had significantly higher hemoglobin levels, systolic and diastolic blood pressures (respectively; $p = 0.001$, $p = 0.004$ and $p = 0.023$) and lower pulse rates, shock index values (for both, $p < 0.001$) than the nonsurvivors. According to comparison of parameters between age groups, the number of patients required erythrocyte suspension transfusion was significantly higher in 75 years of age and older group ($p < 0.001$). According to comparison of parameters between INR groups, pulse rates, shock index values, and the units of transfused fresh frozen plasma were significantly higher among the patients with INR value > 9.00 (respectively; $p = 0.030$, $p = 0.004$ and $p < 0.001$). There was no significant difference between INR groups in terms of erythrocyte suspension transfusion requirement and mortality rates.

Conclusions: In our study, the mortality rate in patients who were admitted to emergency department with bleeding complications due to warfarin overdose is almost 10%. Although the common complications are epistaxis, gastrointestinal, and genitourinary bleedings, mortality is generally due to gastrointestinal, alveolar, and central nervous system bleedings. Hemodynamic deterioration is an important indicator of mortality, whereas initial INR levels have no value in terms of mortality. All patients admitted to emergency medicine with bleeding complications due to warfarin should be closely followed up.

Po-713

Front of the Auditorium poster area

**WHEN METHYLENE BLUE FAILS:
PSEUDOMETHEMOGLOBINEMIA CAUSED BY
SULFHEMOGLOBIN**

Diane P. Calello (1), Lisa Clayton (1), Peter Q. Lee (1), Richard D Shih (2), Michael E. Silverman (2)

1. *Emergency Medicine, Morristown Medical Center, Morristown, United States*

2. *Emergency Department, Morristown Medical Center, Morristown, United States*

Corresponding author: dianepcalello@gmail.com

Keywords: Methemoglobinemia, Sulfhemoglobinemia, Methylene blue

BACKGROUND: Methemoglobinemia results when hemoglobin is subjected to oxidative stress, is detectable by standard co-oximetry, and in most cases is reversed with methylene blue administration. However, there are other substances which may cause interference in the co-oximetry measurement. When treating a patient in which methylene blue fails to lower the methemoglobin concentration, the clinician must consider such other etiologies. We present one such case in which further investigation revealed sulfhemoglobinemia.

CASE REPORT: A 48-year-old male with a history of spina bifida, hydrocephalus, ascending paralysis, restrictive lung disease and chronic constipation presented to the hospital with increasing shortness of breath for 2 to 3 days associated with pulse oxygen saturation (82%). An arterial blood sample was noted to be dark in color with results: pH: 7.38, pCO_2 : 44, paO_2 : 53, HCO_3 : 25.9 and MetHb value was 28%. Methylene blue was administered twice at 1mg/kg. Post-methylene blue administration MetHb values were: 29% and 25.40% respectively. Whole blood was sent for analysis to an outside lab with Perkin Elmer co-oximeter revealing a 0.6% methemoglobin concentration, and 3.7% sulfhemoglobin concentration. On further history, the patient denies exposure to nitrates, sulfa, metoclopramide and other known sulfhemoglobin inducers, but does have a history of chronic constipation, which has been reported to cause sulfhemoglobinemia. The patient's "pseudo-methemoglobin" concentration declined over the course of his hospitalization without further intervention, and he was discharged on HD 10 without sequelae.

CASE DISCUSSION: Standard co-oximetry measures methemoglobin among a limited number of wavelengths. However, alternate hemoglobin spectra may not be detected with traditional methods, and may require expanded co-oximetry methods. In this patient, sulfhemoglobin appeared to be responsible for the entire value of methemoglobin measured on initial testing. Prior reports have demonstrated a similar magnitude of interference with this level of sulfhemoglobinemia.

CONCLUSION: In the patient in whom methylene blue administration fails to improve methemoglobinemia, physicians should maintain high suspicion for sulfhemoglobinemia causing false elevation in measured methemoglobin concentrations.

Po-714

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DATURA STRAMONIUM ("JIMSON WEED") POISONNING : AN OBSERVATIONAL STUDY

Jean-francois Vigneau (1), Jonathan Clarke (2), Marguerite Simon (2), Mustapha Sebbane (2), Richard Dumont (2)

1. Emergency Department, Hopital Lapeyronie, Montpellier, France
2. Emergency department, Hopital Lapeyronie, Montpellier, France

Corresponding author: jfvigneau@yahoo.fr

Keywords: Datura stramonium, poisoning, emergency department

Introduction: Datura stramonium, or Jimson Weed, is a plant of the nightshade family easily obtained from fields and gardens. Its leaves, roots and seeds are sought for their visual and auditory hallucinogenic effects in both the festive and addictive setting. The alkaloids contained (atropine, scopolamine and hyoscyamine) cause an anti-cholinergic syndrome that is both central; with agitation, hallucination, and confusion, and peripheral; with bilateral mydriasis, tachycardia and mucosal dryness. The danger is linked, for the most part, to selfharm or aggression towards others.

Methods: Retrospective observational study. We researched the cases of poisoning diagnosed over the past ten years in our Emergency Department, by examining the patients' electronic files.

Results: We uncovered 10 cases of poisoning, out of approximately 500,000 attendances over 10 years in our Emergency Department. Every case took place between the months of May and October and they were always voluntary acts. 7 of the 10 patients were of male gender. The average age was 25 years +/- 12 (15-53 years), with 6 patients aged less than 20 years. The diagnosis was always made upon interrogation. In 5 cases the poisoning was part of multi-substance ingestion and 5 of the patients were multi-substance abusers. All patients presented with mydriasis, 5 with hallucinations and psychomotor agitation, requiring treatment with benzodiazepines, of which 2 required physical restraining measures. A positive outcome was invariably obtained without the need for physostigmine as an antidote. We did not find an increase in the number of cases over the duration of our study.

Conclusion: Datura, easily available both over the internet and in the wild, is well known to patients, often young, seeking substance-related "highs". Analysis for toxicology by spectrometry is not part of current practice and is only available in a limited number of laboratories. The diagnosis should be evoked by clinical signs and upon interrogation.

Po-715

Front of the Auditorium poster area

RECREATIONAL ALCOHOL INTOXICATION WITH HIGH MORTALITY – A COMMUNITY FOOD INCIDENT?

Mihai Botea (1), Zsolt Beres (1), Hadrian Borcea (1), Adriana Kerezsi (1), Ioan Magyar (1), Carmen Pantis (2), Mircea Sandor (3)

1. Emergency Department, Oradea County Clinic Emergency Hospital, Oradea, Romania
2. ICU, Oradea County Clinic Emergency Hospital, Oradea, Romania
3. Medicine and Pharmacy Faculty, University of Oradea, Oradea, Romania

Corresponding author: drmob78@yahoo.com

Keywords: toxic alcohols, high mortality, food incident

This scientific paper presents a study on 20 cases of toxic alcohols voluntary ingestion presented in a period of 2 months (March-April, 2013) in the Emergency Department of Oradea County Clinic Emergency Hospital. We mention that our county is having 450.000 inhabitants. From the history we found out that all patients were drinking for recreational use either homemade alcohol either medical alcohol. The symptoms started initially with inebriated status which suddenly progressed to general weakness, ataxia, dizziness, headache, nausea and vomiting, blindness and a quick drop in GCS from 15 to 6-7 in less than one hour. In 3 cases was reported cardio-respiratory arrest after less than one hour following the alcohol intake. Despite of emergency treatment the patient's condition was quickly deteriorating with severe acidosis (Ph = 6.7 average) with multi organ failure. The mortality was 85%. The survivors were classified as experiencing "major" disability.

We only can suspect the methanol intoxication according to the symptoms reported, but we can't exclude other toxic alcohols.

It is important to recognize that these numbers likely underestimate the true incidence of exposure, however, because of both a failure to recognize the ingestion as well as a failure to report the suspected or known ingestion to a poison control center.

Po-716

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FOLLOW UP OF THE DELAYED NEUROLOGICAL SYNDROME IN ACUTE CARBON MONOXIDE INTOXICATION

Massimo Zannoni (1), Giorgio Ricci (1), Eva Formaglio (2), Rosalia Codogni (2), Stefania Puglisi (2), Cristina Tobaldini (2)

1. Emergency Department, Azienda Ospedaliera Universitaria Integrata Verona, Verona, Italy
2. Postgraduate School of Emergency Medicine, University of Verona, VERONA, Italy

Corresponding author: massimo.zannoni@ospedaleuniverona.it

Keywords: Delayed neurological syndrome, Carbon monoxide intoxication, Follow up

The Carbon monoxide (CO) poisoning is one of the most common, but also more subtle, cause of poisoning at home

and at work in industrialized countries. CO acute intoxication is almost certainly under diagnosed due to the variability of the occurring clinical picture. In Italy, CO poisoning each year cause about 6000 hospitalizations and over 350 deaths. It should be noted, also, that exposures for long periods of time may lead to accumulation phenomena that often cause cardiovascular, respiratory and neurological symptoms like hypotension, arrhythmias, myocardial ischemia or infarction, pulmonary edema, tachypnea or respiratory arrest, confusion, irritability, ataxia, and loss of consciousness. After the acute intoxication, onset of neurological defects, which are permanent in some cases, may occur in the first 40 days. It is the so called "delayed neurological syndrome (DNS)", or "post-interval syndrome", whose frequency is estimated to be between 5 and 76% depending on the methods of investigation. The pathogenesis of DNS is still unclear, probably related to ischemia of the brain stem, blockade of the mitochondrial respiratory chain or lipid peroxidation. Symptoms vary widely from defects of memory, loss of concentration (probably the most frequent), mental deterioration, urinary and fecal incontinence, parkinsonism, cortical blindness, seizures, peripheral neuropathies, personality changes, Wernicke's aphasia, Korsakoff Syndrome, agnosia, mutism, dementia, psychosis, manic-depressive illness. The follow-up of CO poisoned patients has to be focused at first on the recognition and treatment of cardiac involvement. Nevertheless the appearance of neurological disorders, even after a free interval, must be carefully evaluated. Because the first symptoms to appear are usually cognitive and memory impairment, cognitive tests should be administered as soon as possible in order to early assess the severity of neurological sequelae, repeating the tests one month after acute intoxication. We report the experience of the Toxicology Unit of the Emergency Department of the Azienda Ospedaliera Universitaria Integrata in Verona (Italy) from August 2008 until March 2013. During the study period acute CO intoxications were 57 (28 females, 29 males), the mean age was 42.6 years (DS 16.7 years). Accordingly with the current guidelines we administered cognitive tests after one week and one month from the intoxication. In case of cognitive tests detecting a neurological impairment, a 3 TESLA MRI was performed in order to assess brain injury. We followed up 45 patients (24 females, 21 males; mean age: 55.4, DS 22.9 years). 20 patients did not show any delayed neurological disorders and 20 had slight alterations in cognitive tests, regressed within three months of the event; 5 patients showed signs of DNS, presenting irritability, memory and concentrations disorders, dysesthesia and paresthesia of the upper limbs. MRI was performed for all patients with neurologic abnormalities but they did not showed any brain injuries. It is interesting to note that all 5 patients who experienced the major delayed symptoms, were those with more severe symptoms at the time of the acute event. No relationship between neurological symptoms and carboxyhemoglobin levels was detected. DNS prevention is one of the fundamental goals in the treatment of acute CO poisoning although there are no criteria for determine the risk of DNS onset. Of paramount importance is prompt recognition of sequelae: appropriate information to the patients help in

early detection. Our experience, in collaboration with the Unit of Neurology in our hospital, by means of cognitive tests combined with MRI imaging, could get improvement treatment and prevention of DNS.

Po-717

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EXPOSURE TO FIRE SMOKE IN PRISON. NATIONAL SURVEY

Frédéric Lapostolle (1), Fadi Meroueh (2), Jean-Yves Lardeur (3), Sheila Gasmi (1), Michel Galinski (1), Yves Lambert (4)

1. SAMU 93 - UF Recherche-Enseignement-Qualité, AP-HP, Hôpital Avicenne, F-93000 Bobigny, Université Paris 13, Sorbonne Paris Cité, EA 3509, France

2. UCSA, CHU Lapeyronie 371 av du Doyen G. Giraud, F-34295, Montpellier, France

3. Urgences-SAMU 86, CHU de Poitiers, 2 rue de la Milétrie, F-86021, Poitiers, France

4. Hôpital Mignot, SAMU 78, Versailles, France

Corresponding author: frederic.lapostolle@avc.aphp.fr

Keywords: Smoke, Prison, Cyanides

Introduction

The prison environment is conducive to fire. Because of confinement, consequences can be disastrous. However, no scientific data exists regarding this issue.

Objective

To perform a survey on fire exposure in French prisons.

Methods

National Survey of Medical Department in French prisons. Questionnaire was sent to medical directors or officers of health in Medical Department.

Data collected: number of prisoners, distance from Mobile Intensive Care Unit (MICU), number of fires, place of the fire (cell or not), moment of the fire (night or day), victims' management and outcome, medical equipment, facilities and knowledge of specific treatment for cyanide poisoning. This study focused on the year 2011. It was conducted between September and October 2012.

Results

We obtained 84 answers among 174 (48%) prisons. The median number of prisoners was 334 (25th-75th percentile 135-633) (total: 32.126). The median distance between the prison and the nearest MICU was 5 (3-10) km and the estimated median arrival time 10 (6-15) min.

In 2011, 321 fires have been reported, either in median 2 (1-5) per prison. 66% of prison faced at least one fire in the year. These fires occurred in cells in 95% of cases, during the daytime in 66% of cases.

228 people were involved in fire: 178 (78%) prisoners and 50 (22%) staff members of the prison. Victims required transfer to hospital in 49% of cases, others (51%) remained on site. Four (2%) deaths were reported. The ratio was one victim for 141 prisoners and one death for 8.031 prisoners per year.

A specific protocol to support fire victims existed in 25 (30%) institutions. 54 (69%) had an emergency bag, 75 (91%) a pulse oximeter, 76 (93%) oxygen and 3 (4%) hydroxocobalamin. 41 (51%) were aware of antidotal treatment for cyanide poisoning caused by smoke fires.

Conclusion

The risk of being a fire victim (1/141) and the risk of death (1/8.031) in prisons were major. In contrast, in Ile-de-France, the global risk of being a fire victim is < 1 for 100,000 inhabitants. Specific protocols involving SAMU should be locally discussed.

Po-718

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A CASE SERIES OF 223 PATIENTS BITTEN BY THE COMMON EUROPEAN ADDER (VIPERA BERUS)

Mette Nagstrup Hermansen (1), Andrea H. Krug (2), Eirik Tjoennfjord (3), Mikkel Brabrand (4)

1. Department of Anaesthesiology, Sydvestjysk Hospital Esbjerg, Esbjerg, Denmark

2. Department of Medicine, Sydvestjysk Hospital Esbjerg, Esbjerg, Denmark

3. Department of Haematology, Sydvestjysk Hospital Esbjerg, Esbjerg, Denmark

4. Department of Cardiology, Sydvestjysk Hospital Esbjerg, Esbjerg, Denmark

Corresponding author: nagstrup@dadlnet.dk

Keywords: Vipera berus, Treatment and management of patients bitten by a common European adder, intensive care unit, compartment syndrome

Introduction

The poisonous snake known as the common European adder, can be found in most European countries and has been observed as far away as East Asia. In Denmark, the common European adder is the only inhabitant poisonous snake and the highest number is found in areas with sand dunes and heather e.g. close to the beach. Most Danish physicians rarely encounter patients bitten by the common European adder, but as our hospital, the regional hospital of Esbjerg, Denmark is located close to its natural habitat, we have developed some experience in treating these patients.

The aim with this study was to present data on a case series of patients treated at our hospital after being bitten by the common European adder.

Methods:

This was a retrospective case series of all patients bitten by a common European adder and admitted to the regional hospital of Esbjerg, Denmark from 1 January 1994 to the 31 December 2012. Only patients with missing data or incorrect diagnosis were excluded from analyses. Data will be presented descriptively as median (inter-quartile range [IQR]) or proportions wherever appropriate. According to Danish law, approval by the regional ethics committee was not required.

Results:

A total of 234 patients were admitted to the hospital under the diagnosis of snakebite. We excluded 15 patients (6.4%) due to missing data or incorrect diagnosis. Of the 219 patients that we were able to include, 93 (42.7 %) were Danish, 107 (48.9 %) German and 19 (8.7 %) had other nationalities. Median age was 35 years with a range from 2-78 years. The patients were admitted for one (IQR 1-2) day. Not all patients saw what had bitten them, but 172 (78.5 %) had two puncture marks consistent with an adder bite. 141 (64.4%) were only mildly affected. Out of the 219 patients, 194 (88.6 %) had edema, 166 (75.8 %) complained of pain at the location of the bite and 136 (62.1 %) discoloration. 54 (24.7%) complained of nausea, 44 (20.1 %) of vomiting, 29 (13.2 %) had abdominal pain and 13 (5.9 %) diarrhea.

Of the 78 patients (35.6%) with moderate to severe symptoms, 8 (10.3 %) complained of shortness of breath (none were intubated), and two (2.6%) had affected sensibility in the effected extremity (none were discharged with any neurological findings). 14 (6.4 %) patients received adrenalin (i.v. or i.m.) due to hypotension and ten (4.6%) were administered a specific antidote. 89 patients (40.6%) received steroid treatment and 143 (65.3 %) received anti-histamines.

33 (15.1 %) were admitted to the intensive care unit, five patients (2.3 %) developed compartment syndrome and required fasciotomy, none required amputations and we experienced no fatalities

Conclusion:

Most exposures to venom from the common European adder resulted in mild disease. 15.1 % were admitted to the intensive care unit, 4.6 % were treated with an antidote, 2.3 % developed compartment syndrome that required surgery and no patients died.

Po-719

Hall Accueil Expo poster area

THE DEMOGRAPHY OF TRANSPORTED PATIENTS WITH MEDICOPTER TO IMAM KHMEINY HOSPITAL

Samira Esfandyari (1), Mohammad Kalantari Meibodi (2)

1. pediatric ward, student reasearch committe shiraz medical science ,shiraz, shiraz, Iran, Islamic Republic of

2. emergency medicin, shiraz medical university, shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: air medical, transport, trauma

Introuduction:Within the past centry truma became the leading cause of death and disability In Africa and some part of asia truma and Because there has been much less research efforts in the field of truma has been termed the neglected disease of modern socitycause .This phrase may also apply to the status of truma in most developing nations where expenditure on published health program and research on truma are minuscule.

Methods: Since the beginning of the month of Khordad in 1379 air ambulance with the purpose of rapid transporting of severe injured patients has been established.

Because this form of transportation involves great budget to government we decide to evaluate such service to patients in the hospital. We hope that this research can determine some aspects of the epidemiology of trauma and quality of urgency service.

In this study the demography of transported patients with medicopter to Imam Khomeini hospital from the beginning of this service with complete check lists.

Results: In 158 cases the male to female ratio was 2/8 and the most prevalent age to injury was 30 and 92% of them were injured in accidents that shows the necessity of better propagatory and executive programs in traffic field.

