Timing of Oseltamivir Administration and Outcomes in Hospitalized Adults With Pandemic 2009 Influenza A (H1N1) Virus Infection

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Abstract

Background: Data on the clinical effectiveness of oseltamivir in patients with pandemic 2009 influenza A(H1N1) (A[H1N1]) virus infection are scarce. We aimed to determine the effect of timing of oseltamivir administration on outcomes in hospitalized adults with A(H1N1).

Methods: Observational analysis of a prospective cohort of adults hospitalized with laboratory–confirmed A (H1N1) was performed at 13 Spanish hospitals. Time from onset of symptoms to oseltamivir administration was the independent variable. Outcomes were duration of fever, hospital length of stay (LOS), need for mechanical ventilation, and mortality during hospitalization. Multivariate logistic regression was used to describe the association between the independent variable and the outcomes.

Results: Five hundred thirty-eight hospitalized patients with A(H1N1) were studied. The median time from onset of symptoms to oseltamivir administration was 3 days (interquartile range [IQR], 2–5 days). With regard to outcomes, the median duration of fever was 2 days (IQR, 1–3 days), the median LOS was 5 days (IQR, 3–8 days), 49 patients (9.1%) underwent mechanical ventilation, and 11 patients (2%) died during hospitalization. In univariate analysis, prolonged duration of fever (above the median), prolonged LOS (above the median), need for mechanical ventilation, and mortality all increased with time to oseltamivir administration ($\chi^2$ test for trend $P = .001$, $P \leq .001$, $P = .008$, and $P = .001$, respectively). After adjustment for confounding factors, time from onset of symptoms to oseltamivir administration (+ 1-day increase) was associated with a prolongation of fever (OR, 1.10; 95% CI, 1.02–1.19), prolonged LOS (OR, 1.07; 95% CI, 1.00–1.15), and higher mortality (OR, 1.20; 95% CI, 1.06–1.35).

Conclusions: Timely oseltamivir administration has a beneficial effect on outcomes in hospitalized adults with A (H1N1), even in those who are admitted beyond 48 h after onset of symptoms.

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Footnotes

* A list of the study group members is available in e-Appendix 1.

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**Abbreviations**

- A(H1N1) pandemic 2009 influenza A(H1N1)
- IQR interquartile range
- LOS length of stay
- RT–PCR reverse-transcription polymerase chain reaction

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