

State of the Globe: The H1N1 Threat Continues to Loom the Planet

In March 2009, a novel H1N1 virus was detected, which was a reassortant between previously circulating swine viruses and a Eurasian swine virus.^[1] In the first 2 weeks in April, cases of infection with an untypable influenza A virus began to be identified in Mexico and Southern California. Although the exact sequence of events is uncertain, by the 3rd week of April, it was established that the illness resulted from a triple recombination of human, avian, and swine influenza viruses; the virus has been found to be H1N1. This novel virus contains neuraminidase and matrix genes from the Eurasian virus and is also referred to as swine origin influenza virus (S-OIV). S-OIV now has the ability to spread efficiently from person to person and has led to a pandemic, which, as of June 15, 2009, has resulted in more than 35,900 laboratory-confirmed cases in 76 countries.^[2,3]

Influenza A viruses are important human and animal pathogens and are among the leading infectious causes of human deaths, globally. Influenza pandemics have been emerging for over a millennium, and we will undoubtedly see novel influenza viruses continue to evolve for efficient human adaptation and pandemic spread in the future.^[4] What we need is better research aimed at preventing and controlling influenza by elucidating fundamental viral mechanisms, so we can be able to prevent pandemics and epidemics. Otherwise, influenza will continue to wreak havoc for the foreseeable future at the cost of countless lives.^[4]

Patel *et al.*,^[5] in the current issue of JGID, highlights the clinical outcome of novel H1N1-infected patient who hospitalized in one of the hospital of Gujarat state. They reported retrospective analysis of hospitalized patient who has laboratory confirmed H1N1. There results are generalizable to the greater Indian population because dataset obtained from one of the best hospital with significant proportion of patient coming from various parts of Gujarat state. They were able to demonstrate through multivariate analysis regarding independent predictor

of mortality which is almost correlated with Western Hemisphere. Although there study has high mortality which is due to sicker patient need hospitalization with bilateral pulmonary opacities necessitating ventilator support. This results are comparable to U.S. study, Jain *et al.*, studied 272 patients who were hospitalized with 2009 H1N1 influenza; of these patients, 25% required intensive care unit (ICU) care, and 19 of the 67 patients who were admitted to an ICU (28%) died.^[6] The clinical symptomatology appears to be similar to that of seasonal influenza, perhaps with more frequent vomiting and diarrhea.

Prevention and control measures for S-OIV are based on our understanding of seasonal influenza. The health care workers who provide direct care for patients with known or suspected S-OIV infection should observe contact and droplet precautions, including the use of gowns, gloves, eye protection, face masks, and fit-tested, disposable N95 respirators.^[7] In addition, patients with confirmed or suspected S-OIV infection should be placed in a single-patient room with the door kept closed and airborne-infection isolation rooms with negative-pressure handling should be used whenever an aerosol-generating procedure is being performed.^[7] Frequent hand washing with soap and water may reduce the risk of infection and transmission. My opinion in developing nations hand washing is most important measures, where in rural area all other measures are not available. India is growing in medical tourism from all over globe and need to pay more attention on these preventive aspects of infections control.

Apart from infection control measures, annual influenza vaccination remains the best method for preventing influenza and its associated complications.^[6] Treatment with influenza antiviral medications is recommended as early as possible for patients with confirmed or suspected influenza (either seasonal influenza or variant influenza infection) who have severe, complicated, or progressive illness; who require hospitalization; or who are at higher risk for influenza-related complications.

Clinician should consider influenza, including 2009 H1N1, variant H3N2, and Influenza B in differential diagnosis of patients presenting with fever and respiratory illness or pneumonia. Empirical antiviral treatment for hospitalized patients with suspected influenza or pneumonia and for outpatients who have underlying medical conditions or who are pregnant should be considered.^[6] To prevent

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nosocomial cases, strict infection-control measures are needed as well.

As the 2013–2014 flu season is going to emerge, continued investigation is needed to better define the clinical spectrum of disease and risk factor for an increased severity of illness. Global internet monitoring and surveillance are needed for better control and treatment of this disease. Although there was an official declaration to the end of the 2009 H1N1 pandemic by World Health Organization; internationally 2009 H1N1 viruses and seasonal influenza viruses are cocirculating in many parts of the world. It is likely that the 2009 H1N1 virus will continue to loom the planet, like a regular seasonal influenza virus.

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