The most prevalent injured site was extremity followed by head & neck. The most severe injury was seen in patients with injury in head & neck & thorax. The mean of golden time standard deviation was 23.5. Most patients were treated in general surgery and orthopedy services that shows the necessity of more attentions in these services. Outcome of patients: most of cases had left the hospital with their own will.

This shows the dissatisfaction of patients about services.

Po-720

Front of the Auditorium poster area

ESTIMATION THE COSTS OF TRAFFIC TRAUMA AND IDENTIFY COST PREDICTORS

Niloufar Derakhshandeh (1)

1. Pediatric Department, Loghman'e Hakim Hospital, Tehran, Iran, Islamic Republic of

Corresponding author: arashmanouchehrifar@yahoo.com

Keywords: Motor vehicle crashes, costs of traffic trauma, morbidity and mortality

BACKGROUND: Motor vehicle crashes cause significant morbidity and mortality annually. Goal of this study is to estimate the costs of traffic trauma and identify cost predictors. We aimed to determine relationship between age and sex with this type trauma.

METHODS: The study population consisted of 200 patients (male 89% and female 11%) included in the emergency department for one year (Aug.2008 to Aug.2009). A retrospective study by files performed.

RESULTS: This traumatic patients admitted in orthopedics, neurosurgery and surgery wards. 54% of patients had 18 to 40 years old, and 9% of them had greater than 60 years old (Age<18 was 15% and 41 to 59 years old was 22%). The most kind of accidents was motor vehicle accident (MCA), 47% and roll over, mechanical problems and the fatigue of drivers was only 6% of reasons. The mean cost of one patient was 16221035 Rials. The highest cost was 21920581 Rials in neurosurgery ward. The orthopedics and surgery wards were in the next levels. The admission rate was 66%

in orthopedics, 20% in surgery and 14% in neurosurgery wards.

CONCLUSIONS: The cost of traffic traumatic patient in this study is high, significantly. Our suggestions are aggregation of the data, security instruction, preference of security design, annoyance of alcohol and drug abuse, first aids, deletion of reasons, intensification of the laws, effective rehabilitation and research in accidents.

Po-721

Front of the Auditorium poster area

TRAUMA INDUCED COAGULOPATHY CLINICAL SCORE: A TOOL FOR SEVERE TRAUMA PATIENTS MANAGEMENT

Martin Tonglet (1), Jean Marc Minon (2), Michel Vergnion (1)

1. Emergency department, CHR Liège, Liège, Belgium
2. Blood bank, CHR Liège, Liège, Belgium

Corresponding author: tongletm@yahoo.com

Keywords: trauma, bleeding, management

Exsanguination is a frequent cause of early death in severe trauma patients. Linked to the severity of trauma and the extent of tissue damage, an early coagulopathy of trauma (EACT) worsens the bleeding and the patient's prognosis. This early coagulopathy quickly creates a hypocoagulable state that can be compared to a Disseminated Intravascular Coagulopathy (DIC) of haemorrhagic phenotype. It is generally followed, within the following days, by a DIC of thrombotic phenotype potentially causing a severe risk of multiple organ failure by micro-thromboembolic events.

Trauma patients can be referred to general emergency units or level one highly specialized trauma centres. Trauma centres can offer 24h/7d the resources needed for an early and aggressive haemostatic resuscitation which is part of damage control resuscitation (DCR). This can't be reasonably done in general units as maintaining this kind of resources wouldn't be logistically and economically feasible.

Active bleeding associated with EACT requires a very early and specific therapy. DCR associates damage control surgery with damage control resuscitation consisting in permissive hypotension and early aggressive haemostatic resuscitation. This strategy needs to be started as early as possible and must follow recent guidelines in terms of transfusion ratios, use of haemostatic products, and coagulation assessment with conventional laboratory analyses or thromboelastographic methods. It also implies the availability of dedicated equipments and human resources in the emergency department and in the operation theatre.

In Belgium, no trauma centre exists and severe trauma patients are referred to emergency units of general hospitals. In our general emergency unit, we can't possibly maintain the resources needed for DCR 24h/7d for a limited

number of cases (around 50 per year) diluted in a large number (65 000) of non major trauma cases.

Taking this into consideration and the need for very early aggressive haemostatic therapy in EACT, we have decided to develop an easy-to-measure purely clinical score aiming at flagging patients with EACT on the site of injury and allowing to alert the hospital team before patients' hospital entry. This "on-site flagging and alert" was indeed for us the only way to allow activating the necessary resources for initiating DCR at patients' hospital entry, giving so to the pre-selected patients the same service as in a trauma centre.

The Trauma Induced Coagulopathy Clinical Score (TICCS) can be calculated by paramedics in less than one minute on the site of trauma and then communicated to the hospital, allowing taking the necessary organisational measures before patient's arrival. The TICCS is a 0-18, 3-item score considering the severity of trauma, its hemodynamic repercussions and the extent of the body injury.

A hypotensive trauma patient with head, torso, abdominal and both upper extremities clinical lesions will have a TICCS of 14 and will be flagged as suffering from active bleeding and EACT as soon as we get the call from the paramedics on the site of injury. Specific resources will be prepared, allowing to offer a high quality DCR at patient's arrival: human resources will be waiting in the shock room, the massive transfusion protocol will have been activated with the immediate thawing of 2 Fresh Frozen Plasma units and the availability of 4 Packed Red Blood Cells units, the operation theatre will be alerted as well as radiology for radiological studies as needed.

So, early, pre-hospital, flagging of trauma patients with active bleeding and EACT could allow general units to prepare the specific resources needed to offer high quality DCR for the limited number patients needing it.

A prospective single-centre non-comparative non-interventional open study has been designed in our centre to validate, in 100 trauma patients, the correlation between TICCS and a TEG made on a sample taken at the latest 30 min after the arrival of the mobile emergency unit on the site of trauma. The study is still ongoing however the available interim results are so that the hospital transfusion committee is currently evaluating the possibility of introducing TICCS in the trauma transfusion guidelines.

Interim results of the clinical trial will be presented as well as actual patients' cases and proposed trauma transfusion guidelines for a general emergency unit will be discussed.

Po-722

Front of the Auditorium poster area

THE STUDY FOR THE MANAGEMENT OF LIVER INJURY IN TERTIARY JAPANESE HOSPITAL - PARTICULARLY THE EFFICACY OF TRANS ARTERIAL EMBOLIZATION FOR SEVERE HEPATIC INJURY-

Shigenobu Maeda (1), Shinsuke Tanizaki (1), Jyun Yosikawa (2), takashi Matsumoto (1), Kenichi Kano (1), Katsuki Matsumiya (1), masafumi Tada (1), Hiroki

Azuma (1), Masahiro Yotsumoto (1), Atsushi Yamamoto(1), Syotaro Kawamura(1), Hideya Nagai (1), Makoto Se

1. Emergency Department, Fukui Prefectural Hospital, Fukui, Japan
2. Department Of Radiology, Fukui Prefectural Hospital, Fukui, Japan

Corresponding author: pxt01173@nifty.ne.jp

Keywords: trans arterial embolization, liver injury, treatment

Background: The efficacy of transarterial embolization (TAE) for severe blunt hepatic injury has been reported. We also have reported the efficacy of TAE for retroperitoneal bleeding of pelvic fractures. We performed retrospective study evaluating the effectiveness of the TAE for liver injury of our ER patients from January 2007 to December 2011.

Fukui prefectural Hospital (FPH) is located in central Japan. The hospital has 960 beds, including 200 beds for psychiatric patients. Also, FPH is the only hospital in Fukui capable of tertiary care. The FPH cover 800,000 populations in this area. About 30,000 patients visit emergency department in FPH per year.

Methods: We retrospectively studied characteristics of patients with liver trauma who visit emergency department in FPH from January 2007 to December 2011. We conducted this study utilizing data stored in the hospital's electronic medical records.

Results: We evaluated total 65 patients with mean of age 41±24years. The mean ISS (Injury Severity Score) was 18±12. Table1 contains all 65 patients grouped according to the OIS (organ injury scaling) grade of liver injur(Table1) 49 patients (75%) were treated conservatively, 7 patients (11%) underwent only laparotomy, 7 patients (11%) underwent only TAE, and two patients (3%) underwent laparotomy after TAE. Therefore total nine patients underwent TAE. The characteristics of the nine TAE patients show in detail table 2.

TAE Patients in detail

The mean of age was 55, the mean of ISS was 24, the mean length of stay in hospital was 24days, and the mean length of ICU stay was 1.3days.

These cases classified by OIS classification of liver injury ; 2 patients were OIS2 II, One patient was OIS III and six patients were OIS IV. The mean time from arrival to TAE was 100 minutes.

The mortality was 22 %(2/9). In these mortal cases, patients were died from other causes than liver injury. The ISS of two cases were 41 and 50.

We consider the TAE for severe liver injury is clinically effective because it is less invasive than laparotomy. In the two cases that underwent laparotomy after TAE, surgical doctors found that the bleeding in liver was partially controlled by the TAE.

We report clinical effectiveness of TAE for liver injury, as well as the analysis and consideration from the literature.

Table1 Characteristics of liver trauma study patients grouped according to OIS classification of liver injury

OIS I OIS II OIS III OIS IV OIS V only elevated liver enzyme

Number of patients per group: OIS I(14) OIS II(29) OIS III(6) OIS IV(0) OIS V(0) OIS VI(6) only elevated liver enzyme(6)

Patient Characteristics

Age(mean): OIS I(43)OIS II(42)OIS III(31)OIS IV(46) only elevated liver enzyme(43)

ISS(mean): OIS I(13) OIS II(19) OIS III(25) OIS IV(22)only elevated liver enzyme(13)

Blunt mechanism of injury(%):OIS I(100)OIS II(97)OIS III(100)OIS IV(100) only elevated liver enzyme(100)

Mortality (%):OIS I(0)OIS II(17)OIS III(33)OIS IV(10) only elevated liver enzyme(0)

Table2 Characteristics of TAE cases

Number of patients:(9)

Age(mean) :(55)

ISS(mean):(24)

OIS: OIS II(2) OIS III(1) OIS IV(6)

Mean length of stay in hospital: 24days

Mean length of ICU stay: 1.3days

Mean duration from arrival to TAE: 100minuts

Laparotomy after TAE: 22%(2/9)

Mortality):22%(2/9: ISS:41,50)

Po-723

Front of the Auditorium poster area

T PEVALENCE OF DRUG ABUSE IN DRIVES OF MOTOR VEHICLE ACCIDENT,

Mohammad Kalantari Meibodi (1), Samira Esfandiyari (2)

1. emergency medicin, shiraz medical university, shiraz, Iran, Islamic Republic of

2. pediatric ward, student reasearch committe shiraz medical science ,shiraz, shiraz, Iran, Islamic Republic of

Corresponding author: kalantari_meibodi@yahoo.com

Keywords: Drivers-, Opioud-A, -Analgsiy)

introduction

drivers of Motorcycles and inter-civil means comprise majority of applicants to Trauma emergencies in hospitals, so it is important to consider conditions of Narcotics abuse in increasing probable hard accidents caused by decreasing reflex response of the body and awareness status.

In these research, accomplished a foresighted consideration in this field over 100 patients injured on year 2007 from month July to last month of Oct. and hospitalized in Imam Hossein hospital, emergency part in east of Tehran because of bone fracture or dippers lacerassion of skin or dislocation of organs.

Methods:In this research, we considered 100 patients drives Of motorized went to Traumatic emergency of Imam Hossein Hospital on year 2007 from beginning of Month July to the middle of Month Oct. hospitalized because of bone fracture or vast laceration of skin or dislocation of organs, they disregard to sex, age and vehicle type. Stabilized first vital signs and then we get a history for using narcotics for the patient or his/her companions, and we get urinary sampling and send the kit to the lab.

It is mentioned that these actions accomplished by the consent of the patient and his/her companions and we convinced them that it is important to determine the type and rate of prescribed tranquilizer by the practitioner..in this time we considered 109 patients nondrives motorized with non traumatic problem(for example infectious disease,surgery,chest pain,cerebro vascular accident,psychology,gynecology)went to internis emergency of emam hossien hospital

results:

Final findings showed that these 100 patients including 19 women, none of them have any narcotics abuse, neither from their history nor from their lab kits, but from 81 men, only 35 or 43% were healthy from history and lab kit consideration while 39 people of them, 48%, have narcotics abuse from history or laboratory consideration. .

Conclusion:

It is necessary for practitioners working at emergencies of hospitals in Trauma part to prescribe tranquilizers in higher dosages and it is necessary to do cultural acts for reducing Narcotics abuse by health care part.

Po-724

Front of the Auditorium poster area

PROSPECTIVE ANALYSIS OF GERIATRIC PATIENTS ADMITTED TO THE EMERGENCY DEPARTMENT WITH TRAUMA

Abdulkadir Akturk (1), Akkan Avci (1), Muge Gulen (1), Mehmet Oguzhan Ay (1), Ferhat Icme (2), Salim Satar (1)

1. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey

2. Emergency Department, Ankara Ataturk Education and Research Hospital, Ankara, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Geriatrics, trauma, emergency

Objective: The aim of this study is to reveal the demographic characteristics, causes of trauma, physical examination findings, the presence of fractures and the status of the outcome of the geriatric trauma patients admitted to the emergency department of an educational research hospital.

Materials and Methods: This study covers all the cases over 65 years who were admitted to emergency department with trauma between September 1 2011-31 August 2012. The demographic characteristics of the patients such as, age, gender, date of application and as well as the causes of trauma, physical examination findings and outcome situation in the emergency department were evaluated. The study was performed prospectively. SPSS V.20 was used for statistical analysis of the data obtained.

Results: Total 175 patients were included to the study, 74 were male (42.28%) and 101 were female (57.72%). The mean age of male patients were 75.01 ± 6.557 while the mean age of female patients were 76.10 ± 7.353. The most

common cause of trauma in both gender was falls. This rate was 91.1% in female and 8.9% in male patients. 40.6% of the female patients and 27% of the male patients were admitted to the hospital before because of any trauma. The most common form of trauma according to exposed body localization in both gender was extremity traumas. It was seen in 51.5% of the females and 56.8% of the males. 30 female patients (29.7%) and 13 male patients (17.6%) had fracture in limbs. 78.3% of all patients were discharged from the emergency department and 21.7% of the patients were hospitalized. None of the patients were died in emergency department and none of the patients were referred to another institution from the emergency department. Total 38 patients were hospitalized, 32 of them were discharged, 2 of them were referred to another institution, and 4 of them were died. 26 of 38 hospitalized patients had undergone surgery while 20 of them were orthopedic surgeries.

Conclusion: Most of the geriatric trauma patients constitute of traffic accidents and falls from height. These injuries can lead to serious morbidity and mortality in elderly people, and these problems can be prevented significantly by giving information and education to family members and caregivers in terms of preventive measures.

Po-725

Front of the Auditorium poster area

ANALYSIS OF ADULT TRAUMA PATIENTS ADMITTED TO EMERGENCY DEPARTMENT

Sema Puskulluoglu (1), Ayca Acikalin (2), Mehmet Oguzhan Ay (3), Nalan Kozaci (4), Akkan Avci (3), Muge Gulen (3), Salim Satar (3)

1. Emergency Medicine Service, Cukurova Dr. Askim Tufekci State Hospital, Adana, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
4. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Trauma, emergency, mortality

Background and Objective: We aimed to determine demographic characteristics, etiology, morbidity and mortality rates and prognosis of adult trauma patients admitted to emergency medicine department.

Material and Methods: Patients over the age of 18, who admitted to emergency medicine department with "General Body Trauma" (GBT) between 1 March 2011-31 August 2011, were included in this study. Demographic data, data regarding etiological factors causing trauma, outcome of the patients in the emergency department, departments to which patients are hospitalized and outcome of patients in those departments were recorded in the standard data entry form. SPSS 16.0 package program was used for statistical analysis of data.

Results: During the study period, 12.29% of 110.495 patients, admitted to the emergency department, were having GBT. Simple extremity injury ranked first among etiological factors (38.28%) and falls was in second place (31.7%). Extremity trauma was observed mostly (55.58%). Glasgow coma scales (GCS) were between 13-15 in 99.71% of the patients. 9.6% of patients with GBT had a CT scan and 84.5% of CT scans were evaluated as normal and cranial CT was the most requested one. Only 6% of the patients were hospitalized. 0.9% of all GBT patients died.

Conclusions: The general body traumas often consist of simple injuries. These patients can be discharged with a complete medical history and careful physical examination. The time and labor allocated to patients with severe and multiple traumas can be increased by reducing rate of unnecessary medical tests and waste of time.

Po-726

Front of the Auditorium poster area

EVALUATION OF HEAD TRAUMA CASES IN THE EMERGENCY DEPARTMENT

Alim Cokuk (1), Nalan Kozaci (2), Mehmet Oguzhan Ay (3), Ayca Acikalin (4), Meltem Seviner (5), Salim Satar (3)

1. Emergency Medicine Service, Kirklareli State Hospital, Adana, Turkey
2. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
4. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
5. Emergency Medicine Service, Hatay State Hospital, Hatay, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Head trauma, epidemiology, emergency

Aim: In this study, we aimed to determine the epidemiological characteristics, morbidity and mortality rates of patients admitted to the emergency with head trauma.

Material and Methods: In this study, ambulatory and hospitalized patients over the age of 18 brought to the Emergency Department because of head trauma between 01.12.2009 - 31.12.2010 were analyzed retrospectively. Patient data were recorded to standard data entry form. SPSS 17.0 package program was used for statistical analysis of data. The statistical significance level of all tests was $p < 0.05$.

Results: 5200 patients were included in this study. The average age of the patients was 39.97 ± 16.66 years. 4682 (90 %) patients were discharged from the emergency department. The most common reason for admission to the emergency department was falls (41.81 %) in the discharged patients. 518 (10 %) patients were hospitalized. Gender of these patients was 110 female (21.24%) and 408 male (78.76%). 256 patients (48.35%) were injured as a result of a traffic accident. 201 (38.8%) of the cerebral CT

were reported as normal and 89 (17.2%) of the cerebral CT were reported as traumatic subarachnoid hemorrhage (SAH) in hospitalized patients. The fracture of lumbar spine (12 %) was detected as an additional pathological disease in patients. 75 patients hospitalized because of head trauma (14.5%) had died (1.44 % of all patients). Cervical spine fracture was the most common (14 patients, 18.68 %) additional pathology in patients who died. Thoracic trauma was detected as the second most common (13 patients, 17.33 %) additional pathology.

Conclusion: Most of the patients admitted to the emergency department with head injury had a minor trauma. Patients can be discharged from the emergency department after a thorough physical examination and simple medical intervention. Most of the head injury patients admitted to hospital were male. The most common reason of the patients with head injury admitted to hospital was traffic accident. The most common finding of cerebral CT was SAH. Even though traffic accidents are the most common causes of death, gunshot wounds have higher death rate. This study will help emergency physicians to approach with head trauma patients and contribute to their clinical experiences. Our country-specific emergency trauma protocols can be created after more detailed studies.

