

Overview

Oseltamivir is frequently used in the Emergency Department for management of influenzas A and B. Currently, however, the main body of literature justifying the use of Oseltamivir is based on populations of predominantly or exclusively **influenza A infections**, which it is more effective at combatting, ^{1,2} and if influenza B is mentioned, often only **virologic outcomes are recorded in favour of clinical outcomes**. A short cut review was therefore carried out to establish whether Oseltamivir leads to **faster alleviation of symptoms, fewer hospital admissions and lower mortality** in adult patients presenting to the Emergency Department with influenza B.

Clinical Scenario

A 57-year-old man presents to the Emergency Department with **fever, a non-productive cough, arthralgia and fatigue**, and a diagnosis of Influenza B infection is made following laboratory testing. He is admitted to hospital. You wonder whether commencing treatment with Oseltamivir will lead to faster alleviation of his symptoms and a shorter length of admission.

Methodology

A mini-systematic review was undertaken from January to March 2018, looking at papers published from 1946 to present. Medline and Embase were searched for papers deemed relevant to the **three-part question**:

In **1. [adult patients presenting to the Emergency Department with influenza B],**
does **2. [oseltamivir]**
lead to **3. [faster alleviation of symptoms, fewer hospital admissions and lower mortality]?**

Results were limited to **humans** and **English language** and papers that did not conduct separate analysis according to influenza strain were explicitly excluded. Altogether, 239 papers were found in Medline and 514 in Embase (753 in total) of which 751 were irrelevant or of insufficient quality. **One paper** ³ from Medline and zero from Embase were deemed directly relevant to the question. No further papers were found by scanning the references of relevant papers. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of the paper was tabulated.

Results

The paper found addressed clinical outcomes in adult patients prescribed oseltamivir with confirmed influenza B, and suggested that oseltamivir administration **shortened duration of fever** in both influenza A and B patients ($p < 0.001$). However, multiple **limitations** were noted:

Duration of fever was addressed in an **outpatient** setting

No mention of **mortality** within the paper

Reduction in fever duration is likelier a **population benefit** more than an individual benefit

Paper originates from another continent – limited **demographic relevance**

Discussion and Conclusion

The clinical bottom line is that there is evidence that oseltamivir **may reduce the duration of fever** in influenza B infections, however **no evidence that oseltamivir influences clinical outcomes** (such as mortality or length of hospital admission) in influenza B infections. More research needs to be done to address this.

References

- Dobson, J., Whitley, R.J., Pocock, S. and Monto, A.S., 2015. Oseltamivir treatment for influenza in adults: a meta-analysis of randomised controlled trials. *The Lancet* 2015; 385(9979), pp.1729-173
- Jefferson, T., Jones, M., Doshi, P., Spencer, E.A., Onakpoya, I. and Heneghan, C.J. Oseltamivir for influenza in adults and children: systematic review of clinical study reports and summary of regulatory comments. *BMJ* 2014, 348, p2545.
- Kawai N; Ikematsu H; Iwaki N; Maeda T; Satoh I; Hirotsu N; Kashiwagi S. A comparison of the effectiveness of oseltamivir for the treatment of influenza A and influenza B: a Japanese multicenter study of the 2003-2004 and 2004-2005 influenza seasons. *Clinical Infectious Diseases* 2006; 43(4): pp. 439-444.