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SWINE FLU: A REVIEW

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ABSTRACT

Swine Influenza (swine flu) is a respiratory disease of pigs caused by type A influenza viruses (H1N1 subtype) that causes regular outbreaks in pigs. People do not normally get swine flu, but human infections can and do happen Swine flu viruses have been reported to spread from person-to-person, but in the past, this transmission was limited and not sustained beyond three people. The 2009 swine flu outbreak (pandemic) was due to infection with the H1N1 virus and was first observed in Mexico. This infection is a kind of variant of H1N1 influenza infection. Common pneumonia symptoms like fever, cough, and sore throat; and in a fewer cases like diarrhea, vomiting, Myalgia and joint pains may become threatening to life. Currently available drugs like neuraminidase inhibitors such as Tamiflu (oseltamivir), Zanamivir like antivirals have potential and resistance problem.

KEYWORDS: Swine Flu, influenza, H1N1, myalgia & resistance.

INTRODUCTION

Swine Influenza (swine flu) is a respiratory disease of pigs caused by type A influenza viruses (H1N1 subtype) that causes regular outbreaks in pigs. Swine flu, also called pig influenza, swine influenza, hog flu and pig flu.

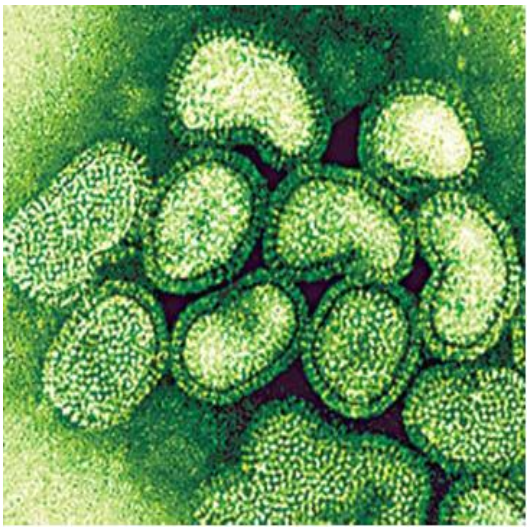
Swine influenza virus (**SIV**) or **swine-origin influenza virus** (**S-OIV**) is any strain of the influenza family of viruses that is endemic in pigs. As of 2009, the known SIV strains include influenza C and the subtypes of influenza A known as H1N1, H1N2, H2N1, H3N1, H3N2, and H2N3.

Swine influenza virus is common throughout pig populations worldwide. Transmission of the virus from pigs to humans is not common and does not always lead to human flu, often resulting only in the production of antibodies in the blood. If transmission does cause human flu, it is called zoonotic swine flu.

Swine flu is transmitted from person to person by inhalation or ingestion of droplets containing virus from people sneezing or coughing; it is not transmitted by eating cooked pork products. The newest swine flu virus that has caused swine flu is influenza A H3N2v.[1]

H1N1 Virus

The influenza virion is roughly spherical. It is an enveloped virus; the outer layer is a lipid membrane which is taken from the host cell in which the virus multiplies. Inserted into the lipid membrane are 'spikes', which are proteins – actually glycoprotein's, because they consist of protein linked to sugars – known as HA (hemagglutinin) and NA (neuraminidase). These are the proteins that determine the subtype of influenza virus (A/H1N1, for example). The HA and NA are important in the immune response against the virus; antibodies (proteins made to combat infection) against these spikes may protect against infection. The NA protein is the target of the antiviral drugs Relenza and Tamiflu. Also embedded in the lipid membrane is the M2 protein, which is the target of the antiviral adamantanes amantadine and rimantadine.[2]

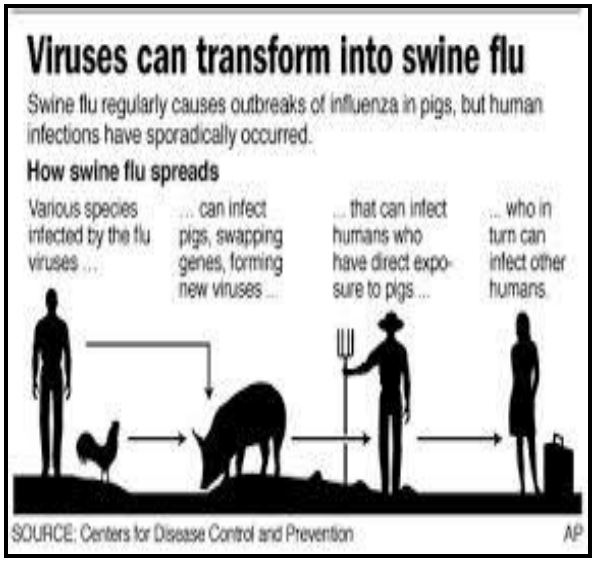


Classification

of 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.

1. Influenza C
2. Influenza A
3. Surveillance

Transmission

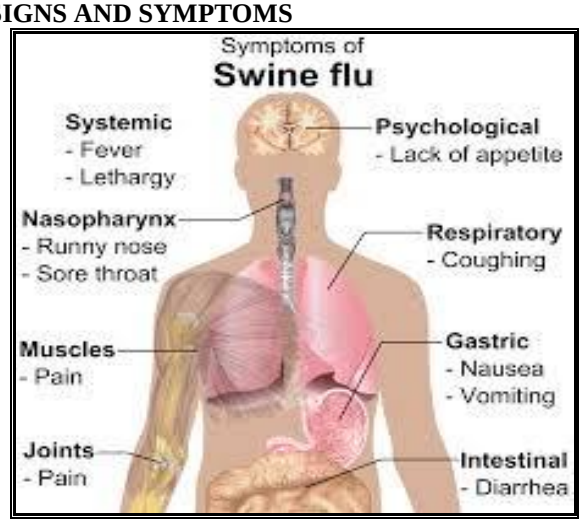


Most viruses, it enters the body through the mucous membranes - the eyes, the nose or the mouth. Swine flu is spread just like the regular seasonal flu spreads. It goes from person to person through close contact and direct touch, indirect touch, or respiratory droplets that carrying the virus. Infected person may be able to infect others beginning one day before symptoms develop and up to seven or more days after becoming sick. Infected people may be able to infect others beginning 1 day before symptoms develop and up to 7 or more days after becoming sick.[3]

