Effectiveness of antiviral treatment in human influenza A(H5N1) infections: analysis of a Global Patient Registry

Authors: Adisasmito W et al.


URL: http://jid.oxfordjournals.org/content/202/8/1154.long

Comment: Influenza A (H5N1) continues to cause infections and has the potential to cause a pandemic. A total of 308 cases from 12 countries were identified in this global analysis. Overall crude survival was 43.5%; 60% of patients who received ≥1 dose of oseltamivir alone (OS+) survived, compared with 24% survival for patients who showed no evidence of having received anti-influenza antiviral treatment (OS-) (P <0.001). Multivariate modelling showed a 49% reduction in mortality with oseltamivir treatment. Oseltamivir significantly reduces mortality when started up to 6-8 days after onset of symptoms, and appears to benefit all age groups. Prompt diagnosis and early therapeutic intervention should be considered for H5N1 influenza.
Possible role of aerosol transmission in a hospital outbreak of influenza

Authors: Wong BC et al.
URL: http://cid.oxfordjournals.org/content/51/10/1176.long
Comment: Although influenza predominantly spreads through respiratory droplets, this study demonstrated the potential role of aerosol transmission of seasonal H3N2 influenza in the setting of an acute ward, with uneven airflows in different bays of the medical ward. Computational fluid dynamics modelling revealed that the dispersal pattern of aerosols originated from the index patient, who had received non-invasive ventilation for type 2 respiratory failure due to an acute exacerbation of COPD precipitated by seasonal influenza, and coincided with the bed locations of affected patients. Clinicians should pay more attention to environmental airflows and ventilation in wards when managing respiratory failure due to respiratory infections.

Outcomes of adults hospitalised with severe influenza

Authors: Lee N et al.
URL: http://thorax.bmj.com/content/65/6/510.long
Comment: This study investigated factors affecting clinical outcomes in adults hospitalised with severe seasonal influenza over 24 months (2007-2008) in two acute, general hospitals in Hong Kong. A total of 754 patients were studied (influenza A, n = 539; >75% H3N2). The mean age was 70 ± 18 years; co-morbidities and serious complications were common (61-77%) and 39 (5.2%) patients died, with pneumonia, respiratory failure and sepsis being the main causes of death. A total of 395 (52%) patients received antiviral (oseltamivir) treatment. In multivariate analysis, antiviral treatment was associated with reduced risk of death [adjusted hazard ratio (aHR) 0.27, 95% CI 0.13 to 0.55; P<0.001]. Improved survival was observed when treatment was started within 4 days of onset of symptoms. Earlier hospital discharge (aHR 1.28, 95% CI 1.04 to 1.57; P=0.019) and faster discontinuation of oxygen therapy (aHR 1.30, 95% CI 1.01 to 1.69; P=0.043) were associated with early treatment within the first 2 days. This study has shown that timely antiviral treatment for severe influenza is associated with reduced mortality and improved clinical outcomes.

Risk factors for severe illness with 2009 pandemic influenza A (H1N1) virus infection in China

Authors: Yu H et al.
URL: http://cid.oxfordjournals.org/content/52/4/457.long
Comment: This paper has also shown that early initiation of oseltamivir treatment was most beneficial, and there was an increased risk of severe disease when treatment was started more than five days after the onset of illness.
Complications and outcomes of pandemic 2009 influenza A (H1N1) virus infection in hospitalized adults: how do they differ from those in seasonal influenza?

Authors: Lee N et al.


URL: http://jid.oxfordjournals.org/content/203/12/1739.long

Comment: This prospective, observational study compared the complications and outcomes in adults hospitalized with confirmed pH1N1 infection in two acute-care general hospitals in Hong Kong between June 2009 and May 2010 (n = 382), with those in a cohort of patients with seasonal influenza (2007-2008, same hospitals; n = 754). Most patients in both cohorts developed complicated illnesses (67.8% vs 77.1%), but patients with pH1N1 influenza had higher rates of extra-pulmonary complications (23% vs 16%; P = 0.004), admission to the intensive care unit, and/or death (patients aged <35 years, 2.3% vs 0%; 35-65 years, 12.4% vs 3.2%; >65 years, 13.5% vs 8.5%; adjusted OR 2.13, 95% CI 1.25-3.62; P = 0.005). Patients who received antiviral treatment within 96 h of onset of illness had improved rates of survival (log-rank test, P <0.001). However, without timely treatment, the rate of mortality was higher with pH1N1 infection (9.0% vs 5.8% for seasonal influenza; adjusted OR 6.85, 95% CI 1.64-28.65; P = 0.008).

Viral clearance and inflammatory response patterns in adults hospitalized for pandemic 2009 influenza A(H1N1) virus pneumonia

Authors: Lee N et al.