Po-727

Front of the Auditorium poster area

ANALYSIS OF PEDIATRIC TRAUMA CASES ADMITTED TO THE EMERGENCY MEDICINE DEPARTMENT

Gokmen Tambay (1), Salim Satar (2), Nalan Kozaci (3), Ayca Acikalın (4), Mehmet Oguzhan Ay (2), Muge Gulen (2), Selen Acehan (2)

1. Emergency Medicine Service, Necip Fazıl State Hospital, Kahramanmaraş, Turkey
2. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
3. Emergency Department, Antalya Education and Research Hospital, Antalya, Turkey
4. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Pediatric trauma, emergency, demographics

Objective: The purpose of this study is to determine the prognosis of the demographic characteristics, etiology, morbidity and mortality rates of the pediatric trauma patients admitted to the emergency department of a training and research hospital.

Material and Methods: Pediatric patients who have been brought to the emergency department of a training and research hospital between 1st January- 31th December 2010 due to trauma have been included to this study. The demographic data of the patients, distribution by seasons and months, the etiologic factors that cause trauma, the way that patients have been admitted to the emergency department, conclusion figures of the patients in the

emergency department, and data of the units where patients have been hospitalized, treatments, average hospitalization time, conclusion figures of the clinics where they have been hospitalized have been analyzed statistically.

Results: Of the 18936 patients, 12096 boys and 6840 girls have been included to this study. The mean was as 8.11±5.19 in boys and 6.89±5.04 in girls. The most common age for trauma was 7-14 (36.15%) and it has been stated that the pediatric trauma cases have been mostly admitted in Spring and Summer months. Extremity injuries (42.40%) and falls (40.67%) were stated as the most etiologic causes. 815 of the patients have been hospitalized. 353 cases (43.31%) received surgical intervention while 462 (56.69%) cases received only medical treatment. The causes of death in pediatric trauma patients were: 10 (47.62%) due to traffic accidents, 5 (23.81%) due to falls, 5 (23.81%) due to burns and 1 (4.76%) due to drowning. It has been stated that 13 (61.90%) cases were male and 8 (38.10%) patients were girls of a total 21 cases resulting in death.

Conclusion: Most of the pediatric traumas occur due to falls or simple extremity injuries. Traumas are mostly seen between the 7-14 age range during the primary school period. The most common etiological factors in hospital admissions are falls. The most common etiological cause of death in pediatric trauma is traffic accidents. (JAEM 2013; 12: 8-12)

Po-728

Front of the Auditorium poster area

THE RELATIONSHIP BETWEEN MINOR HEAD TRAUMA AND POST-TRAUMATIC HEADACHE

Mediha Dogan (1), Ahmet Sebe (2), Mehmet Oguzhan Ay (3), Serenat Citilcioglu (4), Muge Elarslan Kara (5), Ufuk Saracoglu (6), Mehmet Canacankatan (7), Yagmur Topal (8)

1. Emergency Department, Ardahan State Hospital, Ardahan, Turkey
2. Emergency Department, Cukurova University, School of Medicine, Adana, Turkey
3. Emergency Department, Adana Numune Education and Research Hospital, Adana, Turkey
4. Emergency Department, Cukurova Dr. Askim Tufekci State Hospital, Adana, Turkey
5. Emergency Department, Hatay State Hospital, Hatay, Turkey
6. Emergency Department, Burdur State Hospital, Burdur, Turkey
7. Emergency Department, Tarsus State Hospital, Mersin, Turkey
8. Emergency Department, Osmaniye State Hospital, Osmaniye, Turkey

Corresponding author: droguzhan2006@mynet.com

Keywords: Minor head trauma, post-traumatic headaches, whiplash trauma

Aim: In this study, we aimed to investigate the relationship between minor head injury and post-traumatic headache (PTH) in patients admitted to the emergency department due to minor head trauma.

Material and Methods: Patients admitted to Emergency Medicine Department with minor head trauma between 01.01.2009 - 31.12.2010 were planned to be taken to this prospective study. Demographic characteristics, detailed risk factors, type of trauma, duration of amnesia, brief history of headaches, psychiatric diseases, history of drug use, findings of the physical and neurological examinations made after admission, before discharged and after 3 months, x-ray and CT findings of all patients with and without PTH were recorded in the standard data entry form. Patients with severe head injury, consciousness levels of stupor and coma, pregnancy, under the age of 18 were excluded. In this study, SPSS 17.0 software package was used for statistical analysis of all the data. The statistical significance level of all tests was $p < 0.05$.

Results: In our study, the most common reasons of minor head trauma were inside motor vehicle traffic accidents (36.1%) and outside motor vehicle traffic accidents (32.8%) in a total of 119 patients. PTH was detected in 87% of patients with isolated head trauma, 88.4% of patients with head + cervical trauma, 93.3% of patients with head + cervical + whiplash trauma. History of drug use related to psychiatric diseases ($p = 0.019$), post-traumatic photophobia ($p = 0.037$), vomiting ($p = 0.029$), dizziness ($p = 0.019$), sleep disturbance ($p = < 0.001$), depression ($p = 0.001$), decrease in sexual desire ($p = 0.038$), anxiety ($p = < 0.001$), outbursts of anger ($p = 0.002$) and post-traumatic alcohol consumption ($p = 0.042$) of the patients with and without PTH were compared and a statistically significant increases were determined. A statistically significant reduction in frequency and the duration of headache was detected after third month control examination of the 106 patients with PTH ($p = 0.02$).

Conclusion: History of psychiatric illness prior to the existence of minor head trauma increased the development of PTBA. Increased alcohol consumption and symptoms of post-traumatic syndrome were found to be more prevalent in patients with PTH.

Po-729

Front of the Auditorium poster area

DOES THE 'SEATBELT SIGN' PREDICT INTRA-ABDOMINAL INJURY AFTER MOTOR VEHICLE TRAUMA IN CHILDREN?

Charlotte Mackaij (1)

1. Emergency department, St. Antonius hospital, Nieuwegein, Netherlands

Corresponding author: c.mackaij@antoniuziekenhuis.nl

Keywords: abdominal injury, Seatbelt sign, motor vehicle trauma

Introduction

A 9-year-old boy presents to the Emergency Department (ED) following a motor vehicle collision. He was a restrained rear seated passenger involved in a head on crash at approximately 45 mph. His physical examination is unremarkable, except for the presence of bruising on the

lower abdomen in the distribution of his lap belt, consistent with a 'seat belt sign,' (SBS). The boy otherwise looks well. You wonder whether there is evidence to help you decide to discharge the patient, pursue additional imaging, or admit the child for observation/further intervention.

Three Part Question

In [children involved in motor vehicle trauma] is the [seat belt sign] predictive of [significant intra-abdominal injury]?

Literature Search

Ovid MEDLINE 1948 to November Week 2 2012

Embase via NHS Evidence 1980—date of searching 21 November 2012

The Cochrane Library November 2012

Medline:[exp abdominal injuries] AND [seat belt sign.mp]. Limit to English language and all child (0–18 years).

Embase: [exp abdominal injuries AND *SEATBELT/] OR [seat and belt and sign ti.ab.]

Cochrane: MeSH descriptor Seat Belts explode all trees.

Search Outcome

Fifty-one papers were identified of which three were relevant to the clinical question and of sufficient quality for inclusion

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Comments

With the introduction of seat belts in automobiles, passenger mortality in motor vehicle collisions has significantly decreased due to changes in injury patterns. The injury pattern noted with seatbelt use has been called the 'seat belt syndrome,' consisting of abdominal wall bruising (known as a 'seatbelt sign' or SBS), lumbar spine fractures, and intra abdominal injury. Intra abdominal injury can be difficult to diagnose upon initial presentation, and outcomes improve as injuries are identified earlier. The SBS is a frequent clinical finding in children after motor vehicle collision and the studies included in this analysis seek to establish the predictive value of the SBS in paediatric patients as a clinical indicator for further diagnostic evaluation. Two of the three studies compared patients with and without SBS, using those without as controls, and the third study involved only patients with SBS, dividing these patients between those who underwent operation, and those who did not.

Clinical Bottom Line

The seatbelt sign appears to be associated with an increased risk of intra-abdominal injuries, especially gastrointestinal and pancreatic injuries. Patients with SBS along with tachycardia, lumbar fracture, or free intra-abdominal fluid require continued close observation and may need operative intervention.

Po-730

Front of the Auditorium poster area

ROLL-OVER MOTOR VEHICLE COLLISION VICTIMS; ARE WE OBLIGED TO GET ALL THE TRAUMA SERIES IMAGING?

Siadat Elham (1), Hamed-basir Ghafouri (2), Babak Mahshidfar (3), Farhad Shokraneh (4), Mohammadreza Yasinzadeh (2), Hossein Zakeri (5)

1. Emergency Management Center, Health Deputy, Ministry of Health and Medical Education, Tehran, Iran, Islamic Republic of
2. Emergency Medicine, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of
3. Emergency Medicine, Rasul-Akram Hospital, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic of
4. Research Deputy, Kerman University of Medical Sciences, Kerman, Iran, Islamic Republic of
5. Emergency Medicine, Hasheminejad Hospital, Mashhad University of Medical Sciences, Mashhad, Iran, Islamic Republic of

Corresponding author: h-basirghafouri@tums.ac.ir

Keywords: Roll-Over, Trauma Series Imaging, Motor Vehicle

Purpose: Roll-over motor vehicle collision (R-OMVC) has been considered a significant mechanism of trauma for many years and trauma series imaging (TSI) including neck, chest, and pelvis X- rays has been recommended for all the victims survived in such events. This study tries to evaluate the necessity of getting TSI for all victims of R-OMVC, even if sign/ symptom free.

Methods: All trauma victims of R-OMVC referred to two academic level two trauma centers during defined one-year period were included in this prospective cross-sectional and observational study provided they were conscious and cooperative with stable vital signs. Patients were divided into two groups –positive and negative cases- according to the presence or absence of sign(s) and/ or symptom(s). TSI was ordered for all of the R-OMVC victims. Then, clinical and radiologic findings were entered in the data sheets.

Results: 143 patients entered our study; nine cases were excluded because of non- cooperation and missed data. Sixty-two (43.4%) patients were positive and 81 (56.6%) were negative. Three (4.8%) of 62 positive cases had positive findings in their cervical X- rays. Four (6.5%) of 62 positive cases had positive findings in their pelvic X- rays. Two (3.2%) of 62 positive cases had positive findings in their chest X- rays. None of the negative cases had any positive imaging.

Conclusions: This observational study showed that routine TSI has a low clinical value for the victims of R-OMVC with no positive findings in their clinical assessment.

Po-731

Front of the Auditorium poster area

ANALYSIS OF ACCIDENTAL FALLS INJURIES IN PRESCHOOL AGE

Heejun Shin (1), Woochan Jeon (1), Hyunjong Kim (1), Kyung Hwan Kim (1), Junseok Park (1), Dongwun Shin (1)

1. Emergency department, Inje University Ilsan Paik Hospital, Goyang, Korea, (South) Republic of

Corresponding author: iamrocker@hanmail.net

Keywords: Accidental Falls, Bone Fractures, Traumatic Brain Injury

Original article

ABSTRACT

Objective

Accidental falls in preschool age group is one of the most common causes of pediatric injury mechanism. This study aimed to compare environmental and patient factors resulting bone fractures or traumatic brain injury (TBI) in preschool aged accidental falls patients under 7 years old.

Methods

We reviewed accidental falls patients under 7 years old who visited one regional trauma center from January 1. 2010 to December 31. 2011 by using the emergency room based injury surveillance information data which were governed by Korea Centers for Disease Control and Prevention.

We supposed that severe fall injuries were presence of bone fracture or TBI confirmed as skull fracture or cerebral hemorrhage. We retrospectively reviewed age, sex, weight, fall height, floor characteristics (soft and hard floor), guardian witness, injury sites and diagnosis from medical records.

We compared the factors resulting bone fracture and TBI by using binary logistic regression analysis.

Results

We reviewed 647 patients. The mean age was 2.22 ± 1.91 years (mean \pm SD) and male were dominant (n=371, 57.3 %). Mean fall height was 0.89 ± 0.59 meter (mean \pm SD) and mean body weight was 13.72 ± 5.00 kilogram (mean \pm SD). Five hundred eighty nine patients (91%) fell down to the hard floor. Four hundred forty six patients (68.9%) were witnessed by guardians. The head (n=495, 76.5%) and upper extremity (n=130, 20.1%) injuries were frequent. Otherwise, Trunk (n=24, 3.7%) and lower extremity (n=21, 3.2%) injuries were rare.

There were statistically significant correlations of fall height, age, floor characteristics with fractures. The mean fall height resulting fractures and no fracture were 1.16 ± 0.98 and 0.80 ± 0.33 meter (mean \pm SD, $P < 0.05$), respectively. The mean ages of patients with and without fracture were 2.86 ± 1.99 and 2.01 ± 1.83 years (mean \pm SD, $P < 0.05$), respectively. Depending on the soft and hard floor of injured place, patients with fracture were 48.2% (27/56) and 23.3% (137/539), respectively ($P < 0.05$).

Fall height, age, guardian witness were correlated with TBI of statistical value. The mean fall height resulting TBI and no TBI were 1.14 ± 0.75 and 0.87 ± 0.56 meter (mean \pm SD, $P < 0.05$), respectively. The mean ages of patients with TBI and without TBI were 1.32 ± 1.69 and 2.30 ± 1.90 years

(mean \pm SD, $P < 0.05$), respectively. Depending on the presence and absence of the guardian witness, patients with TBI were 9.2% (41/446) and 3.8 % (6/158), respectively ($P < 0.05$).

The odds ratios of fall height, age and soft floor resulting fracture were 3.57(95%CI, 2.24-5.70, $p < 0.05$), 1.17(95%CI, 1.05-1.29, $p < 0.05$) and 1.42(95%CI, 0.75-2.70, $p=0.27$), respectively. The odds ratios of fall height, age and presence of guardian witness resulting TBI were 1.98(95%CI, 1.37-2.88, $p < 0.05$), 0.66(95%CI, 0.52 - 0.83, $p < 0.05$) and 2.36(95%CI, 0.90 – 6.20, $p = 0.08$), respectively.

Conclusions
In preschool aged accidental falls injuries, the fall height was the most significant factor resulting bone fracture and TBI. Fracture incidence by fall down injuries increased with aging. On the other hands, TBI incidence decreased with aging. Floor characteristics and witness of guardians were not significant factors resulting fracture and TBI.

Po-732

Front of the Auditorium poster area

PATTERN AND SEVERITY OF HORSERELATED INJURIES PRESENTING TO EMERGENCY DEPARTMENT

Seung Wook Lim (1), Seung Min Park (1)

1. Emergency department, Hallym University Medical Center, Anyangsi, Korea, (South) Republic of

Corresponding author: aukawa1@naver.com

Keywords: Horses, Horseracing, New Injury Severity Score

Background: Horse racing related injuries have not been studied well before in Korea, although horse racing takes place very regularly in the territory. The injury rate is understandably high due to the weight of the horses and the speed they can achieve. Mainly we encountered professional injuries from local Horse Riding Park. The purpose of this study is to identify the incidence and injury patterns, as well as risk factors associated with severe equestrian trauma.

Methods: All patients with equestrian injuries who visited Emergency department between June 2007 and May 2011 were reviewed. We retrospectively reviewed their medical records and collected the data about demography, mechanism and pattern of injury, and final diagnoses. We calculated the New Injury Severity Score(NISS) of patients and divided them into two groups as minor trauma (NISS<9) vs. moderate to severe trauma (NISS \geq 9).

Result: During the study period, 288 patients were presented to ED with horse related injury. 8 patients were excluded from the study for transferred out. The median age was 33 (13~60). The most common cause of the injury was fall (168, 60.0%). The most common region of the injury was face (123, 43.9%). The intermediate value of NISS was 3 (1~75). And the patients who were diagnosed as moderate to severe injury were 32 (11.4%). Thoracic injuries were less occurred with fall, and abdominal & pelvic

injuries were significantly much less occurred with clash. When thoracic injuries were accompanied with other part injury, moderate to severe injury was significantly frequent.

Conclusion:

In horse related injury, the most common region of the injury was face. And when thoracic injury was accompanied, severity of damage tended to significantly high. Horse racing is much more violent than general horse riding. So jockeys who participate in horse racing should take additional protective equipments other than a helmet and boots.

Po-733

Front of the Auditorium poster area

SALT OR SUGAR FOR YOUR INJURED BRAIN? A META-ANALYSIS OF RANDOMISED CONTROLLED TRIALS OF MANNITOL VERSUS HYPERTONIC SODIUM SOLUTIONS TO MANAGE RAISED INTRACRANIAL PRESSURE IN TRAUMATIC BRAIN INJURY.

Annette Rickard (1), Jason Smith (1,2), Paul Newell (3), Andrew Bailey (3), Anthony Kehoe (1), Clifford Mann (4)

1. Emergency Department, Derriford Hospital, Plymouth, United Kingdom

2. Academic Department of Military Emergency Medicine, Royal Centre for Defence Medicine (Research and Academia), Medical Directorate, Joint Medical Command, Birmingham, United Kingdom

3. Centre for Health and Environmental Statistics, University of Plymouth, Plymouth, United Kingdom

4. Emergency Department, Musgrove Park Hospital, Taunton, United Kingdom

Corresponding author: annette.rickard@nhs.net

Keywords: traumatic brain injury, hypertonic sodium, mannitol

Background: Rising intracranial pressure (ICP) is a poor prognostic indicator in traumatic brain injury (TBI). Both mannitol and hypertonic sodium solutions are currently used to treat elevated ICP in patients with TBI.

Objective: This meta-analysis compares the utility of mannitol versus hypertonic sodium solutions with respect to ICP control in patients with TBI.

Data sources and study eligibility: Randomised clinical trials in adults with traumatic brain injury and evidence of raised ICP, which compare the effect on ICP of hypertonic sodium solutions and mannitol.

Methods: The primary outcome measure is the pooled mean reduction in ICP. Studies were combined using a Forest plot.

Results: Six studies were included, comprising 171 patients (599 episodes of raised ICP). The weighted mean difference in ICP reduction, using hypertonic sodium solutions compared to mannitol, was 1.39 mmHg (95% CI: -0.74 to 3.53).

Limitations: Methodological differences between studies limit the conclusions of this meta-analysis.

Conclusion: The evidence demonstrates that both agents effectively lower ICP, and there is a trend favouring the use of hypertonic solutions in patients with TBI.

Po-734

Front of the Auditorium poster area

ADULT SPINAL CORD INJURY WITHOUT RADIOLOGICAL ABNORMALITY (SCIWORA): A CASE REPORT.

