EDITORIAL

Swine Flu: Prevention to Pandemic

Preeti Padda

EIS Office, Cohort 3, National Centre of Disease Control, 22, Shyamnath Marg Civil Lines, New Delhi

Abstract | Introduction | Methodology | Results | Conclusion | References | Citation | Tables / Figures

Corresponding Author

Address for Correspondence: Preeti Padda, EIS Office, Cohort 3, National Centre of Disease Control, 22, Shyamnath Marg Civil Lines, New Delhi.
E Mail ID:drpreetipadda@gmail.com

Citation

Padda P. Swine Flu: Prevention to Pandemic. Indian J Comm Health. 2015; 27, 1: 01-02.
Source of Funding : Nil **Conflict of Interest:** None declared

Article Cycle

Submission: 07/03/2015; **Revision:** 08/03/2015; **Acceptance:** 22/03/2015; **Publication:** 31/03/2015

Swine flu, also known as swine influenza, pig influenza, hog flu and pig flu, is a respiratory disease caused by viruses (influenza viruses) that infect the respiratory tract of pigs, resulting in nasal secretions, a barking cough, decreased appetite, and listless behaviour. Swine flu produces most of the same symptoms in pigs as human flu produces in people. Mostly people who are closely associated with pigs (for example, pork processors and farmers) acquire the infection and similarly pigs get infected occasionally human flu infection. The cross-species infections (swine virus to man; human flu virus to pigs) have always been confined to local areas and have not spread across borders in either pigs or humans. Unfortunately, this cross-species situation with influenza viruses has had the potential to change and cause epidemics and pandemics. Most recent pandemic has been reported in 2009, where "swine flu" strain, first seen in Mexico, was termed as H1N1 as it was mainly infecting people and exhibited two main surface antigens, H1 (hemagglutinin type 1) and N1 (neuraminidase type1). This unique eight RNA strands from novel H1N1 flu have one strand derived from human flu strains, two from avian (bird) strains, and five from swine strains. Since then it has been infecting people here and there. India is reeling under the worst swine flu outbreak in half a decade. The main reason suggested by Massachusetts Institute of Technology (MIT) are mutations among the existing virus which makes it more dangerous than the previously circulating strains of the virus. These claims have been nullified by the National Institute of Virology, Pune as they have reported that sequence of H1N1 A virus has shown no mutations when compared with the original sequence of 2009 virus. A genetic analysis of the swine flu virus done by World Health Organization (WHO) also did not report any resistance to Oseltamivir, the medicine prescribed for treatment of swine flu.

Since the outbreak of H1N1 earlier this year, there have been 31,974 cases across India and 1,895 deaths. Gujarat is the worst-hit state, with 410 deaths, followed by Rajasthan. The cases have increased from the previous years but deaths rates have subsequently declined (23.3% in 2014 to 5.9% in 2015).

As the above figures show India is facing an unprecedented spike in cases of swine flu, and the load of testing has tremendously increased on the laboratories. To decrease this load the Health Ministry has issued guidelines not to test flu patients for H1N1, unless essential. This would mean that these patients would still be treated for the disease, but would not add to the already explosive swine flu statistics across the country. Along with the aim of decreasing the load on laboratories as well as prevention and control of the influenza outbreak following guidelines for screening, testing and isolation were formulated and revised (11.02.2015).

As per the guidelines, all the patients who have flu like symptoms should be screened at private or government health facilities or examined by a doctor and will be categorized into three categories i.e. A, B and C (depending on severity).

Category-A: Patients with mild fever plus cough/ sore throat with or without bodyache, headache, diarrhoea and vomiting were categorized as category A. These patients do not require testing for H1N1 and should be treated as per symptomology and monitored as well as reassessed at 24-48 hours.

Oseltamivir is not required in these patients. Patients should confine themselves at home.

Category-B: Patients with all the signs and symptoms of category A along with high grade fever and severe sore throat were categorized as Category B. These patients require isolation as well as Oseltamivir. Any patient who has symptoms of category A but belongs to high risk population (for example, children with predisposing risk factors; pregnant women; people aged >65 years; patients with lung, heart, liver, kidney disease, blood disorders, diabetes, neurological disorders, cancer and HIV/AIDS; patients on long term steroids) will be treated with Oseltamivir and also categorized as category B patients. No testing is required and may require broad spectrum antibiotics.

Category-C: In addition to signs and symptoms of category A & B, any patient with breathlessness, chest pain, drowsiness, fall in blood pressure, hemoptysis and bluish discoloration of nails are categorized as category-C. Children with severe influenza like illness manifested by red flag signs (somnolence, high & continuous fever, inability to eat, convulsions, breathlessness and difficulty in breathing etc) as well adults where there is worsening of underlying chronic conditions are also categorized in the same category. These patients require testing, immediate hospitalization and treatment.

As the number of cases grow day by day, panic among the general public grows which is followed by increased demand of H1N1 vaccine, but it is recommended only for high risk group of health care workers working in close proximity of influenza patients (for example, those working in emergency, swine flu wards, ICU and isolation wards). The general public is encouraged to follow certain rules is they want to prevent themselves from influenza infection which are frequent washing of hands, covering nose and mouth while coughing & sneezing, stay away from crowded places as well as from people with symptoms of influenza. A further step towards containment of outbreak is provision of three layered surgical masks or N-95 respirator masks to the patients in order to prevent spread of infection to others. These masks after use should be treated like any other biomedical waste and should be disinfected with bleach after which they should be buried or burnt.

The Government of India have also increased the number of authorized laboratories for H1N1 testing as well as the stores where Oseltamivir is available.

We fully hope that with all the efforts mentioned above we are able to control the outbreak and prevent any further causalities due to influenza.

References

1. Pandemic Influenza (H1N1) 2009. CD Alert. Aug-Sept 2009; 13(2).
2. "Swine Flu India Guide: Everything you need to know to protect yourself and your family". Available at http://www.swineflu-india.org Accessed on 18.3.2015.
3. "Seasonal Influenza A H1N1: Actions taken by Ministry of health and Family Welfare, 24/2/2015." Available at http://mohfw.nic.in/showfile.php?lid=3080 Accessed on 20.3.2015.
4. "Technical Guidelines for seasonal influenza A H1N1" Available at http://mohfw.nic.in/index1.php?lang=1&level=1&sublinkid=4987&lid=3070 [Accessed on 20.3.2015]

Tables

TABLE 1 SWINE FLU CASES AND DEATHS IN INDIA (TILL 20TH MARCH, 2015)

Year	Cases	Deaths	Death Rate
2015	31,974	1,895	5.9%
2014	937	218	23.3%
2013	5,253	699	13.3%
2012	5,044	405	8%
2011	603	75	12.4%
2010	20,604	1763	8.6%
2009	27,236	981	3.6%

Source: Union Ministry of Health & Family welfare.

TABLE 2 TOP TEN STATES AFFECTED WITH SWINE FLU (TILL 20TH MARCH, 2015)

State	Reported cases	Number of deaths
Rajasthan	6,356	398
Gujarat	6,330	407
Delhi	4,137	12
Maharashtra	4,007	342
Telangana	2,140	75
Madhya Pradesh	2,069	279
Karnataka	1,801	77
Tamil Nadu	320	14
Punjab	227	53
Uttar Pradesh	165	36