URL: http://www.intmedpress.com/journals/avt/article.cfm?id=1722&pid=88&sType=AVT

Comment: Little is known about the virological and inflammatory responses in severe pandemic 2009 influenza A(H1N1) virus pneumonia during antiviral treatment. Patients with severe pneumonia exhibited slow viral clearance, particularly from the lower respiratory tract, during oseltamivir treatment [median (interquartile range) duration of RNA positivity after initiation of antiviral treatment was 6.0 days (3.0-8.0) in nasopharyngeal flock swabs (NPFS) and 11.0 days (7.8-14.3) in tracheal aspirates, compared with 2.0 days (1.0-3.0) in NPFS of a group with milder illness; P<0.01]. A high viral load in the lower respiratory tract, despite upper respiratory tract RNA negativity, and viral rebound after cessation of treatment, were noted in some patients. High plasma levels of IL-6, IL-8, CCL2 (monocyte chemoattractant protein-1) and soluble tumour necrosis factor receptor-1 were observed, which correlated with the extent and progression of pneumonia in hospital. As viral clearance, particularly from the lower respiratory tract, is slow during treatment, a more sustained regime of antiviral therapy appears to be warranted in patients with severe 2009 H1N1 pneumonia.
Clinical aspects of pandemic 2009 influenza A (H1N1) virus infection

Authors: Writing Committee of the WHO Consultation on Clinical Aspects of Pandemic (H1N1) 2009 Influenza, Bautista E et al.


Comment: An excellent review of the clinical features, laboratory and treatment aspects related to the pandemic 2009 influenza (H1N1) infection.

Corticosteroid treatment in critically ill patients with pandemic influenza A/H1N1 2009 infection: analytic strategy using propensity scores

Authors: Kim SH et al.

Reference: Am J Respir Crit Care Med 2011; 183; 1207-14.

URL: http://ajrccm.atsjournals.org/cgi/content/full/183/9/1207

Comment: Systemic corticosteroids are often prescribed for ARDS due to severe viral pneumonia. These two studies provide no evidence of a beneficial effect of corticosteroids in patients with severe pH1N1 influenza pneumonia. Brun-Buisson et al. have shown that very early corticosteroid therapy in ARDS patients may be harmful, whereas in a Korean study, a higher 90-day mortality was noted in corticosteroid treated critically ill patients with pH1N1 infection, compared with a group that did not receive corticosteroids.

Early corticosteroids in severe influenza A/H1N1 pneumonia and acute respiratory distress syndrome

Authors: Brun-Buisson C et al.


URL: http://ajrccm.atsjournals.org/cgi/content/full/183/9/1200

Comment: Systemic corticosteroids are often prescribed for ARDS due to severe viral pneumonia. These two studies provide no evidence of a beneficial effect of corticosteroids in patients with severe pH1N1 influenza pneumonia. Brun-Buisson et al. have shown that very early corticosteroid therapy in ARDS patients may be harmful, whereas in a Korean study, a higher 90-day mortality was noted in corticosteroid treated critically ill patients with pH1N1 infection, compared with a group that did not receive corticosteroids.

Oseltamivir ring prophylaxis for containment of 2009 H1N1 influenza outbreaks

Authors: Lee VJ et al.


URL: http://www.nejm.org/doi/full/10.1056/NEJMoa0908482#t=article

Comment: Although antiviral “ring chemoprophylaxis” strategies, aimed at geographically targeted containment by means of prophylaxis, were predicted by mathematical models to be effective, data are needed to document their actual effectiveness during a pandemic. Oseltamivir ring chemoprophylaxis, together with prompt identification and isolation of infected personnel, was effective in reducing the impact of outbreaks of 2009 H1N1 influenza in semi-closed settings in Singapore.
**Convalescent plasma treatment reduced mortality in patients with severe pandemic influenza A (H1N1) 2009 virus infection**

**Authors:** Hung IF et al.


**URL:** [http://cid.oxfordjournals.org/content/52/4/447.long](http://cid.oxfordjournals.org/content/52/4/447.long)

**Comment:** Experience from treating patients with Spanish influenza and influenza A (H5N1) suggested that convalescent plasma therapy might be beneficial. Ninety-three patients with severe H1N1 2009 infection requiring intensive care were recruited for this study. Twenty patients (21.5%) received plasma treatment. Treatment of severe H1N1 2009 infection with convalescent plasma reduced respiratory tract viral load, serum cytokine responses, and mortality.

**Safety of influenza A (H1N1) vaccine in postmarketing surveillance in China**

**Authors:** Liang XF et al.


**Comment:** In many countries, vaccine uptake during the 2009 H1N1 influenza pandemic was low, for fear of the development of severe adverse effects. In China, a total of 89.6 million doses of vaccine were administered from September 21, 2009 through March 21, 2010. A total of 6552 of the 8067 reported adverse events (81.2%; rate 73.1 per million doses) were verified as vaccine reactions; 1083 of the 8067 reported adverse events (13.4%; rate 12.1 per million doses) were rare and more serious, as compared with common, minor events, and most of these (1050) were allergic reactions. Eleven cases of Guillain–Barré syndrome were reported, a rate of 0.1 per million doses, which is lower than the background rate in China. No pattern of adverse events that would be of concern was observed after the administration of influenza A (H1N1) vaccine, and nor was there evidence of an increased risk of Guillain–Barré syndrome.