Karolina Borsukiewicz (1), Mark De Vries (2), Machteld Ibelings (1), Aerden Leo (3), Dafne Van Rijssel (1)

1. Emergency department, Reinier de Graaf Hospital, Delft, Netherlands

2. Traumatology department, Reinier de Graaf Hospital, Delft, Netherlands

3. Neurology department, Reinier de Graaf Hospital, Delft, Netherlands

Corresponding author: karolabo@hotmail.com

Keywords: Traumatology, Sciwora, Emergency medicine department

Case presentation:

Spinal cord injury without radiographic abnormalities (SCIWORAs) is defined as objective signs and symptoms of myelopathy with normal plain radiographs and computed tomographic (CT) studies. SCIWORA is rare in adults. We present a case of a 88 year old man who fell from bicycle. On arrival at Emergency Department, he was found to be truly conscious with some face abrasion. He was hemodynamic stable. He did not complain of neck pain, but was unable to rise both arms and move both legs.

At the body examination he had no tenderness over the mid-cervical spine. Initial neurological examination revealed bilateral reduction in sensation below the clinical level of C4. The power tested using the Medical Research Council (MRC) scale showed grade 3 in both arms and legs. The tone was normal in all four limbs. He also suffered priapism, decreased anal tone and lost bladder control.

Radiographs of the cervical, thoracic and lumbar spine showed besides of degenerative changes, no soft tissue swelling or fractures. Subsequent computed tomography also demonstrated no fracture. The computed tomography of the face showed fracture of the right orbital floor and medial wall of maxillary sinus. Magnetic resonance imaging was performed on the following day. It demonstrated spinal cord oedema at the level of C5-C6.

24 hours after admission, neurological examination revealed worsening of reduced power in all four extremities. The operative treatment was advised and the patient underwent decompression of the spinal cord.

Discussion:

Adult SCIWORA is a rare phenomenon and not much is known about its exact pathophysiology. Normal plain

radiographs of the cervical spine do not exclude neurological damage in the presence of an abnormal neurological examination. We propose that bicycle accident at this patient caused severe flexion of the head caused SCIWORA at the level of C5-6. The high index of suspicion is necessary in injured patients in whom movement of all limbs is disturbed. The presence of constitutional narrowing of the spinal cord would be seen to predispose to lesion of the cord with compression-flexion type of injury.

Po-735

Front of the Auditorium poster area

AN EXPERIMENTAL COMPARATIVE STUDY ON CLASSIC TUBE THORACOSTOMY AND THORACOSTOMY WITH A NEWLY DESIGNED THORAX DRAINAGE CATHETER

Mahmut Tokur (1), Mehmet Ergin (2), Mehmet Okumus (3), Yasemin Durduran (4)

1. Thoracic Surgery, Sutcu Imam University Medicine School, Kahramanmaraş, Turkey

2. Emergency Department, NEU Meram Medicine School, Konya, Turkey

3. Emergency Department, Sutcu Imam University Medicine School, Kahramanmaraş, Turkey

4. Public Health Department, NEU Meram Medicine School, Konya, Turkey

Corresponding author: drmehmetergin@gmail.com

Keywords: Trauma, Penetrating, Thorax drainage

Study Objectives: The collection of fluids, blood, suppuration, or air in the pleural cavity is a pathological condition that may require pleural drainage. Thoracentesis, tube thoracostomy, and placement of other thoracic catheters are some of the methods used for this purpose. The thorax drainage catheter is a new design in the prototype phase. This experimental study was performed to test the efficacy of the thorax drainage catheter. Methods: In the study, a hemopneumothorax was first caused by a penetrating injury on the frontal axis of the sixth intercostal space on the right hemithorax with a scalpel (20 cm long) on six 1-year-old female 'suis domesticus' swine subjects, each weighing 55 to 60 kg. Subsequent to the penetrating injury, the subjects were allowed to rest for 5 minutes, and then tube or catheter was inserted. Upon completion of the procedure on the right hemithorax, the same procedure was repeated on the left hemithorax, and a tube thoracostomy or thorax drainage catheter was inserted. The time periods between interventions were recorded. After the procedures, both chest cavities of the subjects were opened by transverse thoracostomy, and their thoracic organs were assessed for the presence of iatrogenic injuries. Results: In terms of time elapsed for invasive procedure, a statistically significant difference between the tube thoracostomy and thorax drainage catheter applications were identified ($p < 0.05$). For the thorax drainage catheter procedures on the right and left hemithoraxes, a statistically insignificant difference was

identified for the length of time ($p>0.05$). Additional iatrogenic injuries were nonexistent for both groups. During the thorax drainage catheter application, a surgical set or use of suture was not required. Conclusion: In this study to determine the efficacy of the thorax drainage catheter, which has been developed for convenient use in pre-hospital and hospital settings by physicians with little experience with tube thoracostomy, promising results were obtained.

Po-736

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ANALYSIS OF CARDIAC AND PULMONARY INJURIES RESULTING FROM AN EXPERIMENTAL PENETRATING THORACIC INJURY

Mahmut Tokur (1), Mehmet Ergin (2), Mehmet Okumus (3)

1. Thoracic Surgery, Sutcu Imam University Medicine School, Kahramanmaras, Turkey

2. Emergency Department, NEU Meram Medicine School, Konya, Turkey

3. Emergency Department, Sutcu Imam University Medicine School, Kahramanmaras, Turkey

Corresponding author: drmehmetergin@gmail.com

Keywords: Trauma, Penetrating, Myocardial injury

Background: The study was planned to analyze the internal and external anatomical findings of cardiac injuries and the presence of accompanying pulmonary injuries in intentionally inflicted thoracic injuries to swine models. Methods: We inflicted a penetrating heart injury in six Suis domesticus female swine models. Two cardiac injuries, one on the left paratracheal of 4th intercostal space and the other on the right side were inflicted on each model by the same researcher using a 20 cm long scalpel. All animals were then sacrificed for morphological evaluation. Results: After strikes to the left 4th intercostal space, external evaluation showed that 50% of the subjects suffered a single laceration and that 33% suffered multiple lacerations. Internal evaluation showed additional intracardiac injuries in all five subjects. However, the subject that suffered a single laceration on the outer surface of the heart had multiple internal injuries while another subject that had multiple outer lacerations had only one intracardiac injury. Only three subjects suffered cardiac injuries and only two out of those three with pulmonary injuries after right 4th intercostal intrusions. Conclusions: This experiment has shown that external evaluation of the heart tissue may not alone be sufficient to determine the extent of cardiac injuries and accompanying pulmonary injuries caused by penetrating thoracic injuries.

Po-737

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A PILOT EXPERIMENTAL STUDY FOR A CATHETER DESIGNED TO FACILITATE TREATMENT FOR PENETRATING CARDIAC INJURY

Mahmut Tokur (1), Mehmet Ergin (2), Mehmet Okumus (3)

1. Thoracic Surgery, Sutcu Imam University Medicine School, Kahramanmaras, Turkey

2. Emergency Department, NEU Meram Medicine School, Konya, Turkey

3. Emergency Department, Sutcu Imam University Medicine School, Kahramanmaras, Turkey

Corresponding author: drmehmetergin@gmail.com

Keywords: Trauma, Penetrating, Myocardial injury

Penetrating cardiac injuries generally occur as a result of penetration with sharp objects or gunshots, and rarely by penetration of fractures of sternum or ribs. The degree of cardiac injuries may vary from myocardium injuries to full layer pericardium penetration. Although they are observed less than other penetrating traumas, they result in high mortality. Clinical findings may also vary situations with stable vital signs to cardiopulmonary arrest. This variability depends on injury type, time between injury and arrival to trauma center, amount of intravascular volume loss, and presence of cardiac tamponade.

We designed a new catheter to facilitate treatment of penetrating cardiac injuries, provide a more effective initial bleeding control and fluid replacement, and allow more time when extracorporeal circulation is needed. This catheter is basically a product similar to foley drainage, yet has not been produced routinely. The national patent application for our design has already been accepted.

Parts of the Catheter: The catheter is composed of basically a body and two end sections. The body of the catheter includes two channels one within the other. One of these channels ends with a balloon and the other with a hole distally. While inflating the balloon via one of these channels, fluid or blood can be inserted through the other. Valve with a non-return mechanism exist at the proximal endings of both channel. The lid sliding bidirectionally is located on the body of the catheter behind the balloon. Further back, a clip behind the lid that serves to secure (lock) the lid is placed.

There is a protective layer around balloon on the distal end. This layer is hard enough that a needle cannot tear balloon even if the needle is stuck in the inflated balloon during suturing.

How to Use the Catheter:

1. After locating the rupture in the heart, the finger is inserted.
2. The front part of the catheter is placed in a cardiac or venous access beside the finger through the rupture.
3. The balloon is inflated in a way to cover the rupture and is secured permanently and tightly by pulling it outwards.
4. After placing the exterior lid on the outer surface of the rupture, the cardiac muscle is pressed between the balloon and the lid through the clip secured. In this way, bleeding in the rupture area can be stopped. Following the initial

bleeding control, either rupture repair or extracorporeal circulation may be performed.

5.If needed, a direct fluid and blood replacement can be done through the other channel of the balloon.

6.The catheter can also be used similarly in vascular injuries.

Po-738

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HAEMOSTATIC EFFICACY OF ANKAFERD BLOOD STOPPER IN A RAT TAIL CUT-BLEEDING MODEL

Ozgur Sogut (1), Mehmet Boleken (2), Rustu Kose (3), Abdullah Ozgonul (4), Halil Kaya (5), Mehmet Gokdemir (5), Ismail lynen (6), Levent Albayrak (7), Dokuzoglu Mehmet (7)

1. Department of Emergency, Bezmialem Vakif University, Istanbul, Turkey

2. Paediatric Surgery, Harran University, Sanliurfa, Turkey

3. Plastic and Reconstructive Surgery, Harran University, Rize, Turkey

4. General Surgery, Harran University, Sanliurfa, Turkey

5. Emergency Medicine, University of Harran, Sanliurfa, Turkey

6. Otorhinolaryngology Department, Harran University, Sanliurfa, Turkey

7. Emergency department, Harran University, Sanliurfa, Turkey

Corresponding author: drosogut@harran.edu.tr

Keywords: tail-cut bleeding, Ankaferd Blood Stopper, haemostasis

Objective: To assess the in-vivo haemostatic effect of Ankaferd Blood Stopper (ABS).

Study Design: An experimental study on animals using a tail-cut bleeding model.

Subjects and Methods: Wistar rats were randomized into four groups of seven each: group 1, control, no pretreatment, irrigated with saline; group 2, no pretreatment, irrigated with ABS; group 3, control, heparin pretreatment, irrigated with saline; and group 4, heparin pretreatment, irrigated with ABS. In all groups, a standardized rat bleeding model was obtained by tail-cutting. To control bleeding, compressive dressings were placed after instilling 1 ml of either ABS or saline to the bleeding area. The haemostasis time and amount of tail-cut bleeding were measured in all groups to compare the treatments without and with ABS.

Results: Without heparin pretreatment, ABS shortened the haemostasis time by 1.57 min ($P = 0.001$) and reduced the amount of the bleeding by 0.85 g ($P = 0.006$). With heparin pretreatment, ABS shortened the haemostasis time by 3.29 min ($P = 0.004$). and reduced the amount of the bleeding by 1.32 g ($P = 0.018$).

Conclusion: ABS irrigation was more effective than saline irrigation for treating tail-cut bleeding haemostasis in animals using a compressive dressing with or without heparin pretreatment.

Po-739

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RESULTS OF ONE MONTH OF TREATMENT IN PATIENTS WITH TRAUMATIC BRAIN INJURY ADMITTED TO THE SINA HOSPITAL DURING 2012 TO 2013

Fatemeh Hosseini kasnavieh (1), Mohammad Hosseini kasnavieh (2), Amir Molaeifar (3), Nader Tavakoli (4), , Hamed Basir ghafouri (5), Niloofar Abazarian (6), behnam movahedi (7)

1. Psychiatry, Yazd/Shahid Sadoughi of Medical Sciences, Yazd, Iran, Islamic Republic of

2. Emergency departman, IUMS, Tehran, Iran, Islamic Republic of

3. Emergency departman, IUMS, Tehran, Iran, Islamic Republic of

4. Emergency departman, IUMS, Tehran, Iran, Islamic Republic of

5. Emergency departman, IUMS, tehran, Iran, Islamic Republic of

6. Emergency department, TUMS, tehran, Iran, Islamic Republic of

9. emergency department, IUMS, tehran, Iran, Islamic Republic of

Corresponding author: mhoseini1346@gmail.com

Keywords: Traumatic brain injury, traumatic brain injury, mild traumatic depression

Tiety: Results of one month of treatment in patients with traumatic brain injury admitted to the Sina hospital during 2012 to 2013

Introduction: The aim of this study was to evaluate patients with traumatic brain injury and post-traumatic complications in these patients

Materials and Methods:the first systematic entry software information of patients was launched. The check list with information on traumatic brain injury patients who are undergoing surgery were recorded. All patients with mild traumatic brain injuries in the period 2012-2013 with mild traumatic brain injury in the emergency department of Sina hospital at least 24 hours of supervised hospital and underwent surgery at Sinai Hospital were enrolled. One month after surgery, the patients through clinical examination about complications .In this prospective study, all patients in the period 2012-2013 Patient information including disaster types, symptoms and clinical examination findings were recorded and patients were treated for one month after discharge, the patient's symptoms, complications and alert trauma patients were evaluated and recorded

Results of the study of brain trauma cases admitted to hospital in the years 20012 to 2013, 105 patients were studied, most of whom were male and their average age was 36 years. Accidents were the most common mechanism of injury in trauma patients comprised 59% of the total.

The most common symptoms in our study, headache, vomiting and post-traumatic amnesia were also examined Raccoon eye symptoms in 27% of patients with fracture and damage organs and other body parts were found in 20% of patients. After a one-month follow-up of patients, most

commonly observed symptoms, headache and dizziness after it was Agitation.

Also, depression was seen in 14% of patients. The maximum depression was observed in patients who had a motorcycle accident. ICH and SAH and brain contusion as having Raccoon eye was affected in depression. Also, the severity of trauma patients was associated with depression. Conclusion: This study shows that mild traumatic brain injury is the most common and the most common mechanism of injury in an accident with a motorcycle. Kantvzhn factors such as brain, ICH and SAH, and also effective in patients with depression are at Raccoon eye.

Keywords: Traumatic brain injury, traumatic brain injury, mild traumatic depression.

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SNOW AND ICE RELATED FRACTURES IN THE NETHERLANDS

Cl Van Den Brand (1), N Van Der Linden (2), Mc Van Der Linden (3)

1. Emergency Department, MCHaaglanden, Den Haag, Netherlands
2. Institute for Medical Technology Assessment, Erasmus Universiteit, Rotterdam, Netherlands
3. Emergency department, MCHaaglanden, Den Haag, Netherlands

Corresponding author: drcrispijn@hotmail.com

Keywords: Snow and ice, Trauma, Fractures

Objectives

To assess the effect of a 10-day snow- and ice period on the number of fractures in the Emergency Department (ED). Furthermore, we assessed some epidemiological factors connected with fractures incurred during a snow- and ice period and during a control period. Our hypothesis was that the number of fractures sustained would increase during a period of snow- and ice as compared with the control period.

Methods

Fracture incidence during a 10-day study period with snow and ice (January 14, 2013 until January 23, 2013) was compared to a similar 10-day control period without snow or ice (January 16, 2012 until January 25, 2012). The records of all patients with a fracture were manually selected. Besides this, basic demographics, type of fracture and location of the accident (inside or outside) were compared.

Results

A total of 1,785 patients visited the ED during the study period and 1,974 during the control period. A fracture was found in 224 patients (12.5%) during the study period and in 109 patients (5.5%) during the control period ($P < 0,001$). No differences were found in gender, mean age, length of stay and disposition. However, during the study period the percentage of fractures in the 31-60yrs age group was significantly higher than in the control period ($P < 0,001$).

Conclusions

The number of fractures sustained more than doubled during a period with snow and ice as compared to the control period. In contrast to other studies outside the Netherlands, not the elderly, but the middle aged were most affected by the slippery conditions. The expected high extra direct and indirect health care costs would make a cost-benefit evaluation for more preventive measures very interesting.

Po-741

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MANAGEMENT OF CHILDREN WITH MINOR HEAD INJURY IN A JAPANESE TERTIARY CARE EMERGENCY DEPARTMENT—THE EFFICACY OF ADAPTED PECARN RULE FOR MINOR HEAD INJURY

Sera Makoto, Shigenobu Maeda, Takashi Matsumoto, Kenichi Kano, Katsuki Matsumiya, Kiwamu Murakami, Masafumi Tada, Mariko Nagoya, Hidetomo Yamada, Takahiro Wakita, Masayuki Oda, Hiroyuki Azuma, Yumi Mizuno, Masahiro Yotsumoto, Atsushi Yamamoto, Hideya Naga

Emergency department, Fukui Prefectural Hospital, FUKUI, Japan

Corresponding author: pxt01173@nifty.ne.jp

Keywords: minor head injury,, head CT scan, PECARN rule

Background: Traumatic brain injury is the leading cause of death and disability among children worldwide. In the United States, head trauma in individuals aged 18 years and younger has resulted in about 7,000 deaths, over 60,000 hospital admissions, and more than 600,000 emergency department (ED) visits every year. Children with clinically important traumatic brain injury (ciTBI) need emergent intervention, but many children with head trauma have minor head injuries and the majority of traumatic brain injuries identified on CT scans do not warrant acute intervention. The management of these children has long presented a common dilemma for emergency physicians due to the challenging task of correctly assessing the need for head CT to identify ciTBI, while minimizing risks associated with radiation exposure and sedation, length of stay in ED, and unnecessary medical expenditure. PECARN rule, which was developed in 2009, revolutionized the management of pediatric patients with minor head injury. We describe the implementation of an adapted version of this rule in a Japanese tertiary care ED and how it changed the patient outcomes as it gained more widespread recognition among ED physicians.

Methods: We retrospectively analyzed data on patients younger than 18 years old with minor head injury who visited FPH ED from January 2010 to December 2011. Data in the first year was then compared with those in the second year. All data were collected from the hospital's electronic medical records.

Results: Data on 976 (531 in 2010 and 445 in 2011) children were analyzed. The number of CT scans obtained reduced

from 310 (58.4%) in 2010 to 98 (22.0%) in 2011. Traumatic brain injury was found on CT scan in 18 (5.8%) patients in 2010 and 6 (6.1%) in 2011. The number of ciTBI was 9 (1.7%) in 2010 and 5 (1.1%) in 2011. The number of patients requiring hospital admission for the traumatic brain injury was 14 (2.6%) in 2010 and 10 (2.2%) in 2011. There was no death from traumatic brain injury and only 1 patient (0.2%, in 2011) underwent neurosurgical intervention throughout the study period.

Conclusions:

Implementation of adapted PECARN rule resulted in reduced number of head CT without changing patient outcomes. In many Japanese hospitals, including ours, doctors-in-training (interns or residents) often see patients first and assess the need for further investigation, including imaging. Widespread recognition of this evidence-based tool among those novice physicians seems to have played a key role in reducing unnecessary exposure to radiation in our hospital. Although retrospective, our study suggests a strong impact of evidence-based education for novice trainees on improving the quality of patient care in acute care settings.