INCUBATION PERIOD

Every virus, bacteria or pathogen of any time has a certain incubation period. This period is the time it takes after the pathogen enters the body, for the symptoms to appear. Like all influenza pathogens the average incubation period is two days.[4]

SIGNS AND SYMPTOMS



In Human

- ✓ Fever(greater than 100°F or 37.8°C),
- ✓ Cough,
- ✓ Sore throat,
- ✓ Body aches,
- ✓ Headache,
- ✓ Chills and fatigue.

DIAGNOSIS

The CDC recommends real time PCR as the method of choice for diagnosing H1N1.

For diagnosis of swine influenza A infection, respiratory specimen (nasopharyngeal swab, throat swab nasal aspirate, nasal washing) would generally need to be collected within the first 4 to 5 days of illness (when an infected person is most likely to be shedding virus). Most of the tests can distinguish between A and B types. The test can be negative (no H1N1 infection) or positive for type A and B. If the test is positive for type B, the flu is not likely to be swine influenza (H1N1). If it is positive for type A, the person could have conventional influenza strain or swine influenza (H1N1).[5]

Available Laboratory Tests

- ✓ Rapid Antigen Tests: not as sensitive as other available tests.
- ✓ RT–PCR: In this detection and quantification of mRNA is done. This test detects the viral load in an individual.
- ✓ Virus isolation: The throat swab is generally taken to culture virus from the suspected cases. Though if it is not detected doesn't rule out the disease.
- ✓ Virus Genome Sequencing.[6]

TREATMENT

Vaccination

When a person becomes sick with swine flu, antiviral drugs can make the illness milder and make the patient feel better faster. They may also prevent serious flu complications. Beside antivirals, supportive care at home or in a hospital focuses on controlling fevers, relieving pain and maintaining fluid balance, as well as identifying and treating any secondary infections or other medical problems. The U.S. Centers for Disease Control and Prevention recommends the use of oseltamivir (Tamiflu) or zanamivir (Relenza) for the treatment and/or prevention of infection with swine influenza viruses. The virus isolated in the 2009 outbreak have been found resistant to amantadine and rimantadine.[7]

PRECAUTIONS

According to World Health Organization, swine flu has been declared as a pandemic disease. The following are the WHO safety precautions to be taken against swine flu:

- ✓ The nose and mouth must be covered with disposable tissues while coughing or sneezing.
- ✓ The used tissues must be disposed off immediately after using them.

- ✓ Hygiene and cleanliness must be maintained by washing hands frequently with soap and water.
- ✓ Touching the eyes, nose or mouth without washing hands must be totally avoided.
- ✓ A doctor must be consulted immediately, in case flu-like symptoms are observed.
- ✓ In case of flu-like symptoms, the patient must be quarantined.
- ✓ One should stay at home from work, school and crowed places in case flu-like symptoms are observed.
- ✓ Avoid unnecessary traveling and crowded areas.[8,9]

PREVENTION

There is no vaccine available right now to protect against swine flu. There are everyday actions that can help prevent the spread of germs that cause respiratory illnesses like influenza. Take these everyday steps to protect your health:

- ✓ Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it
- ✓ Wash your hands often with soap and water, especially after you cough or sneeze. Alcohol-based hand cleaners are also effective
- ✓ Avoid touching your eyes, nose or mouth. Germs spread this way
- ✓ Try to avoid close contact with sick people.[9]

REFERENCES

1. "CDC H1N1 Flu | Interim Guidance on Specimen Collection, Processing, and Testing for Patients with Suspected Novel Influenza A (H1N1) (Swine Flu) Virus Infection". Cdc.gov. 2009-05-13. Retrieved 2011-05-22.
2. CDC H1N1 Flu | H1N1 Flu and You". Cdc.gov. http://www.cdc.gov/H1N1flu/qa.htm.
3. FDA Approves Vaccines for 2009 H1N1 Influenza Virus". FDA. http://www.fda.gov.
4. Uscher-Pines, Lori, Jurgen Maurer, and Katherine M. Harris. "Racial and Ethnic Disparities in Uptake and Location of Vaccination for 2009-H1N1 and Seasonal Influenza." American Journal of Public Health, 2011; 101.7: 1252–1255. Soc INDEX with Full Text. Web. 6 Dec. 2011.
5. "Swine Influenza". Swine Diseases (Chest). Iowa State University College of Veterinary Medicine.
6. Ma W; Vincent AL; Gramer MR et al. "Identification of H2N3 influenza A viruses from swine in the United States". Proceedings of the National Academy of Sciences of the United States of America, December 2007; 104(52): 20949–54. doi:10.1073/pnas.0710286104. PMC 2409247. PMID 18093945.
7. Kothalawala H, Toussaint MJ, Gruys E "An overview of swine influenza". Vet Q, June 2006; 28(2): 46–53. doi:10.1080/01652176.2006.9695207. PMID 16841566.
8. http://wiki.answers.com/Q/How_is_swine_flu_spread.
9. Q & A: Key Facts About Swine Influenza (Swine Flu) – Diagnosis". Centers for Disease Control and Prevention.