

Influenza A (H1N1): Now is it a Thing of the Past?

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Influenza is one of the most common respiratory infections occurring in humans. Influenza A (H1N1) strain caused a deadly pandemic in 2009 with clinical presentations varying from mild respiratory distress to patients requiring ventilatory support and extracorporeal membrane oxygenation (ECMO) and other organ supports.¹ The symptoms may be self-limiting but almost 66% of patients had shown some radiological features of pneumonia.² Reverse transcriptase–polymerase chain reaction (RT–PCR) test is the only way to diagnose H1N1 pneumonia as there are no classical radiological features or clinical features and this sometimes delays the diagnosis. The treatment revolves around basic respiratory care like the application of non-invasive ventilation (NIV) or high-flow nasal oxygen (HFNO) and in worse scenarios, patients require mechanical ventilation with the occasional help of rescue therapies. The utility of antiviral agent, oseltamivir has been questioned and the maximum benefit has been seen if started within 48 hours of clinical symptoms.^{3,4}

India has seen various variants since 2009 and the disease itself has a waxing and waning presentation every alternate year. The exact case fatality rate is still unknown but most of the earlier data suggests a mortality in the range of 15–40%. In the last couple of years, the impact of H1N1 has diminished and the Indian epidemiological data has also not been represented in the literature.

In the current issue of the *Indian Journal of Critical Care Medicine*, Vinay et al.⁵ looked at the clinical-epidemiological characteristics of 154 confirmed H1N1 infections during the 4 months period from October 2018 to January 2019. The mean age of the patients was 58.2 ± 15.6 years and the initial presentation of symptoms was at 4 ± 2.1 days. Out of 154 patients, 39 patients (25.3%) required only oxygen devices, 51 patients (33.1%) required NIV/HFNO and 64 patients (41.6%) required mechanical ventilation. Extracorporeal membrane oxygenation was initiated in 4 patients (6.3%) of all ventilated patients. Acute kidney injury was present in 49 patients (29.3%) during the course of illness, out of which 25 patients required renal replacement therapy. The mortality was 20.1% and the mean time to death after ICU admission was 9 ± 8.7 days with patients more than 50 years having higher mortality.

The Indian data on H1N1 Influenza A infection is scanty with sporadic case series or single-center experiences. Since 2009, the virus has undergone mutations and in 2015, the Indian subcontinent saw the worse of it. As there is no specific medication, the entire management revolves around respiratory support. Okur et al.⁶ in 2013 presented data from Turkey and found that the infection was more lethal in the elderly age-group. They did give Oseltamivir to all patients for 5 days along with antibiotics. Mechanical ventilation was required for nine patients out of which six patients died.

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Development of ARDS was non-specific and even occurred in previously healthy individuals.

Recently, Hussain et al.⁷ from our neighboring country, Pakistan published their retrospective data and found that the mean age of patients was 53.5 years with the mean duration of illness being 5 days. A total of 19% of patients succumbed to death. The modality of respiratory support mentioned is NIV and mechanical ventilation. The mortality was 47.3% in the ventilated group.

The presence of various strains in various parts of the world makes it even more difficult to identify the infection. In the United States, the predominant strain during 2017 was H3N2 whereas in Asia it was H1N1.⁸

Influenza presents as the common flu with symptoms as mild as running nose to coughing to as severe as respiratory distress and hypotension. The severity of the illness determines that can we detect influenza virus in the respiratory sample.⁹ The geographical areas with cooler temperatures and higher humidity are more prone to influenza infections and probably that is the reason we saw higher incidences in Maharashtra and South India.¹⁰ The epidemics due to H3N2 strains are associated with higher mortality as compared to other strains. Nowadays, we have the facility and the testing kits available to identify this lethal strain in India.

Should we be really worried about Influenza A infection now? Has COVID-19 changed the epidemiology of respiratory illnesses? The world has seen four large pandemics due to the influenza in last 103 years with major case fatalities. Although COVID-19 appears to be a severe pandemic, the fatality rate is much lower than what is seen every year due to Influenza.¹¹ The H5N1 strain which is more prevalent in the United States has a far more lethal and devastating impact. The emergence of the COVID-19 pandemic has seen a global reduction of Influenza A illness by 99% but with travel restrictions being removed and nearing of the winter season, one can expect that a new seasonal strain of influenza will appear and give rise to the epidemic scenario.

Vaccination programs and community education about wearing masks may help to reduce the spread of a lethal strain. The vaccination composition is changed every year following the review of antigenic characteristics of the present strain but the evidence that it will protect us from getting infected is less promising. The epidemiological data of our own country may help hospitals and states to define the policy and identify high-risk populations during such infections. The lessons learned from COVID-19 pandemic should not be forgotten and the availability of adequate oxygen, medications, and other supportive gear should be ascertained. One would appreciate it if we had more region-specific data on these deadly viral infections so that we can fight them well, rather than crippling us.

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