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THE PREDICTIVE VALUE OF INITIAL ARTERIAL LACTATE LEVELS OF MORBIDITY AND MORTALITY ON PEDIATRIC HEAD TRAUMAS

Sabiha Sahin (1)

1. Pediatric Emergency Department, ESOGUMF, Eskisehir, Turkey

Corresponding author: sabiha.sahin@mynet.com

Keywords: head trauma, lactate, children

Background: The majority of pediatric trauma patients are head traumas. CT (Cranial Tomography) imaging is often controversial. The aim of this study to investigate the effects of post-head traumatic initial arterial lactate levels on mortality and morbidity and the relationship between GCS (Glasgow Coma Scale) and positive CT findings.

Material and Methods : Between 1 January-31 December 2011, one hundred children between the ages one month -17 years old with isolated head trauma were included in this study and performed by prospective.

Results : The lactate levels of patients with positive CT findings (hematoma, fractures) (3.944 ± 1.650) was significantly higher than lactate levels of the patients with negative CT finding (1.578 ± 0.842) ($p < 0,01$). The initial lactate levels in patients with neurological sequelae which detected on long-term follow-up clinical observation (4.385 ± 1.672), was significantly higher than recovered without sequelae (1.750 ± 0.880) ($p < 0,01$). Lactate levels in patient who died (5.608 ± 1.261), was significantly higher than living in the cases (2.359 ± 1.502) ($p < 0,01$). There was

a significant positive correlation between initial lactate levels and GCS.

Conclusion: All these data suggest that the levels of lactate in the early period after head trauma has importance predictive value for morbidity and mortality of head traumas in children.

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INJURIES CAPTIVE BOLT. APROPOS OF A CASE.

Patricia Giraldez Martinez (1), Maria Teresa Lopez Monteagudo (1), Jose Ramon Parada Castellano (1), Maria Del Pilar Pavon Prieto (1), Montserrat Rubio Francos (1)

1. SERVICIO DE URGENCIAS, Hospital Montecelo. Complejo Hospitalario de Pontevedra, PONTEVEDRA, Spain

Corresponding author: terelopez78@gmail.com

Keywords: guns bullet or captive bolt, craniocerebral trauma, computer tomography

Guns bullet or captive bolt is the method of choice for animal slaughter whenever their live weight is 8 kilos or more. When used correctly, it causes immediate unconsciousness followed by death, which humanizes the slaughtering process. In some countries, among them Spain, a license is not required for the use of these guns. They are very common and easy to get among veterenararies, slaughter houses and people working with cattle, and their use as a suicidal weapon is rare. Since only people from these circles have access and knowledge about them and the amount of cases with these weapons on humans is scarce, we consider this case which took place in our ER to be significant enough to be exposed.

71 year old male, lives in the countryside, is hospitalized with urgent nature after being found unconscious in his house with a wound on the right medial temporal lobe. From his background we should remark depressive syndrome under treatment with escitalopram and alprazolam. In the exploration, a score of 8 on the Glasgow(GCS) scale was present and a 1 cm diameter circular wound on the right medial temporal lobe. After being sedated and relaxed with midazolam and vecuronium a tracheal intubation was performed along with a cranial computed tomography exam(CT), where a blowout fracture of the right temporal bone became apparent, with presence of intraparenchymal bone fragments on the deep temporalis fascia adjacent to the greater wing of the sphenoid bone and sella turcica, with an extense intraparenchymal hemorrhage in conjunction with pneumocephalus and subarachnoid hemorrhage with no evidence of projectile nor an output wound. After these findings, the radiological tests suggest a wound by captive bullet weapon, which leads to a second interrogation where the family admits to be in possession of such weapon. Immediately the patient undergoes urgent

surgery where a right parieto-temporal craniotomy,esquilectomy, hemostasis of the temporal laceration and dural reconstruction with biological plasty and placement of n intracranial pressure sensor were performed (ICP). Furthermore, an antibiotic treatment is started with piperacillin/Tz, toxoid and anti-tetanus gamma globulin and anticomicial prophylaxis with phenytoin. After 40 days in the Intensive Care Unit the patient requires a second surgery where the craniotomy is closed; evolving favourably of neurological damage the patient leaves the Intensive Care Unit, confirming himself the suicide attempt. At the time the patient is discharged he presents paralysis of the rectus muscle on the left eye, right palpebral ptosis and brachial predominantly left hemiparesis, GOS 3. Guns bullet or captive bolt weapons consist on a cylindrical tube with a metal stud at its center, which is projected thanks to the burst of the gunpowder or compressed air cartridge which is ejected by the action of a spring. Wounds from these types of weapons differ from those caused by firearms, with the presence of a characteristic circular skin lesion and underlying bone with a diameter similar to the striker pin. However, the internal damage is much greater since the dispersed bone fragments act as secondary projectiles along the firing channel. Where skin, hair and bone fragments are always found at the end of the firing channel. Foreign matter or metal pieces are never found on the wound, and the lack of an output bullet hole help us differ these wounds from those caused by firearms. If the weapon is shot from a distance of 10 cm or more, it is hard that it causes significant damage, which might explain the low rate of homicides or suicides related to these types of wepons. The prognosis on these types of penetrating wounds depends on several factors, considering a bad prognosis a low scale a low scale on the Glasgow scale at the time the patient entred the hospital, high intrachraneal pressure, intraventricular or subarachnoid hemorraghe hematoma greater than 15 ml, with mass effect and deviation of the midline of the brain. Injuries related to captive bolt weapons are rare in our area, being ussually accidental damage and even less common to homicides or suicides.

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TRAUMA TEAM ACTIVATION BETWEEN THE HOURS OF MIDNIGHT AND 8 IN THE MORNING: A SINGLE CENTRE EXPERIENCE

Abdo Sattout (1), James Chapman (2), Michael Hickey (1), John Hollingsworth (1)

1. Department of Emergency Medicine, Aintree University Hospital, Liverpool, United Kingdom

2. School of Medicine, University of Liverpool, Liverpool, United Kingdom

Corresponding author: abdo.sattout@aintree.nhs.uk

Keywords: Trauma, Trauma Team Activation, Emergency Department (ED) Attendances

Introduction

Major trauma care in England has undergone significant restructuring since 2009 with the establishment of regional Trauma Centres and Units. As of June 2012, our Emergency Department (ED) became a Major Trauma Centre as part of the Merseyside and Cheshire Trauma Collaborative in the North West region of England. Hence, a dedicated 24-hour Trauma Team was established, incorporating several specialties and led by the ED trauma physicians.

Method

We conducted a retrospective observational study of all trauma patients who attended the ED and initiated a Trauma Team activation between the hours of midnight and 8 in the morning. Age groups, type of injuries as well as contributing factors were also reviewed. The period covered the months of June until December 2012, and data was obtained from the ED Trauma Audit and Research Network (TARN) records.

Results

A total of 251 trauma patients attended the ED over the 6 month period of June until December 2012. Following medical records analysis, 68 patients (27%) were identified between the hours of midnight (00:00) and 08:00 of the morning: 58 males (85%) and 10 females (15%). Ages ranged from 15 to 87 years (median 34 years), with a predominance in the 20-30 years age group (23 patients, 34%).

The time of the majority of trauma attendances were between the hours of 00:00 and 03:00, and it comprised 39 patients (57%). Otherwise, there was almost hourly equal distribution of trauma attendances between the hours of 03:00 and 08:00 to the ED.

The trauma attendances to the ED were almost evenly spread (41 patient, 60%) throughout the week days, with a marked increase noted at the weekends (27 patients, 40%). Interestingly, there was only 3 (4%) trauma attendances on Wednesdays.

Several contributing factors were implicated with the traumas. Alcohol use was the most predominant and documented in 25 patients (38%), alcohol and drugs in 4 (6%), drugs alone in 1 (1%) and no substance misuse in 31 (45%).

The injuries varied as result of falls (either from height or stairs) in 30 patients (44%), road traffic accidents 15 (22%), stabbings 10 (14%), shootings 2 (3%), assaults 5 (7%), hanging 2 (3%), burns 1 (1%) and head injuries from other causes than above 3 (4%).

Discussion

Most of our results are in-keeping with the data published by the UK National Audit Office in 2010. It shows similar trend of attendances during the weekends and the predominance of the 20-30 years age group.

On the other hand, it highlights a surge in traumatic injuries secondary to falls (either from heights or stairs) compared to the usual road traffic accidents; these traumas are mostly fuelled by alcohol consumption. As mentioned in our results, 57% of attendances were between the hours of 00:00 and 03:00 and it can be presumed to coincide around the time when most people leave night venues such as bars or clubs, and return home.

Finally, we can conclude that all supporting resources for a Trauma Team must remain fully provided, particularly between the crucial hours of 00:00 and 03:00.

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ARE SERIOUS KNIFE INJURIES STILL BEING UNDER ESTIMATED? A CROSS SECTIONAL SURVEY OF PENETRATING TRAUMA AT A LONDON MAJOR TRAUMA CENTRE.

Ed Glucksman (1), Jeff Keep (1), Carole Olding (1), James Pallett (1), Malcolm Tunnicliff (1)

1. Emergency Medicine, King's College Hospital NHS Foundation Trust, London, United Kingdom

Corresponding author: jamesrpallett@hotmail.com

Keywords: Trauma, Violence, Epidemiology

Objectives: King's College Hospital NHS Foundation Trust is the Major Trauma Centre for the South East London Trauma Network. A high prevalence of intentional penetrating major trauma has been observed in the local population. However, few epidemiological studies have accurately quantified the burden on the trauma system.

Methods: A retrospective observational cohort study of all cases serious enough to activate the Trauma Team at King's College Hospital during 2011 was undertaken. Demographic data, presentation times, investigations, interventions, morbidity and outcome data was collected for all cases.

Results: 378 major penetrating trauma calls from a total of 1,465 cases that activated the Trauma Team estimates the prevalence at this institution at 25.8%, 95% CI [23.50%, 28.04%]. 98% (n=374) of all these injuries were intentional (violence: n=352, deliberate self-harm: n=22). Of these intentional injuries, 86% (n=322) were inflicted by knives, 13% (n=43) by gunshot and 3% (n=9) by other sharp objects (scissors and glass). Official TARN figures for the same period at this institution recorded only 61 of the 322 knife injuries. The mean ISS of these TARN cases was 13.51. 93% of all assault victims were male (median age 21yrs, range 5-80). Overall mortality was 1.3% (n=5). Multiple knife injuries were seen in 36% of cases (n=137). 163 cases of thoracic injury and 139 abdominal/back injuries were observed. 69% (n=209) were admitted. 53 were admitted directly to theatre or the Intensive Care Unit. A total of 16 emergency thoracotomies and 42 laparotomies were performed for the knife and gunshot injuries alone. The temporal patterns of these violent injuries was analysed with respect to day, season and time with a peak at 2200hrs.

Conclusions: Routine data collection tools significantly underestimate the burden of penetrating trauma in this institution. The vast majority of all these injuries are intentional, often with multiple injuries and lead to significant morbidity and hospital resource utilisation. Mortality is low in this cohort. Similar in-depth studies including the far greater number of less serious knife

injuries would aid in the planning of violence prevention programmes and developing trauma systems.

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TIME OF ATTENTION TO PATIENTS WITH TC OR MINOR TCE IN THE EMERGENCY DEPARTMENT; CLINICAL SAFETY PROBLEM?

Sara Visiedo Sánchez (1), Ana Isabel Condon Abanto (1), Teresa Escolar Martinez Berganza (1), Jose Manuel Abascal Roda (1), María De La Peña Lopez Galindo (1), Miguel Rivas Jimenez (1)

1. Emergency department, HCU Lozano Blesa, Zaragoza, Spain

Corresponding author: saravisiedo@hotmail.com

Keywords: Time of attention, TC, Safety problem

Introduction: cranial trauma implies a growing reason for consultation in the Emergency Department of our country. This is a remarkable number of hospitalizations for this cause with a considerable social and economic cost. Triage is a process that allows a clinical risk management to handle properly and safely flows of patients when clinical needs and the demand exceed the resources.

Objectives: to know the profile of patients who consult (TC) head injury or traumatic brain injury mild (TCEL) in our emergency department. Factors associated with clinical safety in care for these patients to analyze and quantify the degree of compliance with safety in the Emergency Department.

Patients, material and methods: retrospective observational study of all patients older than 14 years treated in an Emergency Department of a big Hospital(870 beds) with TC or minor TC during the period from 1 January 2012 to 31 June 2012. Sources of information: listings of high and computerized medical records. A tab with the demographic variables, clinical and management study was designed for the collection of data. Analysed data using the statistical package SPSS version 18.

Results: During the described period 130,000 emergency were attended. 272 Cases of mild TC/minor TCE were obtained from your study. The 90.1% had a 15, 4.8% Glasgow Glasgow 14 and 4.8% 13. 46.5% were males. Headache (25.4%) and dizziness (18.3%) were the two most common clinical findings. 14.3% Required stay in the Short Stay Observation Unit. Brain TC was pathological in 9.8% of patients. The 48,85 patients was in treatment with antiplatelet and 7.7% with anticoagulant. The average triage time was 7.7 minutes +/-0.37 minutes, the average triage time for the first health care was 46 minutes +/-2.5 minutes, the time average scanner request, time to be seen by the specialist since is pursuing collaboration and time to make the scanner was 2 hours +/-15.6 minutes, 2.8 +/-34.7 hours and 2.7 hours +/-16.7 minutes respectively. The average stay in emergency time was 2.03 hours +/-6.3 minutes and the average time of stay in the observation room was 11,71 hours +/-54,46 minutes.

Conclusions: can not be a comparative analysis of the results obtained in our study with previous studies due to their small claims. The triage is consolidated as an effective system of management of care work, to give immediate response to demand mass within the S.U.H., facilitating the work of the staff and reducing anxiety of patients and family members to wait.

Finally, we highlight the importance of having a system of triage in the Hus, that allows to perform an analysis of services, in order to be able to compare these together with comfort and fundamental information that contributes to its quality management.

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THE ANALYSIS OF FACTORS AFFECTING INJURY SEVERITY OF FRONTAL MOTOR VEHICLE COLLISION

Sang Chul Kim (1), Kang Hyun Lee (2), Hyung Yun Choi (3)

1. Emergency Medicine, Konkuk University School of Medicine Chungju Hospital, Chungju, Korea, (South) Republic of
2. Emergency Medicine, Yonsei University Wonju College of Medicine, Wonju, Korea, (South) Republic of
3. Mechanical System Design, Hongik University College of Engineering, Seoul, Korea, (South) Republic of

Corresponding author: arahan@kku.ac.kr

Keywords: Motor vehicle collision, Frontal collision, Injury severity score

Purpose: This study analyzed factors affecting occupant's severity in frontal motor vehicle collision through the comparison between minor injury and major injury as the classification of injury severity.

Methods: From January 2011 to December 2011, we collected the data from patient whose AIS (Abbreviated Injury Scale) was over 2 score in any body part among patient visited at emergency room of two domestic hospitals by frontal motor vehicle crash accident. Also we surveyed the cause of accident, information of accident vehicle, vehicle's damage type or amount, occupant's information and injury severity, and accident environment. Vehicle's damage was presented CDC (Collision Deformation Classification) code through the evaluation by the photography of real accident vehicle, and patient's injury severity was evaluated by trauma score. Multiple logistic regression models were built to adjust for confounders.

Results: The case of frontal accident vehicle was 93 and the number of subjects was 112 with an average age of 43.4. Of 112 subjects, 73(65.2%) were males, and 59(52.7%) were major injury patients whose ISS (Injury Severity Score) were over 15 score. Of 93 cases, 48(51.6%) were sedans, 23(24.7%) were trucks, 14(15.1%) were SUVs, and 8(8.6%) were vans. Age, sex, seat belt fastening and crash extent had significant differences between major and minor injury ($p=0.003$, 0.010 and 0.015 and 0.046 , respectively). After adjustment by confounders, male and young age had a

higher risk of major injury than female and old in frontal motor vehicle collision (OR 3.45 [1.28-9.28], OR 9.46 [2.24-39.9], respectively).

Conclusion: Through the analysis of factors about vehicle, occupant and environment, we found that male and young age were factors affecting injury severity of occupant in frontal motor vehicle collision

Po-748

Front of the Auditorium poster area

LOWER EXTREMITY TISSUE DEFECT CAUSED BY MOBILE PHONE CHARGER EXPLOSION: A CASE REPORT

Arif Duran (1), Tarık Ocak (1), Ümit Yaşar Tekelioğlu (2), Furkan Erol Karabekmez (3), Ayşe Çetin (1)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
2. Department of Anesthesiology and Reanimation, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey
3. Department of Department of Plastic Reconstructive and Aesthetic Surgery, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Tissue Defect, Explosion, Charger

As the usage of cell phones is increasing markedly worldwide, accidents of injuries and even lethal damages caused by cellular phone explosions have been informed lately. Although, cell phone charger explosions related scalds and tissue lose are extremely rare, they usually cause severe damage to adjacent tissues and end up with a problematic situation.

A 9-year old female applied to our emergency service due to a cell phone charger explosion. The patient stated that she plugged in her battery charger and pressed "yes" key of the cell phone as it ringing and the charger were exploded. Initial examination revealed that 5-6 cm uneven burn with a tissue defect involving skin and underlying subcutaneous tissue at right anterolateral field above the knee. There were also several small areas of full thickness skin glow on both lower limbs. The patient could not produce the battery charger as the charger broke into many pieces. The patient was consulted with Plastic surgery office and underwent rapid debridement and corruption preparation. Dressing change on every other day was also suggested to the patient.

In conclusion, we recommend that cell phones and battery chargers, which are important links devices of our age, should be used carefully, and people should be more educated about taking necessary safety precautions during handling of these devices. Becoming aware of the predictable hazards and taking some protections can decrease cellular phone-related hazards.

Po-749

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PENETRAN INJURY OF THE NOSE WITH A FOREIGN MATERIAL

Arif Duran (1), Tarık Ocak (1), Furkan Erol Karabekmez (2), Tuğçe İmre (3), Ayşe Çetin (1)

1. Department of Emergency Medicine, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

2. Department of Department of Plastic Reconstructive and Aesthetic Surgery, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

3. Department of Otorhinolaryngology, Abant İzzet Baysal University Medical Faculty, BOLU, Turkey

Corresponding author: drarifduran@gmail.com

Keywords: Penetrating nasal injury, nail injury, nail gun

The traumas mostly related to extremity but less frequently related to the facial area. The frequency of traumas of the maxillofacial area shows differences according to socioeconomic and geographic features of the countries.

A 52 year old male patient who works in construction sector applied to emergency clinic with a nail pricked to upper side of his nose. It was learnt that the trauma occurred as a nail gun in his friend's hand had ignited. In his examination, general situation was good and he was conscious. In the physical examination, the top of the nail was seen in nasal dorsum, in the area of midline bone and then it was observed in endoscopic nasal examination that the tip of the nail was touching right middle mead, maxillary sinus medial wall.

A 35 years old male woodcutter was applied to different clinic with a tree branch on his mid-face penetrated to his nose. Patients told he couldn't able to remove the branch on the place which the accident occurred in his history. Lateral x-ray revealed foreign material entering to the dorsum of the nose and continuing towards to ethmoid lamina perpendicularis.

