High Severity and Fatality of Human Infections With Avian Influenza A(H7N9) Infection in China

Severe infection by a novel influenza virus, distinct from the circulating human influenza A virus, in humans usually heralds a sporadic pattern of severe human infection or an influenza pandemic [1]. Accordingly, the discovery of the novel avian influenza A(H7N9) virus is of great public health significance [2]. Because this virus has not been detected previously in humans or in animals, many urgent questions and global public health concerns need to be addressed [3]. Study of the early cases could provide key
Severity of avian influenza A (H7N9) virus infection in humans. A, Severity of cases upon diagnosis; B, Severity of cases according to age.

Figure 1.

information for assessing the severity and pandemic potential of this condition at 1 month since the first identification of H7N9 infection. Therefore, we examined the clinical features of this condition and compared them with those of H5N1, H7N7, and 2009 H1N1 infection.

Between February and 30 April 2013, 126 H7N9 infection cases were confirmed, and 122 with available information were analyzed. The median patient age was 61.5 years (range, 4–91 years); 2.46% of patients were aged <18 years and 43.4% were >65 years; 69.67% of patients were male. At the time of confirmed diagnosis, 34 patients (27.64%) were stable, 59 (47.97%) were severely ill, 20 (16.26%) were critically ill, and 10 (8.13%) were dead (Figure 1). Thus, >70% of patients were at least severely ill at confirmed diagnosis. At a median of 13 days after symptom onset, 24 (19.60%) patients had died, 75 were still hospitalized for treatment, and only 26 had been discharged after recovery. None of the confirmed cases were epidemiologically related, and 1367 individuals in close contact with 71 patients with available information were negative for H7N9 virus infection.

Compared with H5N1, H7N7, and H1N1 infection, H7N9 infection showed some unique characteristics. Similar to seasonal influenza, H7N9 virus infection is predominantly seen in older individuals, whereas H5N1 and H1N1 infection is predominantly seen in younger individuals [4]. However, severity of illness was similar to that for H5N1 infection. The case-fatality rate was significantly higher than that for previous influenza pandemics (range, 0.1%–2.5%) but lower than that for H5N1 infection (60%) [5]. Limited or sustained transmission was not noted on observation of a large number of individuals in close contact with patients. Thus, our findings suggest that H7N9 infection could cause severe illness and be fatal in humans, but transmission due to contact might not be a major concern. Although the possibility of a H7N9 pandemic is low, it cannot be ruled out at present.

Notes

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