

Abstract

Background: Influenza is often not recognized as an important cause of severe or fatal disease in tropical and subtropical countries in Southeast Asia. The extent to which Oseltamivir treatment may protect against a fatal outcome in severe influenza infections is not known. Thailand's National Avian Influenza Surveillance (NAIS) system affords a unique opportunity to describe the epidemiology of laboratory-confirmed severe and fatal human influenza infections.

Methodology/Principal Findings: During January 2004 through December 2006, 11,641 notifications to the NAIS were investigated in 73 of 76 Thai provinces. Clinical and demographic data and respiratory swab specimens were collected and tested by PCR for influenza. Using the NAIS database, we identified all patients with laboratory confirmed human influenza (A/H3N2, A/H1N1 and Type B) infection. A retrospective medical record review was conducted on all fatal cases with laboratory confirmed influenza and from a sample of hospitalized cases in 28 provinces. The association of underlying risk factors, Oseltamivir treatment and risk of a fatal outcome were examined. Human influenza infections were identified in 2,075 (18%) cases. Twenty-two (1%) deaths occurred including seven deaths in children less than ten years of age. Thirty-five percent of hospitalized human influenza infections had chest X-ray confirmed pneumonia. Current or former smoking; advanced age, hypertension and underlying cardiovascular, pulmonary or endocrine disease were associated with a fatal outcome from human influenza infection. Treatment with Oseltamivir was statistically associated with survival with a crude OR of .11 (95% CI: 0.04–0.30) and .13 (95% CI: 0.04–0.40) after controlling for age.

Conclusions: Severe and fatal human influenza infections were commonly identified in the NAIS designed to identify avian A/H5N1 cases. Treatment with Oseltamivir is associated with survival in hospitalized human influenza pneumonia patients.

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