

Post Exposure Management of H1N1 flu

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Abstract

Although influenza is recognized as an important cause of acute respiratory illness, little is known about the prevalence and burden of influenza in India

Key words: Post Exposure Management, H1N1 flu, H1N1 influenza viruses

H1N1 influenza viruses continued to be the predominant circulating influenza viruses. WHO declared pandemic of H1N1 on June 11, 2009 [1]. Although influenza is recognized as an important cause of acute respiratory illness, little is known about the prevalence and burden of influenza in India. 2015 Indian swine flu outbreak refers to a outbreak of the 2009 pandemic H1N1 virus in India, which is still ongoing as of March 2015 [2]. The states of Gujarat and Rajasthan are the worst affected [3]. The H1N1 virus outbreak had previously occurred India during the 2009 flu pandemic. Immediately after the emergence of pdm H1N1 in May 2009, the strain largely replaced the circulating seasonal Inf A (H1N1) and Inf A (H3N2) viruses. From 2010 onwards, the pandemic strain pdm H1N1 virus continued to circulate in India, but, along with the previously circulating influenza viruses; InfA (H3N2) and InfB, replacing completely the seasonal Inf A (H1N1) [4]. Below mentioned table shows total death due to H1N1 since 2009[5].

S.No	Year	Deaths
01	2009	981
02	2010	1763
03	2011	11
04	2012	405
05	2013	699
06	2014	218
07	2015	

Influenza illness in infants and children may present similarly to other respiratory viruses, and symptoms and presentation may be different than presentation in adults. A wide spectrum of potential influenza-related complications is possible among children. These range from mild-to-moderate complications such as otitis media, sinusitis, myositis, and febrile seizures to more severe manifestations such as myocarditis, pneumonia, encephalitis, invasive bacterial co-infection. Individuals at risk for complications include those younger than 2 or over 65 years; pregnant; or with a weakened immune system such as solid organ transplant recipients [1].

Prophylaxis is recommended for

1. Risk factors for more serious disease: pulmonary (including persistent asthma), cardiovascular, renal, hepatic, hematological (including sickle cell disease), neurologic, neuromuscular, metabolic disorders (including diabetes mellitus), Immunosuppression, including that caused by medications, asplenia, Long-term aspirin therapy
2. Vulnerable settings includes child care centres with baby rooms (under 12 months of age), special schools, aged care facilities, hospitals

Measures to decrease transmission-

1. Household transmission can be reduced by good ventilation and proper hand hygiene.
2. Cough etiquettes
3. Yearly flue vaccination
4. Isolation of flue patient in separated room
5. At least 1 meter distance should be kept between patients, as droplets can travel this distance only
6. Regular disinfection should be done
7. Staff should use well fitting surgical mask that should be change every 4 hours

Postexposure prophylaxis: Post exposure prophylaxis should be considered for contact during the *infectious period* (e.g., one day before until 7 days after the case's onset of illness). If the contact occurred more than 7 days earlier, then prophylaxis is not necessary. For pre-exposure protection, chemoprophylaxis should be given during the potential exposure period and continued for 10 days after the last known exposure to an ill confirmed case of swine-origin influenza A (H1N1) virus infection. Healthcare personnel are at an increased risk of acquiring infectious diseases like H1N1 due to their occupational exposure and infection control measures need to be undertaken to prevent them.

Examples of close contact include kissing or embracing, sharing eating or drinking utensils, physical examination, or any other contact between persons likely to result in exposure to respiratory droplets. Close contact typically does not

include activities such as walking by an infected person or sitting across from a symptomatic patient in a waiting room or office.

Antiviral medication dosing recommendations for chemoprophylaxis of H1N1 infection for infants and children

S.No	Drug	Age Group	Chemoprophylaxis (10 Days)	
01	Oseltamivir	≤ 3 months	Not recommended unless situation judged critical due to limited data on use in this age group	
		≥ 3 months	3 mg/kg/dose once per day	
		≥ 12 months	≤15 kg	30 mg once per day
			16-23 kg	45 mg once per day
			24-40kg	60 mg once per day
≥ 40kg	75 mg once per day			
02	Zanamivir	≤ 5 years	Not recommended	
		≥ 5 years	10 mg (two 5-mg inhalations) once daily	

It must be remembered that chemoprophylaxis is biggest risk factor for drug resistance. Antiviral therapy has the potential to promote or prevent the emergence of drug resistant viruses. When viral replication is blocked, no drug resistant mutants can emerge. If an antiviral drug is given after the viral population has expanded, or if the amount of drug is not sufficient to block viral replication, genomes that contain mutations will replicate. If the number of viral genomes is small, the infection may be cleared by the immune response. Chemoprophylaxis should be considered only for very high-risk household contacts like pregnant woman and severely immunocompromised [6].

In India recently a systematic laboratory-based surveillance network of influenza viruses was established, that includes sentinel surveillance sites geographically distributed in northern, central, southern, and eastern India. The surveillance network is started generating data, to better understand the circulating subtypes and seasonality in different geographic regions in India [7].

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