

Human influenza A/H5N1 infection in China

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Cases with avian influenza A(H5N1) infection in China as those happened in other regions, were characterized as rapid progression from fever and cough to lower respiratory disease, including pneumonia, even acute respiratory distress syndrome (ARDS).

26 cases were totally collected through surveillance in 12 provinces throughout the country. 24 cases of them were infected by clade 2.3.4 H5N1 in southern China and two cases of clade 2.2 H5N1 from the northern part of the country.

Clinically speaking, at the onset of illness, 92% of patients were showed fever and 58% had cough. At hospital admission, most of them had tachypnea or dyspnea after the onset of illness. Some patients had or developed diarrhea at some point during their illness. Chest radiographs at the time of admission showed either unilateral infiltrates or bilateral infiltrates, but nearly all of them showed rapid progression to bilateral pneumonia during hospitalization. The clinical complications included ARDS in 81%, cardiac failure in 50%, elevated aminotransaminases in 43% and renal dysfunction in 17%.

The peripheral complete blood count of the H5N1 patients showed leukopenia, lymphopenia and moderate thrombocytopenia at admission increased significantly during hospitalization. More than half of H5N1 patients showed elevated levels of creatine kinase, creatine phosphokinase isoenzymes, lactic dehydrogenase and plasma glucose concentration at admission. A similar percentage had decreased albumin levels after hospitalization.

Regarding to the clinical management, most of patients were accepted with antibiotics and corticosteroids. Patients with respiratory failure should be managed with invasive mechanical ventilation. Eight patients were administrated with oseltamivir (tamiflu), and six of them were survived. Two of four children who were given late antiviral treatment died. Both of the survived children were treated with either amantadine or rimantadine. Both of the children who died were treated with oseltamivir.

Convalescent plasma obtained from a fully-recovered adult who had H5N1 was administered to two critically ill patients. Both patients showed improvement after receiving the plasma, and eventually fully recovered. Both patients also had been treated with oseltamivir.

For prognosis, more than half (65%) of cases were fatal. Bivariate analysis revealed that patients who died had a lower median platelet count, higher median peak lactic dehydrogenase, higher percentage of acute respiratory distress syndrome and more frequent cardiac failure than patients with nonfatal cases. Therefore, early diagnosis, early treatment with antivirals may be the key to surviving H5N1 infection.