

Human H5N6 Influenza Virus Infection: New Disease Outbreak

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Emerging influenza infection becomes the global health concern. Within the past few years, there were many new emerging cross species zoonoses, especially for new emerging influenza infections.

Of several new influenza infections, H5N6 influenza is a new human infection caused by bird flu. This infection has already infected 3 human cases since its first outbreak. Here, the author briefly summarizes this new human zoonosis.

Emerging influenza infection becomes the global health concern. Within the past few years, there were many new emerging cross species zoonoses, especially for new emerging influenza infections (1). Basically, influenza viruses can infect both animal and human beings. Due to the high genetic instability within the molecule of the virus, the mutation can be expected. In case that sense mutation occurs, the chance of cross species infection may be possible (2, 3). However, as noted by Mahy and Brown, "the factors which influence the ability of each infectious agent to effectively across the species barrier and infect new cells and populations are poorly understood (3)" and this is the reason why the medical scientist has to study any new emerging infections in depth. Gathering information is required for appropriate diagnosis and treatment of the new disease.

Of several new influenza infections, H5N6 influenza is a new human infection caused by bird flu. This new human infection was firstly reported in China and becomes the present concern in medical society (4, 5). There are few reports on this topic. To be updated, this infection has already infected 3 human cases since its first outbreak. Here, the author briefly summarizes this new human zoonosis.

In May 2014, the first human H5N6 influenza infection was firstly reported (4). The first case was a fatal case of Chinese old man with severe pneumonia. The second case was also a Chinese who had the similar clinical features and clinical course to the first case. The third case was reported in February 2015. The last case also

died from infection as well. It can be concluded that all cases had severe respiratory tract infection with rapid progression of illness to pneumonia that ended with death. The identified risk factor is "being exposed to dead poultry" and the local Chinese center of disease control (CDC) suggests for the avoidance of poultry contact.

The occurrence of the new human infection is believed to be due to emerging of a new virus that has the ability to cross species from avian species to human beings. Indeed, the genetic reassortment of avian influenza virus in China was also reported at the time of emerging of the new human H5N6 influenza infection (5-7) and this can confirm the emerging problem in China. Bi et al. found that "H5N6 viruses contained a T160A substitution in the Hemagglutinin (HA) protein and an 11-amino acid-deletion in the Neuraminidase (NA) stalk, which maybe helpful in enhancing the viral affinity for human-like receptors, and virulence in mammal (6)." At the same period, the new mutated reassorted virus was also observed in Laos implying the existence of the problematic strain in the South China and Indochina area (7).

Focusing on the diagnosis and management of the disease, the diagnosis of the new H5N6 influenza usually requires special molecular diagnosis. For the treatment, the standard oseltamivir has been used in all infected cases, but it seems not successful. It is a big problem for the medical scientists to find the new drug that is effective against the new H5N6 influenza virus. As it becomes a new human disease, urgent need for research and development on diagnostic tool and drug is warranted (8). Focusing on the vaccine, there is still no human vaccine. However, the vaccine is available for avian species (9).

As a new cross species infection, human H5N6 influenza infection becomes a new focus in medical society. The disease is usually severe. At present, there are only a few case reports from China. However, due to the existence of the new virus in circulation, it is required to perform a closed surveillance for the disease.

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