



Available Online at www.ijppronline.com
International Journal Of Pharma Professional's
Research
Review Article



Pandemic Disease swine flu : A Review

Shekhar singh*, Shaweta sharma

ISSN NO:0976-6723

Teerthanker Mahaveer college of Pharmacy, Teerthanker Mahaveer University, Moradabad

Abstract

Swine flu is a respiratory disease and has some elements of a virus found in pigs. There is no evidence of this disease circulating in pigs in the UK and scientists are investigating its origins. 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. The present review highlights several methods to prevent from Swine flu.

Keywords: - : Swine flu, Pandemic Disease, H1N1.

INTRODUCTION

Influenza like Illness caused by Influenza A [H1N1], a re-assorted influenza virus, was reported from Mexico on 18th March, 2009 and rapidly spread to neighboring United States and Canada. Subsequently the disease spread to all the continents. World Health Organization [WHO] has raised the level of Influenza pandemic alert from phase 5 to 6 on 11.06.09. As per WHO, we are now at the start of 2009 Influenza pandemic. As per WHO assessment the overall severity of Influenza pandemic is moderate implying that most people recover from infection without the need for hospitalization or the medical care. As on 13th August 2009 World Health Organization has reported 1,82,166 laboratory confirmed cases of influenza A/H1N1 and 1799 deaths from 178 countries.

India reported its first case on 13th May, 2008. Most of the cases reported subsequently were travel related cases among those traveling to India from affected countries. As on 20th August, 12,604 persons have been tested so far out of which 2401 are positive for Influenza A H1N1 [Swine]. Substantial number of cases now being reported from Maharashtra (Mumbai and Pune), Karnataka (Bangalore) and Tamil Nadu (Chennai) are indigenous cases. Thirty six laboratory confirmed cases have died. Majority of those who died had some underlying diseases and have reported late to the identified health care facility.(1)



Human infection with influenza virus can vary from asymptomatic infection to uncomplicated upper respiratory tract disease to serious complicated illness that may include exacerbation of other underlying conditions and severe viral pneumonia with multi organ failure. Since a wide range of pathogens can cause influenza-like illness (ILI), a clinical diagnosis of influenza should be guided by clinical and epidemiologic data and can be confirmed by laboratory tests. However, on an individual patient basis, initial treatment decisions should be based on clinical presentation and epidemiological data and should not be delayed pending laboratory confirmation. In developing these guidelines, the Guidelines Panel (the Panel) considered three broad scenarios, set out below.

Uncomplicated influenza

Influenza-like illness (ILI) symptoms include: fever, cough, sore throat, nasal congestion or rhinorrhea, headache, muscle pain, and malaise, but not shortness of breath and not dyspnoea. Patients may present with some or all of these symptoms.

Gastrointestinal illness may also be present, such as diarrhoea and/or vomiting, especially in children, but without evidence of dehydration.

Some patients with uncomplicated illness may experience atypical symptoms and may not have fever (e.g. elderly or immunosuppressed patients).

Complicated or severe influenza

Presenting clinical (e.g. shortness of breath/dyspnoea, tachypnoea, hypoxia) and/or radiological signs of lower respiratory tract disease (e.g. pneumonia), central nervous system (CNS) involvement (e.g. encephalopathy, encephalitis), severe dehydration, or presenting secondary complications, such as renal failure, multiorgan failure, and septic shock. Other complications can include rhabdomyolysis and myocarditis.

Exacerbation of underlying chronic disease, including asthma, chronic obstructive pulmonary disease (COPD), chronic hepatic or renal insufficiency, diabetes, or other cardiovascular conditions (e.g. congestive cardiac failure).

Any other condition or clinical presentation requiring hospital admission for clinical management (including bacterial pneumonia with influenza).

Signs and symptoms of progressive disease

Patients who present initially with uncomplicated influenza may progress to more severe disease. Progression can be rapid (i.e. within 24 hours). The following are some of the indicators of progression, which would necessitate an urgent review of patient management:

Symptoms and signs suggesting oxygen impairment or cardiopulmonary insufficiency:

Shortness of breath (with activity or at rest), difficulty in breathing, tachypnoea, presence of cyanosis, bloody or coloured sputum, chest pain, and low blood pressure;

In children, fast or laboured breathing; and

Hypoxia, as indicated by pulse oximetry or arterial blood gases.

Symptoms and signs suggesting CNS complications:

Altered mental status, unconsciousness, drowsiness, or difficult to awaken and recurring or persistent convulsions (seizures), confusion, severe weakness, or paralysis.

Evidence of sustained virus replication or invasive secondary bacterial infection based on laboratory testing or clinical signs (e.g. persistent or recurrent high fever and other symptoms beyond 3 days without signs of resolution).