In conclusion, many situations such as lack of training, not to take necessary security precautions and neglect may cause to work accidents. The penetrating traumas to the middle of the face cases should follow carefully in the aspect of rhinorrhea. Removing foreign material should be done under general anesthesia with a great care to prevent iatrogenic damage to cerebrospinal barrier.

Po-750

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SWEDISH PHYSICIAN'S TRIAGE PERFORMANCE USING ATLS® ALGORITHM IN A SIMULATED MASS CASUALTY INCIDENT

Maria Lampi (1), Tore Vikström (2), Carl-oskar Jonson (2)

1. KMC - Centre for Teaching and Research in Disaster medicine & traumatology, University Hospital, Linköping, Sweden

2. KMC - Centre for Teaching and Research in Disaster medicine & traumatology, University Hospital, Linköping, Sweden

Corresponding author: maria@lampi.se

Keywords: ATLS®, Triage, Mass casualty incident

Abstract

Background

In a mass casualty situation medical personnel must rapidly assess and prioritize patients for treatment and transport. Triage is an important tool for medical management in disaster situations. Lack of common international and Swedish triage guidelines could cause confusion. Attending the Advanced Trauma Life Support (ATLS®) provider course becomes more and more a compulsory in the northern part of Europe. The ATLS® guidelines aim to effectively manage single critical injured patients, not mass casualty incidents. However, the use of the ABCDE-algorithms from ATLS®, has been proposed to be valuable, even in a disaster environment. The objective for this study was to determine whether the ATLS® provider course has an influence on Swedish physician's knowledge in triage.

Method

The study group contained 169 ATLS® provider course students from ten different courses and sites in Sweden. 153 students filled in anonymous a pre-test just before the course and a post-test just after the course. The assignment was to triage 15 hypothetical patients, which all had been involved in a bus crash. The triage was performed according to ABCDE-algorithm. In the triage, the ATLS® student used a color code algorithm containing red for priority 1, yellow for priority 2, green for priority 3 and black for dead. Finally, the student was instructed to identify and prioritize three of the most critically injured patient, which should leave the scene first. The same test was used for both pre-test and post-test.

Result

142 of the 169 participants fulfilled both the pre/post-test regarding the triage section. The mean pre-test scores where 9.51 patient points and for the post-test 9,21 patient points. 146 completed the last section where the student was instructed to identify and prioritize three of the most critically injured patients. 8 students managed to identify the three red ones in the pre-test and 11 students in the post-test. The result indicates that there is no significant difference in triage scores among Swedish physicians who attended an ATLS® provider course and took the test during the timeframe. The result also indicates that Swedish physicians have low experience (11%) of real mass casualty incidents and exercises.

Conclusion

The result of this study indicates that ATLS® provider course is not a significant tool for increase Swedish physician's knowledge in triage when using ABCDE-algorithm. Prior work has documented initial correct triage with 70-80 % among physicians during simulated mass-casualty incidents. Remarkably for this investigation is that the participants were able to triage only 9 correct patients on average of 15 (61%) in both simulated tests. This result is noteworthy and a concern. It should be considered that the result might have been different if another triage algorithm were used. Actions to increase Swedish physician's knowledge in triage, in the ATLS® context or separately, are warranted.

Po-751

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STATISTIC STUDY OF TRAUMATIC BRAIN INJURY WITH EPIDURAL HAEMATOMA IN HOSPITAL

Jesus Moreno (1), Alberto Moreno (2), Pilar Conde (3), Julian Bautista (3), Noemi Garrido (3), Eduardo Chinchilla (3)

1. Telematica, Universidad de Sevilla, Sevilla, Spain
2. Grupo de Innovación Tecnológica, Virgen del Rocío University Hospital, Sevilla, Spain
3. Emergency Department and Intensive Care Unit, the Traumatology and Rehabilitation Center of Virgen del Rocío University Hospital (Seville, Spain), Sevilla, Spain

Corresponding author: picoher@gmail.com

Keywords: Epidural, Traumatic Brain Injury, Haematoma

OBJECTIVES: Brain Traumatism Injury (TBI) with epidural haematoma is an important pathology in medical emergencies. It shows frequently low symptomatology in spite of its serious pathological consequences. The main goal of this study is to perform quantitative and qualitative analysis of the statistics in our service and evaluate the quality of the care processes.

METHODOLOGY: This research details the descriptive and retrospective studies performed of the Brain Traumatism Injury with epidural haematoma for patients admitted in the observation service (OBS) during 2012. The analyzed variables are age, sex, patient history, origin, brain traumatism causes, loss of conscience, initial symptomatology, initial Glasgow Core Score (GSC) and initial International Normalized Ratio (INR). Besides, we took into account complementary tests (computerized tomography scan (CT)), diagnosis, injuries related with TBI, previous medical treatments and final patient results. Statistic software: SPSS 18 and EPI info 3.5.1 (inference by means of chi square)

RESULTS: Brain traumatism patients with epidural haematoma admitted in OBS during 2012 were 9 men (75%) and 3 women (25%). The patient average age was 39 years old (ages between 19 and 91), among them 50% of the patients were less than 38 years old. 58% of the patients had previous medical treatments and 17% of patients received antiplatelet treatments. Causes of the injuries were: casual fall: 34%, accident: 8%, aggression: 8%, convulsion: 8%, syncope: 8% and horse fall: 8%. There was unconsciousness in the 75% of the cases, vomiting: 36% and headaches: 36%. Origins of patients: from other hospitals 42%, from emergency services ambulances 50% or other 8%. All patients had normal result the initial general exploration but 8% of them had neurological effects caused by the narcotics. The obtained results on initial Glasgow Core Score were 15 for the 84% of the patients and 14 for the other 16%. The following complementary tests were performed on patients: 100% Computerized Axial Tomography, 100% lab test and 33% X-Ray. 83% of patients

suffered cranial fractures and also 25% of patient had other fractures in other locations. 8% of the patients showed a neurological deterioration. Medical treatment was conservative without surgery in 92% of cases and surgical treatment for 8% of patients. After OBS, patients went to: 41% to medical primary care unit, 17% to external medical consultation in neurosurgery, 17% to hospital admission service, 17% to medical intermediate care unit or 8% emergency operating room.

There are no significative differences between neurological deterioration and antiplatelet treatment ($p=0,3502$) nor between cranial fractures and vomit ($p=0,2133$) or the patient's age ($p=0,7118$). The same result appears between initial Glasgow Core Score and surgical treatment ($p=0,3502$).

CONCLUSIONS:

- 1) Casual fall is the most frequent etiology (43%)
- 2) antiplatelet treatment didn't worsen the prognosis of our sample
- 3) results confirm the low variation on clinical exploration in traumatic epidural haematoma diagnosis
- 4) 8% of patients required emergency surgical interventions
- 5) less than half of patients (34%) required to be hospitalized
- 6) High incidence of association with cranial fractures (83%)

Po-752

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ANALYSIS OF DEATHS BY MAJOR TRAUMA IN EMERGENCY DEPARTMENT. DO PATIENTS RECEIVE APPROPRIATE CARE?

Pilar Conde (1), Antonia Vázquez (1), Jesus Moreno (2), Inmaculada Aponte (1), Jose Maria Rojas- Marcos (1), Alberto Moreno (3)

1. Emergency Department and Intensive Care Unit, the Traumatology and Rehabilitation Center of Virgen del Rocío University Hospital (Seville, Spain), Sevilla, Spain
2. Telematica, Universidad de Sevilla, Sevilla, Spain
3. Grupo de Innovación Tecnológica, Virgen del Rocío University Hospital, Sevilla, Spain

Corresponding author: picoher@gmail.com

Keywords: Major Trauma, Mortality, Emergency Department

OBJECTIVE: This research describes the analysis of deaths by major trauma patients in the Emergency Department (ED) of Traumatology Hospital in order to detect and correct any possible inefficiencies

METHODOLOGY: The analysis has undertaken retrospective and descriptive studies of the deceased patients within the ED during 2011. The analyzed variables include the following patient information: age, sex, hospitalized treatment, previous history and urgent complementary tests ordered; place and cause of death, diagnosis and kind of transport, mechanism of injury, injury severity criterion, Injury Severity Score (ISS), Revised Trauma Score (RTS) and survival probability based on the trauma score-injury. The information is analyzed with the Chi-square test within the statistics

RESULTS: Number of inpatients in ED during 2011: 81,312; Number of major trauma patients:144 and deaths: 15(10:4%) Average age: 52 years. Men: 87%, women: 13% Severity of injury was determined as critical for the included patients according to the established injury severity criterion according to their age (8 patients), comorbidities (3 patients) and mechanism of injury (10 patients) Patient received the following urgent complementary test: 98% lab test, 90% X-Ray test, 75% Computerized Tomography Scan, 60%. Focused Assessment with Sonography for Trauma (FAST); Patient were assessed with multiple scales with the following mean results: Injury Severity Score (ISS): 57 (min :50, max:75) Revised Trauma Score (RTS): 3,45. (min: 0, max:7,8) Survival Probability (SP) based on the Trauma Score- injury severity score (TRISS) < 25% for 80% of patients; between 25-50% for 7% of patients and <50% for 13% of patients. These last patients had serious previous pathology and died one month after admission.

Admission reasons were: 26% Fall (average age: 76 years), 34% high fall (average age: 40 years), 14% motorcycle accident, 6% car accident, 14% run over and 6% assault. Place of death: 40% Emergency room, 40% Intensive Care Unit, 7% Observation Unit, 13% hospitalized.

Admission injury were: Traumatic Brain Injury: 80%, abdominal trauma:20%; thoracic trauma 20%; skeletal trauma 20%; pelvic trauma: 20%; traumatic hypovolemic shock:40%;

Diagnosis were: 80% Traumatic Brain Injury and Traumatic Brain Injury with polytrauma: 20% polytrauma.

5% of dead patients with major trauma were included in the hospital donation program.

Profile for emergency room deaths: average age:36 years; ISS: 71;sp:9% Injury severity criterion was determined by the injury mechanism, kind of transport was 100% Emergency service ambulance. Their diagnoses were: 83% traumatic hypovolemic shock, 17% Traumatic Brain Injury. There are not relevant differences between ISS/ hospitalised time and Anticoagulant treatment/Survival Probability

CONCLUSIONS

1)Less than half (40%) of patient deaths occurs within first hour in hospital. 2) 13% of death patients were dead before admission, further analysis about prehospital setting is recommended to reduce this mortality. 3) The most frequent etiology is accidental high fall 4) All the patients were severity injured (ISS more than 50). 5) 5% of dead patients with major trauma were included in the hospital donation program.

Po-753

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PRE-HOSPITAL TRAUMA CARE IN ROAD ACCIDENTS

Alin Canciu (1), Madalina Comsa (1), Cristina Corodescu (1), Cristina Maria Goia (1), Marius Smarandoiu (1), Daniela Taran (2)

1. Emergency department, SMURD Sibiu, Sibiu, Romania

2. Emergency department, UPU-SMURD Sibiu, Sibiu, Romania

Corresponding author: krysgoia@yahoo.com

Keywords: road accidents, traumatic injuries, EMS optimization

Background

Despite major improvements in health since the middle of 20th century, the modern world comes into the scene with a number of new challenges.

Unfortunately, road traffic crashes rank as the 9th leading cause of death and account for 2.2% of all deaths globally. European Union makes no exception and sees more than 40 thousands fatalities and 1.7 million injuries from road accidents each year in spite of road safety regulations efforts. Road crashes are the leading cause of death among young people ages 15-29, and the second leading cause of death worldwide among children. Unless action is taken, road traffic injuries are predicted to become the fifth leading cause of death by 2030.

SMURD (Mobile Emergency Service for Resuscitation and Extrication) is a Romanian prehospital service specialized in attending critical medical situations. During the last two years, Sibiu SMURD teams were sent to an important number of road accidents. The purpose of our study is to analyze and improve EMS reactions and performance. Other goals of our study is to identify the existence of patterns in the incidence and frequency of road accidents (periods of the year / month / day of the week, hours) and the most common trauma injuries in polytraumatized patients.

Methods

From the total of 2922 cases, dispatched to SIBIU MICU a substantial number of cases were road accidents. The study was done based on SMURD Sibiu database and full medical records of the patients involved in the accident. The period of time is between 01.01.2011 - 31.12.2012. Medical details collected: patient medical status when team arrived, mechanism of injury, GCS (Glasgow Coma Scale), presumptive diagnosis and medical procedures taken onsite.

Results

Out of 2922 cases, 668(23%) were traumas out of which 363(12%) were road accidents.

Analyzing the type of vehicles involved in the incidents, the study outputs a distribution of pedestrians, cyclists, motorists, trucks, single-vehicle and multiple vehicle collision.

Map of traumatic injuries: head (34%), limbs (31%), thoracic (15%), spinal (13%) and abdominal (7%) and their impact on traumatic patient evolution. The study highlights cycling patterns in the incidence and frequency of road accidents. The most accidents occur in August, at the end of the week, with a maximum on Thursday and Friday between 12:00am and 8:00pm.

Conclusion

During the studied period there was an increase in trauma road accidents occurrences.

Although some injuries are more frequent than others this does not necessarily mean that they are the most life threatening for the patient. Once a full response has occurred and many hands are available, paramedics will

adapt the right protocol to optimize the patient evolution. Fatal injuries need priority when seconds matter.

EMS output optimization is definitely needed:

- A reserve of EMS teams (second level) during high risk intervals
- Tuning the trauma protocols based on mechanism of injury
- Share the prehospital experience with police, hospitals and other public institutions
- General population prevention

Po-754

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EVALUATION OF A DIAGNOSTIC TEST TO CLINICALLY ASSESS THE EXISTENCE OF A FRACTURED ELBOW IN ADULT EMERGENCY DEPARTMENTS.

Oriane GARDY, Jean Philippe DESCLEFS, Céline LEJEUNE, Jafar MANAMANI, Dominique PATERON
Emergency Department, Hopital Saint Antoine, PARIS, France

Corresponding author: oriane.gardy@gmail.com

Keywords: Elbow trauma, Clinical test, Radiography

Introduction

Elbow injuries are a usual cause for consultation in adult emergency departments. The prevalence of bone lesions remains low. A large number of standard radiographs could be useful less. The objective of this study was to determine if a few simple clinical parameters could avoid the prescription of standard radiographs without risk of bone lesion misdiagnosis.

Methods

We performed a prospective, observational study in an adult emergency department. Patient with isolated injuries of the elbow occurred in the last 48 hours were included. Traumatism mechanism, flexion-extension and pronation-supination amplitude were noted. Patients were then contacted again within 15 days after the initial consultation. Clinical follow-up and the result of any external consultation, X ray examinations or scanner were noted .

Results

49 patients (29M / 20F), mean age of 41 years, were included. We observed 28 fractures / dislocation. The combination of full extension and pronation-supination painless for patients aged less than 55 y has a NPV of 100% .

Conclusion

The combination full extension / pronosupination painless in patients with elbow traumatism under the age of 55 could eliminate a bone lesion , and could allow to avoid emergency radiography prescription. This proposal has to be confirmed in a larger multicentric population.

Po-755

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EARLY MOBILIZATION VS. IMMOBILIZATION ON MILD AND MODERATE ANKLE SPRAINS

Oscar Martinez Ferris (1), Maria Roig Dura (1), Sergio Navarro Gutierrez (1), Luis Manclus Montoya (1), Almudena Lluch Sastriques (2), Silvia Castells Juan (1)
1. Emergency Department, Hospital Universitario de La Ribera, Alzira, Valencia, Spain
2. Emergency Department, Hospital Universitario La Fe, Valencia, Spain

Corresponding author: sergionavarrog@hotmail.com

Keywords: treatment, ankle sprain, emergency

OBJECTIVES

There is not a consensus on treatment of mild and moderate ankle sprains. Injuries occur typically during plantar flexion and inversion.

Ankle sprains are classified from grade I to III (mild, moderate and severe)and the main objective of treatment is removing the functional instability.

Each physician must decide which treatment should be provided.

METHODS

We conducted a prospective trial to determine which treatment functional stabilization (including use of RICE during 48h) and protection with a tape during 10 days vs. use of a ferule for 10 days is more effective.

RESULTS

We compared in both groups potential differences in terms of return to work and duration of pain. Twelve days after injury, patients in the early mobilization group had earlier return to work (61% vs. 26%) In addition to this, patients in the early mobilization group, reported in average less pain after 2 weeks (81% vs. 62%)

DISCUSSION

Controversy about the appropriate therapy on acute lateral ankle ligament injury still remains.

Functional treatment seems to recover patients earlier in terms of returning to work than treatment with ferule.

Patients who received conservative treatment with a ferule reported more pain than those who received functional treatment.

Po-756

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CT SCANS IN TRAUMAS: TARGETED OR WHOLE-BODY

Abdo Sattout (1), James Chapman (2), Michael Hickey (1), John Hollingsworth (1)
1. Department of Emergency Medicine, Aintree University Hospital, Liverpool, United Kingdom
2. School of Medicine, University of Liverpool, Liverpool, United Kingdom

Corresponding author: abdo.sattout@aintree.nhs.uk

Keywords: Trauma, Computed Tomography (CT), Incidental Findings

Introduction

Radiological imaging plays a crucial part in the management of Major Traumas. Although plain radiographic images are still widely used in most emergency departments (ED), there has been more reliance on computed tomography (CT) scans to reach fast and accurate diagnoses. In current practice, the use of CT scans is divided amongst ED trauma physicians between a targeted and whole-body (or pan-CT) approach.

Method

We conducted a retrospective study of all trauma patients who attended the ED at Aintree University Hospital and initiated a Trauma Team activation during the period covering the months of June until December 2012. Data was obtained from the ED Trauma Audit and Research Network (TARN) records, and all patients who underwent radiological imaging with CT scans were enrolled. The use of either targeted or pan-CT scans was reviewed along with findings.

Results

A total of 251 trauma patients attended the ED over the 6 month period from June until December 2012. Following review of medical records, 214 patients (85%) were identified to have received CT scans: 173 males (81%) and 41 females (19%). Ages ranged from 15 to 87 years (median 37 years) with a predominance in the 20-30 years age group (56 patients, 26%).

Targeted (mostly head and neck, whole spine or chest-abdomen-pelvis) CT scans were performed in 110 patients (51%). Positive findings consistent with acute traumatic injury were identified in 50 patients (45%). Only one patient had his targeted CT undertaken post emergency thoracotomy. None in the targeted CT group required either repeat or additional CT imaging.

Pan-CT or whole-body scans were performed in 104 patients (49%) with positive findings identified in 84 (81%). Interestingly in the pan-CT group, 3 male patients (3%) had incidental findings during their imaging. Although the first patient (78 years) had no traumatic injuries confirmed, a 12x14 mm calcified Meningioma was identified. The second patient (71 years) had a traumatic subdural haemorrhage with an incidental 6 cm abdominal aortic aneurysm (AAA) whilst the third (54 years) had a traumatic pneumothorax with incidental adrenal and renal lesions.

