

Letter to Editor

Mortality due to H1N1 Influenza in Cases Registered at the Autopsy Halls of Kahrizak, Tehran



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Dear Editor

H1N1 swine flu is an acute disease that infects the upper respiratory tract and can cause inflammation of the upper respiratory tract, trachea, and possibly the lower respiratory tract.

The known course for H1N1 swine flu is varied from one to four days, on average for most people about two days, but in some cases, it can be up to seven days [1]. The acute symptoms of uncomplicated infections last for three to seven days and are usually limited to healthy individuals, but the weakness and cough may persist for up to two weeks in some patients with chronic lung disease, heart disease, and other individuals [2]. Influenza viruses are more severe than others in the subgroup compared to pandemic histories and their genetic characteristics. For example, the H1N1 flu in 1918 affected about 675,000 people and was much more severe than the 2009 H1N1 flu. Both types of viruses are considered to be epidemics because they circulate worldwide [3]. In influenza cases that have comorbidity with a severe condition, thrombocytopenia, and leukopenia are found to be directly related to the mortality of patients [4]. It is imperative that epidemics be promptly diagnosed with the help of common symptoms and that high-risk groups are identified to minimize mortality. All the deceased patients

(64 cases in 2019 and nine cases in 2018) who had H1N1 influenza were included using census sampling of medical records that existed in the *Forensic Medicine Organization*. The Mean age of patients in 2019 and 2018 was 44.38 ± 17.08 and 40.44 ± 24.46 years, respectively ($P=0.541$). In 2019, the mortality rate of influenza was 7.11 times higher compared to 2018. In both groups, the male gender was more frequent (61.9% in 2019 and 88.9% in 2018). The majority of patients (40.5%) were in the age range of 21-40 years. Also, 26 patients (35.6%) were classified as obese, and 21 patients (28.8%) as overweight. The majority of signs (38.4%) lasted by four days (1-4 days). Approximately, 70% did not take any antiviral drug and the antiviral drug was used in 30% of cases. The frequency of comorbidities and signs was approximately identical in both groups without a significant difference. We found that H1N1 infection involves middle-aged people more due to being exposed to society. Obese or overweight patients have severe symptoms and bad prognoses following H1N1 infection. The observations were reported at two macroscopic and microscopic levels. Macroscopic reports were anthracosis of lung brown tissue, hyperemia, stiff liver, increased pericardial adipose tissue, and excessive right atrial volume. Also, a small part of the liver was soft with green color. Microscopic reports were pulmonary hemorrhagic edema, endocarditis, bronchopneumonia, hepatic

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steatosis, sinusitis, hepatic cholestasis, the spread of malignant squamous cell carcinoma, interstitial fibrosis, fibrous sclerosis of mitral valves, massive myocardial infarction, inflammation of brain vessel, and hypoxia of cerebellar Purkinje cells. Although influenza infection is not limited to any age group, the effects of the infection are more severe in older patients [5]. Excellent vaccines are available to prevent this infection. As the virus changes annually, annual vaccination with an increase in influenza virus is important to maintain a person's level of protection especially in elder people [6]. It should be noted that due to the overlap of symptoms in COVID-19 infection with influenza infection, justifying based on the clinical manifestation cannot be accurate; thus, using specific laboratory tests can be helpful in this regard [7-15].

Ethical Considerations

Compliance with ethical guidelines

Human rights were respected in accordance with the Helsinki Declaration 1975, as revised in 1983. The informed consent was taken from the patients. The study was approved by Ethics Committee of [Legal Medicine Research Center](#) (Code: IR.LMO.REC.1399.018).

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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