Severe dehydration, manifested as decreased activity, dizziness, decreased urine output, and lethargy.(6)

Epidemiology

The agent Genetic sequencing shows a new sub type of influenza A (H1N1) virus with segments from four influenza viruses: North American Swine, North American Avian, Human Influenza and Eurasian Swine.

Flu viruses are made up of tiny particles that can be spread through the droplets that come out of your nose and mouth when you cough or sneeze. When you cough or sneeze diseases. Living in remote or isolated communities, and living in impoverished or overcrowded conditions, also places many First Nations people at higher risk. If you cough or sneeze into your hand, those droplets and the germs in them are then easily spread from your hand to any hard surfaces that you touch, and they can live on those surfaces for some time. Everyday items such as door handles, computer keyboards, mobile and ordinary phones and the TV remote control are all common surfaces where flu viruses can be found. If other people touch these surfaces and then touch their faces, the germs can enter their systems and they can become infected. That's how all cold and flu viruses, including swine flu, are passed on from person to person.

Host factors

The majority of these cases have occurred in otherwise healthy young adults.

Transmission

The transmission is by droplet infection and fomites.

Incubation period 1-7 days.

Communicability

From 1 day before to 7 days after the onset of symptoms. If illness persist for more than 7 days, chances of communicability may persist till resolution of illness. Children may spread the virus for a longer period. There is substantial gap in the epidemiology of the novel virus which got re-assorted from swine influenza.

Clinical features & Symptoms

Important clinical features of swine influenza include fever, and upper respiratory symptoms such as cough, running nose and sore throat. Head ache, body ache, fatigue diarrhea and vomiting have also been observed. There is insufficient information to date about clinical complications of the current pandemic influenza A

(H1N1) virus infection. Clinicians should expect complications to be similar to seasonal influenza: sinusitis, otitis media, croup, pneumonia, bronchiolitis, status asthmaticus, myocarditis, pericarditis, myositis, rhabdomyolysis, encephalitis, seizures, toxic shock syndrome and secondary bacterial pneumonia with or without sepsis. Individuals at extremes of age and with preexisting medical conditions are at higher risk of complications and exacerbation of the underlying conditions.

Some of the symptoms are the sudden onset of fever, cough or shortness of breath. Other symptoms can include headache, sore throat, tiredness, aching muscles, chills, sneezing, runny nose or loss of appetite.(2)

Patients at higher risk

Young adults, children and babies are most likely to get the H1N1 flu. Most cases are mild, but a small number of people, including healthy young adults, have needed intensive care in hospital for H1N1 flu or have even died. This makes H1N1 flu different from seasonal flu, which mostly affects older people.

Pregnant women and people with underlying disease are at higher risk of severe illness, if they are infected with H1N1.

Many First Nations people belong to higher risk groups for H1N1 infection and severe illness. This is because First Nations communities tend to have many young adults and children, pregnant women, and people with underlying

Investigations

Routine investigations required for evaluation and management of a patient with symptoms as described above will be required. These may include haematological, biochemical, radiological and microbiological tests as necessary. Confirmation of Pandemic influenza A(H1N1) infection is through: Real time RT PCR or Isolation of the virus in culture or Four-fold rise in virus specific neutralizing antibodies. For confirmation of diagnosis, clinical specimens such as nasopharyngeal swab, throat swab, nasal swab, wash or aspirate, and tracheal aspirate (for intubated patients) are to be obtained. The sample should be collected by a trained physician / microbiologist preferably before administration of the anti-viral drug. Keep specimens at 4°C in viral transport media until transported for testing. The samples should be transported to designated laboratories within 24 hours. If they cannot be transported then it needs to be stored at -70°C. Paired blood samples at an interval of 14 days for serological testing should also be collected.

Treatment

The guiding principles are: Early implementation of infection control precautions to minimize nosocomial / household spread of disease Prompt treatment to prevent severe illness & death. Early identification and follow up of persons at risk.

- Mild influenza illness does not require specific antiviral medicine.
- Medicines should be taken only on advice of the health care provider
- Paracetamol for fever and ibuprofen for myalgia can be taken as per the advice of health care provider.
- Oseltamivir to be taken, if prescribed/adviced by the doctor only.
- Children need to be given paediatric preparation and dosage of the above drugs
- Patient should take plenty of fluids, rest and do warm saline gargles.

Aspirin should not be given for fever or body ache. Medicines (other than paracetamol) available for fever, headache, body ache in general groceries, pan shops etc should not be taken as they may contain aspirin.

