

SWINE FLU (H₁N₁) VIRUS, PREVENTION AND THEIR TREATMENT: A REVIEW

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ABSTRACT

Swine flu has been confirmed in a number of countries and it is spreading from human to human, which could lead to what is referred to as a pandemic flu outbreak. Pandemic flu is different from ordinary flu because it's a new flu virus that appears in humans and spreads very quickly from person to person worldwide. The World Health Organization (WHO) is closely monitoring cases of swine flu globally to see whether this virus develops into a pandemic. Because it's a new virus, no one will have immunity to it and everyone could be at risk of catching it. This includes healthy adults as well as older people, young children and those with existing medical conditions. Tamiflu (Oseltamivir) and Ralenza (Zanamivir) can treat the H₁ N₁ swine flu strain.

KEYWORDS Influenza-A, Tamiflu (Oseltamivir), Zanamivir₁

INTRODUCTION

On April 2009, the Centers for Disease Control and Prevention (CDC) identified two cases of human infection with influenza A (H₁N₁)v characterized by a unique combination of gene segments that had not been identified among human influenza A virus. Additional cases were rapidly reported leading the WHO to declare a pandemic phase level, indicating widespread human infection. This has caused widespread anxiety, especially among patients who are potentially immunocompromised and symptoms of serious systemic infection may be wrongly attributed to influenza A (H₁N₁)v.

Swine flu (swine influenza) is a respiratory disease caused by viruses (influenza viruses) that infect the respiratory tract of pigs and result in nasal secretions, a barking-like cough, decreased appetite and listless behavior. Swine flu produces most of the same symptoms in pigs as human flu produces in people.

Most cases of influenza A (H₁N₁)v currently seem to have uncomplicated influenza-like illnesses; the most common symptoms are cough and fever. Calculating the case fatality ratio related to influenza A (H₁N₁)v is highly dependent on estimates of the total number of people with the disease, which are not easy to obtain. Nevertheless, on the basis of surveillance data and mathematical modeling, the influenza A (H₁N₁)v case fatality ratio seems to be higher than that of seasonal

influenza, although it remains of the same order of magnitude. The severity and deaths associated with seasonal influenza infection result in a large part from secondary complications such as secondary bacterial pneumonia (*Streptococcus pneumoniae* or *Staphylococcus aureus*), primary viral pneumonia and exacerbation of underlying chronic conditions. Initial observation suggests that children and young adults may be more susceptible to influenza A (H₁N₁)v than older persons. It is still unclear whether the low incidence in people over 60 years of age is because of a partial immunity from former infections with H₁N₁ influenza viruses².

CLASSIFICATION

The three genera of influenza viruses that cause human flu, two also cause influenza in pigs, with influenza-A being common in pigs and influenza-C being rare. Influenza-B has not been reported in pigs. Within influenza-A and influenza-C, the strains found in pigs and humans are largely distinct, although due to reassortment there have been transfers of genes among strains crossing swine, avian and human species boundaries.³

SYMPTOMS**Typical Symptoms**

- ❖ A sudden fever - 100 degrees F or above
- ❖ A sudden cough

Other Symptoms

- ❖ Tiredness

- ❖ Chills
- ❖ Malaise
- ❖ Myalgias
- ❖ Cough and sneezing
- ❖ Headache
- ❖ Weakness and fatigue
- ❖ Aching muscles and joints
- ❖ Sore throat
- ❖ Runny nose
- ❖ Diarrhoea or stomach upset
- ❖ Loss of appetite⁵

TREATMENT, MEASUREMENT AND PREVENTION

• Treatment

Antiviral Treatments for Suspected and Confirmed cases.

Suspected Cases

Empiric antiviral treatment is recommended for any ill person suspected to have swine influenza A (H₁N₁) virus infection. Antiviral treatment with either zanamivir alone or with a combination of oseltamivir and either amantadine or remantadine should be initiated as soon as possible after the onset of symptoms. Recommended duration of treatment is five days. Antiviral doses and schedules recommended for treatment of swine influenza A (H₁N₁) virus infection are the same as those recommended for seasonal influenza.^{6,7}

Confirmed Cases

For antiviral treatment of a confirmed case of swine influenza A (H₁N₁) virus infection, either oseltamivir (Tamiflu) or zanamivir (Relenza) may be administered. Recommended duration of treatment is five days. These same antiviral should be considered for treatment of cases that test positive for influenza A but test negative for seasonal influenza viruses H₃ and H₁ by PCR.⁸

• Measures and Preventions

Keeping hands clean is the most important step to avoid getting sick and spreading the H₁N₁ virus. Wash hands with clean water and hand soap. Rub hands together to form lather. Warning, Do not give aspirin (acetylsalicylic acid) to children or teenagers who have the flu; this can cause a rare but serious illness called Reye's syndrome. Check ingredient labels on over-the-counter cold and flu medications to see if they contain aspirin.⁹ Children younger than 2 years of age should not be given over-the-counter cold medications without first speaking with a healthcare provider. The safest care for flu symptoms in children younger than 2 years of age is using a cool-mist humidifier and a suction bulb to help clear away mucus^{10,11}. Over-the-counter cold and flu medications used according to the package instructions may help lessen some symptoms such as cough and congestion.

Importantly, these medications will not lessen how infectious a person is. Check with your health care provider or pharmacist if you are taking other over-the-counter or prescription medications not related to the flu.^{12,13}

CONCLUSION

Swine flu is a new virus that the world has never seen before, it has many similarities to the past pandemics and could ultimately turn into another 1918, however unlikely that sounds at this moment in time. Since its discovery in April it has spread around the globe and has caused infections in 74 countries, but the real number will be much closer to 500000. The spread of this virus is far from over and the threat of a 2nd more severe wave in the autumn or winter has the world hanging on by a knife point. This virus could mutate and become far dangerous, current estimations calculate that 120 million people may die from this newly discovered to which we have no immunity to them. All in all this situation is likely to get worse in the next couple of months and we should now focus our efforts on helping developing countries like India and also saving as many as we can, too carry on life if an unprecedented amount of people die.

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Fig. 1 : Facemask for prevention from swine flu