Discussion

As it can be noticed from our results, there was almost an equal use of either targeted and pan-CT by the ED trauma physicians in our department. This was mostly dictated by the type and severity of the presenting trauma case, with a more positive yield seen with a pan-CT.

In our targeted CT group, the lack of additional radiological intervention suggests that experienced ED trauma physicians are capable of making clinically safe decision when choosing their imaging approach.

Incidental findings on pan-CT scans for traumas had been reported in several papers. The incidence of such results vary considerably amongst Trauma Centres with some as high as 43% in their trauma patients. Our incidental small number can only be attributed to the relatively small

number of patients and the short period of the study. Of note, a follow up had been arranged for these patients prior to their discharge.

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DROWNING-RELATED INJURIES: FALLEN FROM THE BRIDGE FOR THE PURPOSE OF SUICIDE

Seung Pill Choi (1), Jeong Ho Park (1), Jung Hee Wee (2)

1. Emergency department, Yeouido St.Mary's hospital, seoul, Korea, (South) Republic of

2. emergency department, Yeouido St. Mary's hospital, seoul, Korea, (South) Republic of

Corresponding author: jhpark1977@catholic.ac.kr

Keywords: drowning, bridge, suicide

Purposes: Falling from the bridge into the river is one of the common methods of suicide. In a recent report, 37 patients with cardiac arrest after drowning, severe traumatic injuries occurred in 5 (36%) of these patients. The objective of this study was to report injuries in drowned patients after jump from a bridge to purpose of suicide, without regard to cardiac arrest.

Methods: We conducted a retrospectively reviewed the charts of all patients admitted to emergency department in tertiary care teaching hospital for drowning after a jump from a bridge in the Han River between September 1997 to November 2011. We analyzed the results of imaging studies of patients. Each injury was described as one of six body regions similar to the method of The Injury severity score (ISS).

Results: A total of 463 patients were admitted to emergency department due to drowning. Among these patients, 65 patients have fallen from the bridge for the purpose of suicide. 40 patients was cardiac arrest, 25 patients were not cardiac arrest. In cardiac arrest patients, 25 patients (62.5%) had radiologic examinations. Only 1 patient (2.5%) received serious damage on cervical spine, damage to other parts of the body was not found. On the other hand, all non-cardiac arrest patients underwent imaging studies. Seven of these patients (28%) showed evidence of severe injuries. Most injuries occurred in the chest. Four patients were injured: rib fracture, pneumothorax, lung contusion and thoracic spine fracture. One patient was damaged in the abdomen: intra-abdominal hematoma. Last one patient's injury occurred in the chest and abdomen.

Conclusions: In drowning patients to purpose of suicide, a lower probability of damage, serious damage could not be ruled out. Especially, is not confined to specific areas, damage to various parts of the body should keep in mind.

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HELICOPTER INTERVENTIONS AT POLY-TRAUMA PATIENTS IN NORTH-EAST OF ROMANIA

Diana Cimpoesu (1), Claudia Bursuc (2), Bogdan Stefan Zamfir (3), Vladimir Makkai (2)

1. Emergency Department, University of Medicine and Pharmacy "Gr.T.Popa", Iasi, Romania

2. Emergency Department, University Emergency County Hospital "Sf.Spiridon", Iasi, Romania

3. Emergency Department, Military Emergency Hospital "Dr.Iacob Czihac", Iasi, Romania

Corresponding author: claudiabursuc2011@yahoo.com

Keywords: poly-trauma, helicopter, region

Background: The poly-trauma is the third cause of death in all age groups. The younger are the most exposed to it. Romania holds the third place in Europe in terms of death in car accidents. It is easy to imagine that, depending on the magnitude of the accident, the distance between the place of the event, the level of training of the available medical crews, the time of arrival of the first victims to hospital show a great variety.

Objectives: Evaluation of the traumatized patients that were transported by helicopter in the North-East Romania.

Methods: Retrospective study of the interventions of SMURD helicopter for poly-traumatized patients in the North-East Romania, in the period March 2011 – March 2013. North-East Romania is about 30,949 km² and has 3.84 million inhabitants. Iasi is the coordinating medical university center. It was intervened with an Mi8 helicopter and a Eurocopter135 helicopter, having mobile intensive care medical equipment, 2 pilots, 1-2 emergency physician and 1 nurse. The helicopter serves the adults and children of all over the region.

Results: The study includes 88 patients, average age 34.34 ± 2.772 years, predominantly male (72%) and adults (68.2%). The interventions were: 29.5% primary (on-site emergency response and transportation of the victim or patient to the emergency room of the nearest competent hospital in less than 3 hours) and 70.5% secondary (intervention for transporting a critical patient from a medical unit to another unit with higher competence in solving case). Most frequent interventions in winter time were for the burns (38.6%), and in spring time for the car accidents (27.3%); there was also noticed a higher percentage of interventions in week days (62.5%) than in weekends. The greatest number of helicopter interventions was registered in the counties of Iasi (33%), Vaslui (29.5%) and Suceava (17%). Cases taken by ESA (air rescue crew) were directed to Iasi (76.1%) and the rest to Bucharest (especially burns and spinal medullar injuries). The average intervention time in Iasi was 20 minutes by air compared to 45 minutes by road, for Vaslui 30 minutes by air vs. 80 minutes by road, for Suceava it was 45 minutes by air and 120 minutes by road. The predominant type of accident that produced the injury was burn trauma (26.1%) followed by car accidents (22.7%) and high falls (13.6%). Brain injury (56,8%) and chest trauma (27,2%) were the most common. The most common

combination was lesional brain injury with chest trauma and brain injury with severe trauma limbs. Most patients did not require oro-tracheal intubation (56.8%) but were given large amounts of fluid (1000 ml - 63.6%), major analgesics opioid (43.2%) and sedation (46,6%) correlated with RTS (p<0,001).

The average revised trauma score (RTS) was 10.26 ± 0.246. The average RTS was the highest (12p) for train crash and the lowest (5,6p) for the hanging. Oro-tracheal intubation rate was 43.2% (predominantly accidents and burns) correlated with RTS (p <0.001). Death rate during interventions was 3,4% from which the patients with cardiac arrest represented 6,8%.

Conclusions: The intervention by air is justified for a shorter intervention time (a quarter of the required intervention by road), it is extremely important in the case of time-dependent diseases (acute coronary syndrome, emergency neurosurgical intervention, ensuring the effective therapies for burns). Road infrastructure can be a real problem especially in cases of spinal medullar lesions, brain injuries or pre-hospital human resources management: mobilizing the medical crew of the county's Ambulance Service by road in order to transfer critical patients to Iasi implies serious difficulties in the emergency medical assistance because of the small number of physicians and the long time needed for transportation.

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EVALUATION OF THE MANAGEMENT OF THE PATIENTS TREATED BY ANTICOAGULANTS VICTIMS OF A HEAD INJURY IN AN EMERGENCY DEPARTMENT

Grégoire Versmée, Mickaël Roux, Guillaume Valdenaire, Matthieu Yali, Caroline De La Rivière, Pascale Leforestier, Baptiste Valle, Matthieu Biaï

1. Service des Urgences Adultes, CHU Bordeaux - Hôpital Pellegrin, Bordeaux, France

Corresponding author: gregoire.versmee@gmail.com

Keywords: head injury, brain ct-scan, triage

AIM: To measure the time between admission at the emergency department and the realization of brain CT scan in patients who had a head injury and treated by anticoagulants.

MATERIALS AND METHODS: The French Society of Emergency Medicine published in September 2012 recommendations on the management of head injury. These recommendations call for the execution of a brain CT scan, for patients treated with anticoagulants, in one hour after their admission. We conducted a prospective, observational study. Every patient admitted in the emergency department treated with anticoagulants that were victim of a fall or trauma with head impact was included. We measured the time between the patient's admission and completion of brain CT scan.

RESULTS: Between March 4th 2013 and April 24th 2013, 40 patients were included. The completeness rate was at 100%. 40% of patients underwent a brain CT less than an hour after admission. When the deadline was met, the average was 31 minutes after their admission (standard deviation 18 minutes). In 47.5% of cases, the notions of head injury with anticoagulant treatment were indicated in the observation of the admission's nurse. When the identification was made, the average time was at 67 minutes (standard deviation 47 minutes). Otherwise, the average was at 111 minutes (SD 77 minutes). The increase of the period was statistically significant ($p < .05$).

CONCLUSION: The recent recommendation of the French Society of Emergency Medicine has led to a change in professional practices, and deadlines are difficult to meet. Training the admission's nurse to the detection of patients at risk seems to be a good way to improve the completion time of brain CT scan.

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DID DEAD PATIENTS RECEIVE AN APPROPRIATE CARE?

Alberto Moreno (1), Jesus Moreno (2), Pilar Conde (3)

1. Grupo de Innovación Tecnológica, Virgen del Rocío University Hospital, Sevilla, Spain

2. Telemática, Universidad de Sevilla, Sevilla, Spain

3. Emergency Department and Intensive Care Unit, the Traumatology and Rehabilitation Center of Virgen del Rocío University Hospital (Seville, Spain), Sevilla, Spain

Corresponding author: picoher@gmail.com

Keywords: death, Survival Probability, Emergency Department

OBJECTIVE: Analysis of the Emergency Department (ED) response in

patients who die in a Traumatology hospital for detecting and correcting any service inefficiency.

METHODOLOGY: This analysis has undertaken a retrospective and descriptive

study of deceased patients in the Emergency Department within the years 2011-12. The analyzed variables are: age, sex, hospitalized time; treatment before the hospitalization and hospitalized treatment, previous medical history and urgent complementary tests ordered; time of death, place, reason and diagnosis, kind of death (natural or traumatic causes) and kind of transport. The information is analyzed with the Chi-square.

RESULTS: Number of inpatients in Emergency Department occupational: 159,533; Mortality rate:2.13/10000 inpatients; Total number of death: 34; Inpatient Previously Dead: 24%; Average age: 76 years (min :8 years , max:96 years). Men: 56%, women: 44% Traumatic Death: 76%, Average time in the hospital: 5 hours (min 0,3 h, max 99h). Death within the first hour: 10%; 2nd-3rd hours: 34%, 4th-6th hours: 22%; >24hours: 34%. Distribution within a day: Morning: 29%, Afternoon: 24% and Night 47%. Distribution within a week Monday: 20%, Tuesday: 23%;

Wednesday:10%; Thursday:7%; Friday: 7%; Saturday: 10%; Sunday: 23%. Distribution within a year: January; 9%, February:15.5%, March:9%, April: 3%, May: 12%, June:9%, August:3%, September:15.5%, October:3%, November:12%, December:12%.

Injury Severity Score (ISS) average: 25 (min: 4, max: 25) Revised Trauma Score (RTS) average: 5.5 (min:3, max:10).

Survival Probability <50% based on the Trauma score-injury severity score (TRISS) :31%; between 50-75% Survival Probability :15% (3 patients) and >75% survival probability: 54% (10 patients) (All these patients had diagnosis TBI with anticoagulant treatments). Patients with a serious previous pathology had TRISS more than 50%. Patients with previous treatments and pathologies: 85% and patients with anticoagulant treatments: 38%.

Admission reasons: occupational accident: 3%, attack: 3%, Fall: 24%, high fall:3%, motorcycle accident: 6%, car accident: 30%, outrage: 3%, previous illness: 28%.

Diagnosis: Inpatient Previously Dead (IPD): 20% Polytrauma: 9% Traumatic Brain Injury (TBI): 50%, polytrauma with Traumatic Brain Injury: 3; Neoplasia: 12%, cerebrovascular accident (CVA): 6%. There are not relevant differences between injury severity score / hospitalized time ($p=0,2286$ chi-square:128.0412), Anticoagulant treatment/Survival Probability ($p=0,2137$, chi-square=19.000) and Anticoagulant treatment/age ($p=0,2295$, chi-square:29.8667).

On the other hand, there are relevant differences between previous medical history and place of death ($p=0.0045$ (chi-square:10.8159)

CONCLUSIONS:

1. Around half of the patient deaths (43%) occur within the first 3 hours in the hospital. Most traumatic deaths happen in weekends (40%) and in the afternoon/night (71%).

2. Most of the patients were severity injured (more than 25%).

3. Avoidable deaths were not detected, except for the cases where serious pathologies got worse than initial predictions and survival probability estimations.

4. The 24% of patient deaths were before admission or in an irreversible manner.

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QUALITY OF LIFE AFTER MILD TO MODERATE TRAUMA

Beatrice Del Taglia (1), Alessandro Coppa (1), Federica Trausi (1), Francesca Innocenti (1), Riccardo Pini (1)

1. Department of Critical Care Medicine and Surgery, Azienda Ospedaliero-Universitaria Careggi, Firenze, Italy

Corresponding author: innocentif@AOU-careggi.toscana.it

Keywords: Trauma, health related quality of life, prognosis

Background: To evaluate potential reduction in health-related quality of life (HRQOL) after 6 months from a mild to moderate trauma in adult patients admitted to an

Emergency Department High Dependency Unit (ED-HDU), and to study possible determinants of the HRQOL reduction.

Methods: We performed a follow-up study of a cohort of 307 trauma patients admitted to the HDU of the Emergency Department (ED) of the University Hospital of Florence from July 2008 to February 2012. Anamnestic data and main clinical and laboratory parameters were obtained for each patient, to evaluate Sequential Organ Failure Assessment (SOFA) score as an organ dysfunction index (at ED entrance (T0) and after 24 hours of ED-HDU stay (T1)). ISS was calculated using the 2005 updated version of the Abbreviated Injury Score.

A telephone interview using the Physical (PCS) and Mental (MCS) Health Composite Score (SF12) was conducted at least six months after the event; patients reported their HRQOL both at present and before trauma. We could contact 154 patients.

Results: Mean age of the study population was 55±22 yrs, 67% male gender; mean ISS score was 12±9. T0 SOFA score was 1.9±1.5 (range 0-6), T1 SOFA 2.1±1.3 (range 0-5). Thirty-five patients were discharged home from ED-HDU; 123 patients were admitted to ordinary medical ward, 4 to ICU, 4 to a surgical ward and 21 to orthopedic ward.

Before the event 139 subjects reported a normal (>39, considering one standard deviation below the mean value) PCS and MCS. Baseline mean PCS and MCS values were respectively 53±7 (range 25-64) and 54±7 (range 28-63). Considering PCS, 126 patients reported a value>50, that indicated absence of disability; 18 patients reported a value between 40 and 49, 8 patients a value between 30 and 39 and 3 patients a value<30, indicating respectively mild, moderate and severe disability. For MCS, 117 patients reported a value >50, 26 a value between 40 and 49, 10 patients a value between 30 and 39 and 1 a value <30. After the event, values decreased to 41±12 (range 14-64) considering PCS and 46±12 (range 16-67) considering MCS; both variations were highly significant (all p<0.0001). Patients distribution across the aforementioned four categories changed significantly: for PCS, 45 patients reported a value >50, 31 patients a value between 40 and 49, 45 patients a value between 30 and 39 and 32 patients a value<30; for MCS we found respectively 65, 36, 35 and 17 patients in each of the aforementioned subgroups.

PCS and MCS worsening was present in the whole population but also considering separately head trauma patients (n=132, p<0.0001) and subjects with chest trauma (n=53, p=0.01). Fifty-six patients with head trauma showed intracranial injury (ICI); GCS, both at ED entry (14.5±0.9 in patients with vs 14.6±1.3 in patients without ICI, p=NS) and after 24 hours (14.6±1.4 in patients with vs 14.9±0.7 in patients without ICI, p=NS), did not show any significant difference regardless the presence of ICI. PCS and MCS worsening was not associated with ICI presence.

Patients who reported a decreased PCS were significantly older (66±21 vs 45±19 years, p<0.0001). Trauma severity assessed by ISS score (13±11 vs 12±7, p=NS) was not significantly different; organ dysfunction, evaluated with SOFA score, was worst at ED admission (2.3±1.5 vs 1.7±1.5, p=0.027) and after 24 hours (2.4±1.3 vs 1.7±1.3, p=0.008). Hemoglobin value was lower (11±2 vs 12±2 gr/dl, p=0.001)

and patients with worsened PCS received more frequently blood transfusions (15 vs 1%, p=0.002). We thus performed a multivariate logistic regression analysis that included all clinical parameters significantly different among patients with normal and decreased PCS after trauma. An advanced age (RR 1.033, 95%CI 1.010-1.057, p=0.005) and a higher SOFA T1 score (RR 1.500, 95%CI 1.027-2.190, p=0.036) were independently associated with a worsening PCS.

Given that the same parameters were also associated with MCS deterioration, except for gender, we performed a separate multivariate analysis for MCS worsening. A higher SOFA T1 score (RR 1.720, 95%CI 1.179-2.509, p=0.005) was independently associated with a worsening MCS, while an advanced age only tended to be significant (RR 1.022, 95%CI 1.000-1.045, p=0.051).

Conclusions: After a mild to moderate trauma, we evidenced a significant reduction in HRQOL, both in the physical and mental dimensions; a higher degree of organ dysfunction was independently associated with a PCS and MCS deterioration.

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CORRELATION BETWEEN HEMODYNAMIC STABILITY AND MAJOR TRAUMA (ISS >15)

M Azam Majeed (1), Tariq Syed (2), David Yeo (2)

1. Emergency department, University Hospitals, Birmingham., Birmingham, United Kingdom

2. emergency department, university Hospitals, Birmingham., Birmingham, United Kingdom

Corresponding author: mazammajeed@hotmail.com

Keywords: Major trauma, ISS, Low systolic BP

Background:

The Injury Severity Score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries. Each injury is assigned an Abbreviated Injury Scale (AIS) score and is allocated to one of six body regions. Only the highest AIS score in each body region is used. The 3 most severely injured body regions have their score squared and added together to produce the ISS score. The ISS score is virtually the only anatomical scoring system in use and correlates linearly with mortality, morbidity, hospital stay and other measures of severity.

Major trauma is commonly defined using an Injury Severity Score (ISS) threshold of 15. Patients with major trauma should be managed in major trauma center for the best outcomes. ISS score is done retrospectively and therefore we were trying to find some basic observations, which we can relate to ISS.M

Objective:

To evaluate the correlation between hemodynamic stability (SBP) and ISS score.

Method:

We analysed the notes of last 329 patients, who met the criteria of major trauma.

Settings:

It was conducted at UHB, uk (level 1 trauma center).

Design:

It is a retrospective study.

Inclusion criteria:

All adults, which triggered the major trauma tool.

Exclusion:

Patients with age less than 16 yrs.

Results:

Total patients: 329

Systolic Blood pressure <90: 11 pts (3.34%)

ISS score >15 230 pts (69.9%)

ISS score 9-15 55 pts (16.7%)

ISS score <9 33 pts (10%)

To our surprise 11 (3.34%) patients out of 329 had systolic blood pressure less than 90mm of Hg but 70% patients had ISS >15.

