Dynamics of clinical symptoms in patients with pandemic influenza A (H1N1)

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Abstract

We evaluated the dynamics of clinical symptoms of 2009 pandemic influenza A (H1N1) using a four-point scale sheet. The most frequent symptoms were fever and cough. The sum of symptom score was high during the first 4 days. Systemic symptoms peaked earlier, by day 2, and resolved faster than upper respiratory symptoms and lower respiratory symptoms after oseltamivir treatment. The lower respiratory symptoms resolved slowly over 2 weeks. The 2009 pandemic influenza A (H1N1) virus might involve primarily lower respiratory tract and could be the main cause of pneumonia.

Keywords: Dynamic, influenza, pandemic, symptom

Original Submission: 30 October 2009; **Accepted:** 4 November 2009
Editor: D. Raoult

Clin Microbiol Infect

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The clinical spectrum of 2009 pandemic influenza A virus infection is still being delineated, and both self-limited illness and severe outcomes, including respiratory failure and death, have been observed. The most frequently reported symptoms were cough and sore throat. Nausea, diarrhoea and dyspnoea have been less frequently reported but are still common [1,2].

The 2009 H1N1 influenza was confirmed by means of a PCR assay. The PCR was initially conducted in the reference laboratory at the South Korean National Institute of Health and later, as the number of patients dramatically increased locally, at Chonbuk National University Hospital.

Upper respiratory symptoms were defined as rhinorrhoea, sore throat and nasal congestion. Lower respiratory symptoms (LRS) were defined as cough and dyspnoea. Systemic symptoms were defined as subjective fever, headache and myalgia. Gastrointestinal symptoms were defined as nausea, vomiting and diarrhoea [3]. The symptoms score was average, in the range 0–3. All subjects were asked to complete a daily log at approximately the same time every morning to document the severity of their influenza-related symptoms on a four-point scale sheet [4].

During the evaluation period, 239 patients were diagnosed with pandemic influenza A infection. Among them, 118 patients were admitted to the hospital and the remaining 121 were given oseltamivir and sent home to rest. Among the 118 patients, 85 patients (≥9 years old), who filled out the symptoms score completely, were analysed for the study. Of the 85 patients studied, 57 (67.1%) were male. The mean age, hospital stay and interval from the onset of symptoms to oseltamivir administration were 23.4 ± 14.3 years, 5.7 ± 1.5 days and 2.3 ± 1.4 days, respectively. Among the clinical manifestations, fever (91.9%) and cough (91.9%) were the most frequent, followed by sore throat (69.8%), rhinorrhoea (64.0%), headache (60.5%), nasal congestion (55.8%), myalgia (43.2%), diarrhoea (31.4%), nausea (24.4%), dyspnoea (22.1%) and vomiting (15.1%). The duration of cough was the longest, followed by myalgia and sore throat (Fig. 1). Regarding the severity of symptoms, systemic symptoms peaked the earliest (by day 2) and resolved faster than LRS and upper respiratory symptoms (Fig. 2). The LRS resolved slowly over many days. The gastrointestinal symptoms were mild and short-lived.

The highly pathogenic avian H5N1 viruses replicate mainly in the lower respiratory tract of humans and cause severe pneumonia [5]. WHO warned that small subsets of patients with pandemic influenza virus infection could rapidly develop very severe progressive pneumonia [6]. Even with the administration of oseltamivir, the LRS score decreased slowly. This finding implies that infection with the pandemic H1N1 virus involves primarily the lower respiratory tract, as does the H5N1 infection. Risk groups with any type of chronic lung disease should be advised to do their best to protect themselves from the pandemic influenza virus.

Transparency Declaration

The authors declare no conflicting interests.

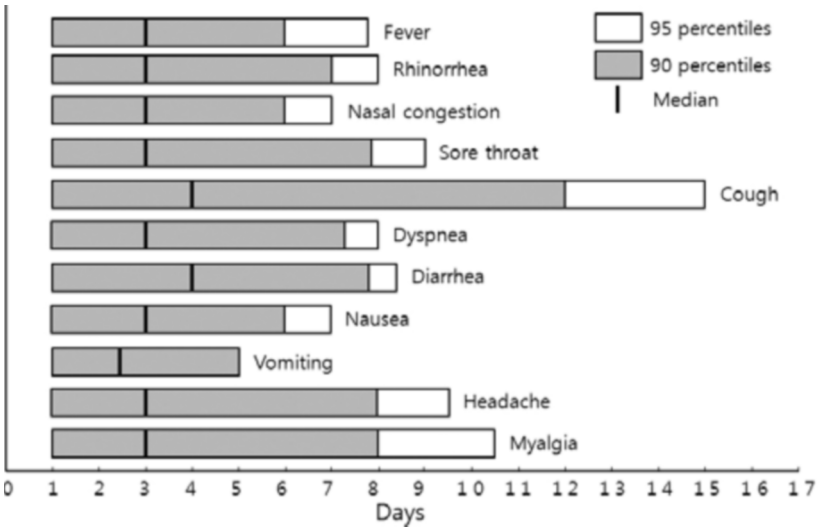

FIG. 1. The duration of clinical symptoms in patients infected with 2009 pandemic influenza A (H1N1). The bold vertical lines mean median duration of clinical symptoms.

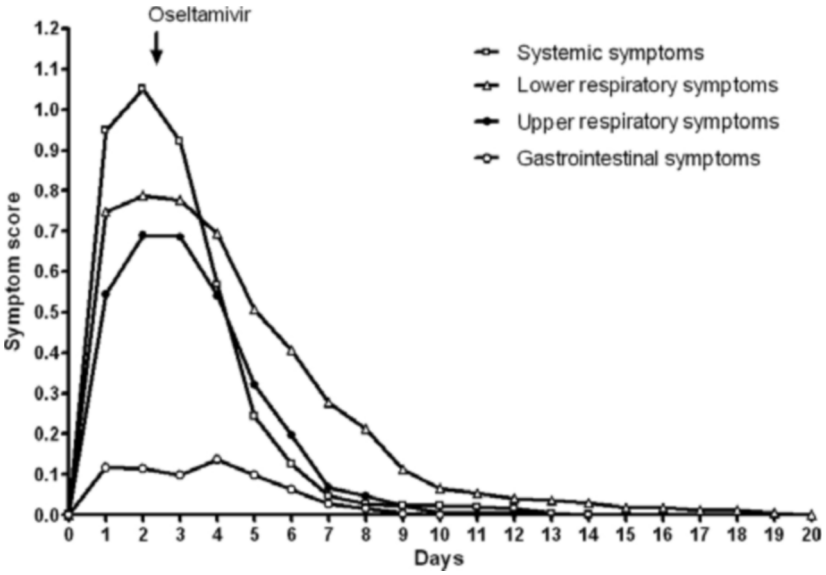

FIG. 2. The dynamics of clinical symptoms in patients infected with 2009 pandemic influenza A (H1N1).

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