(3)

Infrastructure / manpower / material support

- Isolation facilities: if dedicated isolation room is not available then patients can be cohorted in a well ventilated isolation ward with beds kept one metre apart.
- Manpower: Dedicated doctors, nurses and paramedical workers.
- Equipment: Portable X Ray machine, ventilators, large oxygen cylinders, pulse oxymetry
- Supplies: Adequate quantities of PPE, disinfectants and medications (Oseltamivir, antibiotics and other medicines)

Difference between vaccines and antivirals

Vaccines prevent influenza. They give you immunity to specific diseases by telling your body to make antibodies.

Antivirals are drugs used for early treatment of influenza, and in special cases for prevention. They do not make you immune to the virus, but they can reduce the severity and length of illness. Most people are recovering well from H1N1 flu on their own at home, so this flu season antivirals will be used for early treatment only for those who need it. (4)

Different Guidelines for Providing Home Care

The present Pandemic Influenza A H1N1 is of moderate severity. Large number of cases are mild requiring only home isolation and symptomatic treatment. Ministry of Health & Family Welfare,

Government of India has already prepared guidelines for categorization of patients during screening (available on the website –mohfw.nic.in). For category A & B, home isolation and treatment is recommended. These guidelines need to be followed for such category of patients.

Guiding Principles:

Patient should :

- Be informed about the illness during screening.
- Stay home for seven days, preferably isolate himself / herself in a well ventilated room.
- Avoid common areas frequented by other members of the family.
- If the living space is small and more than one person need to sleep in a room, ensure that the head end of patient and others sleeping in that room are in opposite direction (head to toe).
- Wear mask all the time. Three layered surgical mask should be provided by the hospital / community health worker. If mask is not readily available, mouth and nose should be covered with a piece of cloth/handkerchief.
- Avoid smoking.
- Avoid close contact with others. If inevitable, they should always maintain an arm's length.
- Avoid having visitors.
- Avoid going into the community, school, office, markets.
- Wash hands frequently.
- Self monitor health and report to identified health facility in case of worsening of symptoms.(5)

Precautions measures we should do if get sick and their identification

If you live in areas where swine influenza cases have been identified and become ill with influenza-like symptoms, including fever, body aches, runny nose, sore throat, nausea, or vomiting or diarrhea, you may want to contact your health care provider, particularly if you are worried about your symptoms. Your health care provider will determine whether influenza testing or treatment is needed.

If you are sick, you should stay home and avoid contact with other people as much as possible to keep from spreading your illness to others.

If you become ill and experience any of the following warning signs, seek emergency medical care.

In children emergency warning signs that need urgent medical attention include:

- Fast breathing or trouble breathing
- Bluish skin color

- Not drinking enough fluids
- Not waking up or not interacting
- Being so irritable that the child does not want to be held
- Flu-like symptoms improve but then return with fever and worse cough
- Fever with a rash

In adults, emergency warning signs that need urgent medical attention include:

- Difficulty breathing or shortness of breath
- Pain or pressure in the chest or abdomen
- Sudden dizziness
- Confusion
- Severe or persistent vomiting (6)

Precautions to protect against flu

The best thing you can do to protect yourself is to follow good hygiene practices. These will help to slow the spread of the virus and will be the single most effective thing you can do to protect yourself and others from infection. When you cough or sneeze it is especially important to follow the rules of good hygiene to prevent the spread of germs:

- Always carry tissues.
- Use clean tissues to cover your mouth and nose when you cough and sneeze.
- Bin the tissues after one use.
- Wash your hands with soap and hot water or a sanitiser gel often. (7)

Conclusion:-

The present Pandemic Influenza A H1N1 is of moderate severity. Large number of cases are mild requiring only home isolation and symptomatic treatment. Ministry of Health & Family Welfare, Government of India has already prepared guidelines for categorization of patients during screening (available on the website –mohfw.nic.in). For category A & B, home isolation and treatment is recommended. These guidelines need to be followed for such category of patients. This review give a quick Guidance about the Pandemic disease Swine flu.

References:-

1. www.mohfw.nic.in.
2. http://www.who.int/csr/disease/avian_influenza/guidelines/pharmamanagement/en/index.htm
3. Pandemic Influenza A H1N1 Clinical management Protocol and Infection Control Guidelines Directorate General of Health Services Ministry of Health and Family Welfare Government of India

4. www.cdc.gov/swineflu/swineflu_you.htm
5. www.cdc.gov/swineflu/key_facts.htm

6. www.who.int/en/
7. www.public.health.wa.gov.au
-

Correspondence Address:

Shekhar singh

Assistant Professor

Teerthanker Mahaveer college of Pharmacy,

Teerthanker Mahaveer University, Moradabad

Email: shekarsingh47@gmail.com

Phone: +91-8273680419