Discussion:

Physiological parameters are always crucial in the initial assessment of the traumatized patients. They help us assessing the degree of shock but how well they correlate with the anatomical injuries isn't very clear. Determining the extent of injury to a patient, either by physiological or anatomical parameters, is central to healthcare funding. Being able to estimate the severity with the help of different parameters on presentation can lead to even smoother journey of the patient. We can plan imaging, theater or ITU beds etc. As in other studies (1), systolic BP alone has weak correlation in predicting with trauma outcome. Our results are the same, systolic BP alone doesn't seem to have a significant correlation with injury severity score and thus predicting trauma outcome. Thus proving the point that low systolic BP doesn't always mean that it's a severely injured patient.

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CAN INITIAL SERUM LACTATE LEVEL PREDICT MAJOR INJURIES (ISS>15) IN TRAUMA PATIENTS.

M Azam Majeed (1), Tariq Syed (2), David Yeo (2)

1. Emergency department, University Hospitals, Birmingham., Birmingham, United Kingdom

2. emergency department, university Hospitals, Birmingham., Birmingham, United Kingdom

Corresponding author: mazammajeed@hotmail.com

Keywords: major trauma, ISS, serum lactate

Background:

Lactate was first described by Gaglio in 1886. Its measurement required the collection of 100–200 ml blood and took several days to complete. In 1964 Broder and Weil [1] were the first to use a photospectrometric method to measure lactate levels in whole blood decreasing turnaround times greatly. Current handheld devices and mobile blood gas analyzers have decreased turnaround time to less than 2 min using a minimal amount of blood

[2]. Serum lactate levels are often used to measure tissue hypoperfusion in adult sepsis patients and in trauma patients who don't show signs of shock.

Data from other studies suggest that measuring serum lactate at later intervals after blunt trauma might be useful for assessing injuries, and more research is needed to determine its usefulness.

Objective:

To evaluate the role of lactate in the early recognition of major injuries.

Method:

We analysed the notes of last 329 patients, who met the criteria of major trauma.

Settings:

It was conducted at University Hospitals Birmingham, UK. (level 1 trauma center).

Design:

It is a retrospective study.

Inclusion criteria:

All adults, which triggered the major trauma tool to attend the major trauma center.

Exclusion:

Patients with age less than 16 yrs.

Results:

We had a total of 324 patients in 7 months time who were treated as major trauma patients. This was conducted over the period of 7 months (July 2011- Jan 2012). The blood test was done on arrival to the Emergency Department, which usually is between 30-120mins after the original trauma.

Total patients with Major trauma 329

Total patients with ISS 9-15 55 (16%)

Total patients with ISS >15 230 (70%)

Normal Lactate <2 mmol

Lactate of <2mmol 63 patients (19%)

Lactate of 2-4 mmol 106 patients (32.2%)

Lactate > 4mmol 160 patients (48.6%)

80.8% patients had an abnormal lactate in comparison with 70 % patients with ISS more than 15.

Conclusion:

Resuscitation of trauma and surgical critical care patients has always been guided by a combination of basic laboratory values, invasive monitoring and clinical findings. The ideal marker for predicting the major trauma should be able to accurately and reliably estimate the risk. In addition, it is critical that this information is provided in a timely fashion (within the first several hour) to plan the further journey of patient.

Our results suggest that in the initial 1-2 hrs after the trauma, lactate levels alone can be helpful to assess the severity of injuries. We believe it's more to keep a check of the trend rather one off the results.

Our study has got a small number therefore to further clarify the role of lactate in risk stratification; we need to conduct this study at a much wider level.

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OPTIMISING TRAINING AND TRANSFORMING TRAUMA CARE THROUGH SIMULATION TO DETERMINE IF NOVEL ENHANCED SIMULATION BASED TRAUMA TEAM TRAINING CAN IMPROVE CLINICAL TEAM PERFORMANCE IN POLY TRAUMA MANAGEMENT.

SETTING: LEVEL 1 TERTIARY TRAUMA CENTER.

MAHTAB SIDDIQUI, UMESH SALANKE, David Yeo, Vibhore Guta, Azam Majeed, Hamid Shahzad
Emergency department, Queen Elizabeth Hospital, BIRMINGHAM, UNITED KINGDOM.

Corresponding author: mahtabas@me.com

Keywords: Trauma training, Simulation, Multidisciplinary team

Objective: To determine if novel enhanced simulation based trauma team training can improve clinical team performance in poly trauma management.

Setting: Level 1 Tertiary trauma center.

Participants: Emergency department (ED) staff including EM, Anaesthetics and Orthopaedic Trainees alongside ED nursing personnel.

Participants: Emergency department (ED) staff including EM, Anaesthetics and Orthopaedic Trainees alongside ED nursing personnel.

Design: A novel simulation based training course was developed to simulate the management of a polytrauma patient in the first 30 minutes in the Emergency Department. There is an emphasis on real time simulation to enhance the development of team leadership, team working dynamics, time management and generic skills needed for the initial management of a polytrauma patient. The first clinical scenario was run by the faculty. Each trauma teams was made up of 4 doctors and 3 nurses and four scenarios of graduated difficulty were encountered. All team members played different roles in each clinical scenario. It also involved hands on practice from basic airway adjuncts to difficult airways exercise along with intercostal chest drain insertion, pelvic binder application, limb splints and plaster of Paris (POP). The team was made to analyze results of FAST scans, blood gas and x-rays to guide them to decide the further management. Nursing roles included scribing, drug/blood administration, assistance with procedures. As the scenarios were run in real time, each scenario taking approximately 30-40 minutes to complete, allowing the participants to experience the management of a polytrauma patient as they would in real life.

Four workshops were undertaken; Intercostal chest drain insertion, Advanced Airway Management, Application of

POP and Thomas/Kendrick's splint. Final year medical students (2) were taken for each course as observers. Feedback about clinical and non clinical performance was provided after each clinical scenario by appropriate medical and nursing faculty.

Outcome: Candidates were asked to fill in a feedback form to evaluate their understanding about trauma management and how useful they found this training day to enhance their confidence and performance in managing it. The feedback was graded on a five-level Likert scale.

Results: Five courses have been successfully conducted.

77 participants were questioned on a 5 point Likert scale (1- Strongly Disagree to 5- Strongly Agree)

1) Relevance to clinical practice – 4.90(95%CI 4.84-4.97).

2) Would this change / improve clinical practice 4.72 (95%CI 4.60-4.84).

3) Would you repeat on regular basis for update of skills 4.80(95%CI 4.70-4.90).

They found it more realistic as compared with other trauma courses due to the nature of running this in real time and were keen to do it every year to keep them up to date.

Conclusion: The simulation course appears to be a promising method for enhancing didactic teamwork training in managing polytrauma. This approach, using a simulation, is more representative of a normal working environment and is therefore the preferred paradigm in which to perform teamwork training and advanced trauma management. This may be of increasing importance as the model of polytrauma management shifts to larger Level 1 Trauma centers, resulting in decreased exposure and training opportunities for small trauma units. Other further advantage of this course is that it allows for differences in the regional / national management of trauma patients to be incorporated into the training programme easily.

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EFFECTS OF AMBU AND LAERDAL VALVES ON VENTILATORY PARAMETERS: A COMPARATIVE STUDY

Abdo Khoury (1,2), Philippe Valero (1), Raphael Sailley (1), Rachel Martarello (1,3), Lionel Pazart (2), Fatimata Seydou Sall (1,2), Alban De Luca (1,2), Gilles Capellier (1)

1. Department of Emergency Medicine & Critical Care, University of Franche-Comté-Medical center, Besançon, France

2. INSERM CIC-IT 808, University of Franche-Comté-Medical center, Besançon, France

3. Home Care Division, Don Du Souffle, Besançon, France

Corresponding author: akhoury@chu-besancon.fr

Keywords: Ventilation, Ambu valve, Laerdal valve

Introduction: Airway management is an important challenge for medical and paramedical staff in emergency situations; optimizing the settings and providing good-quality ventilation remain the key issues. Bag Valve Mask

ventilation (BVM), although the mostly-worldwide-used technique for assisting respiratory-failing patients, remains the less preferred one in comparison with transport ventilators and other ventilation devices. The most widespread BVM are the Ambu® and Laerdal® devices with unidirectional valves. Our study aims to define whether there are differences in ventilation parameters according to the device used.

Materials and Methods: We carried the tests on the experimental lung model Ingmar® ASL 5000, to simulate patients with different pulmonary profiles/characteristics/parameters: normal, obstructive and restrictive. During the testing scenario, the patient ventilated spontaneously; first without any device, then after several respiratory cycles, we connected the Ambu® valve, and then the Laerdal® one. We simulated patients having a -10cmH₂O inspiratory effort, with two different respiratory frequencies: 15 bpm and 30 bpm. The collected data were the Inspiratory tidal Volume (V_tinsp), the Inspiratory and Expiratory Work, and the Peak Flow. The results are shown in table 1. Statistical study was made by Repeated Measures Analysis of Variance, a p < 0.05 is considered as relevant. Analyses were performed using SAS v9.3 (SAS Institute Inc.; Cary, NC).

Results: For all patients, even in severe dyspnea, the Laerdal® valve seems to facilitate ventilation: Normal patient V_tinsp (397.03 ml vs 388.83 ml); obstructive patient V_tinsp (70.21 ml vs 60.65 ml) and restrictive patient V_tinsp (240.96 ml vs 238.51 ml) respectively with the Laerdal® valve and the Ambu® valve at a respiratory frequency of 15 bpm, p < .0001.

The inspiratory work for all patients at 15 bpm is: normal patient (231.82 mJ vs 239.60 mJ); obstructive patient (57.18 mJ vs 48.10 mJ) and restrictive patient (157.32 mJ vs 160.54 mJ) respectively with the Laerdal® valve and the Ambu® one, p < .0001.

Discussion and conclusion: The results show that, when it comes to obstructive situations, although the Laerdal® valve ensures much better V_tinsp than the Ambu® one, the inspiratory work is lower with the Ambu® valve, which means an easier ventilation for the patient. These different results are probably due to the particular "duckbill" shape of the Laerdal® valve, which may need less inspiratory effort to open. These tests should also be done with a ventilation bag connected to the valve, in order to see whether it is possible to override these differences.

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NONINVASIVE POSITIVE PRESSURE VENTILATION (NPPV) IN BLUNT THORACIC TRAUMA

Renzo Camajori Tedeschini (1), Germana Ruggiano (2)

1. Emergency Department, Ospedale S. Giovanni D. Dio ASL 10 Florence, Florence, Italy

2. Emergency Department, Ospedale S. Maria Annunziata ASL 10 Florence, Florence, Italy

Corresponding author: germana.ruggiano@asf.toscana.it

Keywords: Non invasive ventilation, blunt thoracic trauma, respiratory failure

It is well known that patients with blunt thoracic trauma are at high risk of developing acute hypoxic respiratory failure with or without hypercapnia. Hypoxemia is due to V'/Q' mismatch and right to left blood shunt secondary to lung contusion, atelectasia, reduced ability to clear airway secretions, hemo-pneumothorax, pain.

Often these patients need orotracheal intubation and mechanical ventilation as they develop respiratory failure that doesn't respond to high FIO₂.

NPPV has a well known role in the treatment of patients with respiratory failure. The important favorable aspect of NPPV is avoiding orotracheal intubation and the consequent possible complications, specially ventilator associated pneumonia (VAP).

Recent studies have shown a possible role of NPPV in respiratory failure secondary to blunt thoracic trauma, reducing intubation rates. NPPV is a safe and effective tool to optimize gas exchange also in these patients if used early. It is of fundamental importance to start NPPV as soon as possible in blunt thoracic trauma with respiratory failure. The aim of this relation is to present a literature review and our data on NPPV in blunt thoracic trauma.

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NEUTROPHIL-LYMPHOCYTE RATIO IN MECHANICALLY VENTILATED PATIENTS

Saniye Goknil Calik (1), Mustafa Calik (2), Zerrin Defne Dundar (1), Basar Cander (1)

1. Emergency Medicine Department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

2. Thoracic Surgery Department, Konya Training and Research Hospital, Konya, Turkey

Corresponding author: zerrindefnedundar@yahoo.com

Keywords: intensive care, mechanical ventilation, neutrophil-lymphocyte ratio

Introduction: In this study, we aimed to investigate the prognostic values of neutrophil, lymphocyte and neutrophil-lymphocyte ratios measured in the complete blood count within the first 48 hours in the patients undergoing mechanical ventilation in the intensive care unit in terms of 30-day mortality.

Methods: In this prospective study, 18-year-old and older non-pregnant patients, who underwent mechanical ventilation in the critical intensive care unit between 2011-2013 due to acute respiratory failure, were included. The demographic characteristics of the patients; Glasgow coma scale scores, APACHE II and SOFA values, vital signs, the results of complete blood count, biochemistry and blood gas analyzes were recorded. Neutrophil and lymphocyte values were also recorded and neutrophil-lymphocyte ratios were calculated. Patients were divided into two

groups as survivors and non-survivors, and the differences of the parameters between the groups were examined.

Results: The study included 99 mechanically ventilated patients whose mean age was 71.73 (18-105) years. Of the patients, 56 (56.6%) were male and 43 (43.4%) were female. The patients were rated according to the data recorded within the first 48 hours and on the 30th day. When the survivors (n=37) and the non-survivors (n=62) were compared, the non-survivors had statistically significantly higher leukocyte, neutrophil and neutrophil-lymphocyte ratio values than the non-survivors (p=0.034, p=0.007 and p=0.001; respectively). Non-survivors had lower the mean arterial pressure and lymphocyte values (p=0.008 and p=0.006; respectively). In the mortality prediction of mechanical ventilation, the area under the ROC curve for neutrophil was 0.661 (0.550-0.772, p<0.008), for lymphocyte was 0.663 (0.552-0.774, p<0.007) and neutrophil-lymphocyte ratio was 0.702 (0.595-0.809, p<0.001). The sensitivity of neutrophil-lymphocyte ratio was 62% and its specificity was 84% with a cut-off value of 9.99.

Conclusion: According to our study, during the follow-up of the mechanically ventilated cases; mean arterial pressure, white blood cell, neutrophil, lymphocyte and neutrophil-lymphocyte ratio values measured within the first 48 hours are cheap and easily used parameters in predicting the prognosis.

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PROGNOSTIC VALUE OF NATRIURETIC PEPTIDES IN INTENSIVE CARE UNIT

Saniye Goknil Calik (1), Mustafa Calik (2), Zerrin Defne Dunder (1), Basar Cander (1)

1. Emergency Medicine Department, Necmettin Erbakan University Meram Faculty of Medicine, Konya, Turkey

2. Thoracic Surgery Department, Konya Training and Research Hospital, Konya, Turkey

Corresponding author: zerrindefnedundar@yahoo.com

Keywords: natriuretic peptide, ventilation, prognosis

Introduction: In this study, we aimed to investigate the relationship between the values of atrial natriuretic peptide (ANP) and C-type natriuretic peptide (CNP) measured in the first 24 hours and the disease severity and prognostic value of the patients underwent mechanical ventilation in the intensive care unit.

Methods: In this prospective study, non-pregnant patients 18 years old and older who underwent mechanical ventilation in the intensive care unit between 2011-2013 due to acute respiratory failure were included. The demographic characteristics of the patients; GCS, APACHE II and SOFA values, vital signs, complete blood count, biochemistry and blood gas studies were recorded. ANP and CNP values were measured. Patients were divided into

two groups as survivors and non-survivors, and the differences between the groups were analyzed.

Results: The study included 99 mechanically ventilated patients whose mean ages were 71.73 (18-105) years. Of the patients, 56 (56.6%) were male and 43 (43.4%) were female. Assessment of patients was carried out with the worst data recorded in the first 24 hours. There was no statistically significant difference between the groups in age, gender, and additional diseases (p=0.311, p=0.456 and p=0.820; respectively). When the survivors (n=75) and the non-survivors (n=24) compared, the values of GCS, APACHE II and SOFA were significantly different (p=0.031, p<0.001 and p<0.001; respectively). Other significant differences were observed in the mean arterial pressure, creatinine, FIO₂, pH and the expected increase of O₂ gradient (p = 0.028, p = 0.015, p<0.001, p<0.001 and p = 0.023; respectively). The median ANP values were 303 (46-51536) - 230 (173-7370)(p = 0.148), and the median CNP values were 88 (0-4795) - 86 (4-203)(p = 0.419), respectively in survivors and non-survivors.

Conclusion: In our study, although a slight decrease was determined between the values of ANP and CNP measured within the first 24 hours, it was not statistically significant. Further researches are required for prognostic value of ANP and CNP levels in mechanically ventilated patients.

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COMPARISON OF HYPERICUM PERFORATUM TREATMENT WITH THE OTHER EMERGENCY TREATMENT MODALITIES FOR EXPERIMENTAL CONTACT TYPE OF BURNS

Derya Cabbaroglu (1), Guclu Selahattin Kiyani (1), Meltem Songur Kodik (2), Yigit Uyanikgil (3), Emel Oyku Cetin Uyanikgil (4), Fatih Karabey (5), Turker Cavusoglu (3)

1. Emergency Department, Ege University, Medical Faculty, izmir, Turkey

2. Emergency Department, Erzurum Palandöken District Hospital, Erzurum, Turkey

3. Histology Department, Ege University, Medical Faculty, izmir, Turkey

4. Pharmaceutics Faculty, Ege University, izmir, Turkey

5. Botanic Department, Ege University, Science Faculty, izmir, Turkey

Corresponding author: songurm@yahoo.com

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Introduction – aim:

Contact type of burns are among the frequently encountered health problems in the emergency services. A well-known plant in population – sarı kantaron – with its scientific name as Hypericum Perforatum is proved scientifically for having antidepressant, antitumor, antiviral, antibacterial, anti-inflammatory, analgesic and hepatoprotective effects. In this study it's aimed to

investigate the effect of Hypericum Perforatum on the contact type of burn wounds' healing and comparison with other burn treatment modalities.

Method:

In this study 35 healthy Sprague-Dawley rats were used. After general anesthesia an area of 4x4 cm on the dorsum of the rats shaved. To establish a burn model a 4x4 cm metallic plate with a handle totaling 85 gr stamp were used. Five groups were studied as Group 1 (control) (N=7), Group 2 (burn + saline)(N=7), Group 3 (burn+topical silver sulphadiazin)(N=7), Group 4 (burn+topical Hypericum Perforatum)(N=7), Group 5 (burn+Gel only)(N=). From these experimental burn areas punch biopsies obtained at 4., 8., and 24. Hours and evaluated for wound healing findings.

Findings:

Compared to other groups, in the Hypericum Perforatum treated group hair follicle and gl. sebaceous injury were found statistically decreased($p<0.05$) and the preservation of vessels significant ($p<0.05$). An important criterion in wound healing, the collagen discoloration was found decreased at 24. hours compared to other groups ($p<0.05$). At the H. Perforatum treated group, the epidermal thickness preserved with close proximity compared to control group and this was significantly different from the other burn model groups ($P<0.05$)

Result:

In the contact type of burns the significant healing potential of topical H. Perforatum treatment compared to silver sulphadiazin observed in a histopathological dimension on acute burn injuries.

LIST OF AUTHORS

Author	Oral/Poster ID		
Aas, Lars	Po-250	Alimohammadi, Hossein	Or-086, Po-486, Po-487
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