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A REVIEW ON SWINE FLU

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ABSTRACT

Swine flu has been a terror effects all round the globe and has been declared epidemic in most part of the world. Swine flu refers to swine influenza or the viral infection caused by any of the several type of swine influenza virus. Only people who used to have direct contact with pigs were observed to get swine flu in the past. But, H_1N_1 is virus is a new swine flu virus and it contains the genetic material of swine, bird and human influenza virus. H_1N_1 is an Influenza A virus. Swine flu can produce a number of symptoms in both adult & children. In India day by day the graph of infected person has been climbed up so, it is important to take into consideration about this diseases it may prove deadly one. The intensity of this disorder can be lowered by diagnosing & taking proper treatment.

KEYWORDS: Swine flu, H_1N_1, Influenza.

INTRODUCTION

As on 30.04.09, 148 laboratory confirmed human cases of Swine influenza A (H1N1) has been reported from nine countries with 8 deaths. (Mexico [26 cases, 7 deaths], USA [91 cases, one death], Canada (13), Austria(1), Germany (3), Israel(2), New Zealand(3), Spain(4), and United Kingdom(5). Over 1300 suspected cases have been reported with about 100 deaths. The outbreak started in Mexico on 18th March, 2009 and spread to USA and Canada and then to other Countries.

WHO has heightened the pandemic level to Phase 5 implying widespread human infection Swine flu is an emerging viral infection that is a present global public health problem. There are many thousands cases of swine flu in the present day. This new infection can be seen around the world in the present day. This infection is a kind of variant of H1N1 influenza infection (Figure 1). The problematic virus was firstly detected in America in 2009 and this virus is the most widely studied virus in the present day. Due to the nature of respiratory virus, the transmission of this pathogenic virus is air borne transmission. Hence, the rapid spreading and difficulty in control of this infection can be expected [1].

Swine flu, also called pig influenza, swine influenza, hog flu and pig flu. Swine influenza virus (SIV) or S-OIV (swine-origin influenza virus) is any strain of the influenza family of viruses that is endemic in pigs[2]. as 2009 the known SIV strains include influenza C and the subtypes of Influenza A known as H1N1, H1N2, H3N1, H3N2, and H2N3. 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. In March/April 2009 human cases of influenza swine fevers (H1N1) were first reported in California and Texas then later in other states and even in Mexico. In 2009 the media labeled as "swine flu" the flu caused by 2009's new strain of swine origin A/ H1N1 pandemic virus just as it had earlier dubbed as "avian flu" flu caused by the recent Asian-linage HPAI (High Pathogenic Avian Influenza) H5N1 strain that is still endemic in many wild bird species in several countries[3].

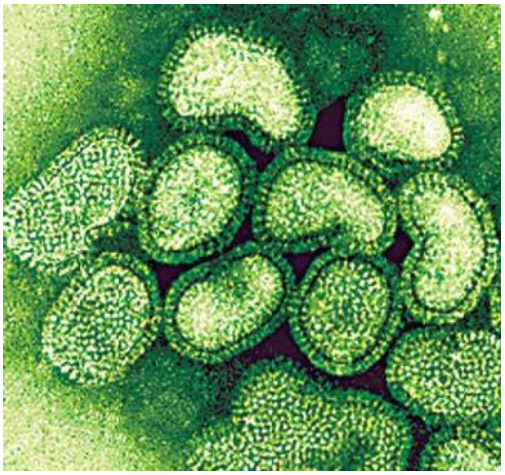

Figure 1 Electron microscope image of the reasserted H_1N_1 influenza virus

AIMS AND Objectives

To study the literature about swine flu.

Keeping all this in view the study was designed to assess the awareness, perception and myths regarding Swine flu among educated common public.

To study the treatment of swine flu.

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.

Host factors

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

Transmission

The transmission is by droplet infection and fumets.

HISTORY

Swine influenza was first proposed to be a disease related to human flu during the 1918 flu pandemic, when pigs became sick at the same time as humans. The first identification of an influenza virus as a cause of disease in pigs occurred about ten years later, in 1930. For the following 60 years, swine influenza strains were almost exclusively H1N1. Then, between 1997 and 2002, new strains of three different subtypes and five different genotypes emerged as causes of influenza among pigs in North America. In 1997– 1998, H3N2 strains emerged. These strains, which include genes derived by reassortment from human, swine and avian viruses, have become a major cause of swine influenza in North America. Reassortment between H1N1 and H3N2 produced H1N2. In 1999 in Canada, a strain of H4N6 crossed the species barrier from birds to pigs, but was contained on a single farm. (Figure 2) The phylogenetic origin of the flu virus that caused the 2009 pandemics can be traced before 1918. Around 1918, the ancestral virus of avian origin, crossed the species boundaries and infected humans as human H1N1. The same phenomenon took place soon after in America, where the human virus was infecting pigs; it lead the emergence of the H1N1 swine strain, which later became the classic swine flu. The new human H1N1 flu strain of avian origin, was kept transmitting among human populations until around 1957, when there was a co infection between this strain and the avian H1N1 in humans. There was a reassortment event leading to the development of a new strain (H2N2). New events of reassortment were not reported until 1968, when the avian strain H1N1 infected humans again; this time the virus met the strain H2N2, and the reassortment originated the strain H3N2. This strain has remained as a stable flu strain until now. The critical moment for the 2009 outbreak was between 1990 and 1993. There was a triple reassortment event in a pig host. The reassortment of North American H1N1 swine virus, the human H3N2 virus and avian H1N1 generated the swine H1N2 strain. Finally, the last step in S-OIV history was in 2009 when the virus H1N2 co infected a human host at the same time as the euroasiatic H1N1 swine strain. This lead to the emergence of a new human H1N1 strain which caused the 2009 pandemic[4].

HOW IT SPREAD?

Like 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. People with swine influenza virus infection should be considered potentially contagious as long as they are symptomatic and possible for up to 7 days following illness onset. Children, especially younger children, might potentially be contagious for longer periods. Swine influenza viruses are not transmitted by food. Any person cannot get swine influenza from eating pork or pork products. Eating properly handled and cooked pork and pork products are safe. Cooking pork to an internal temperature of 160°F (72°C) kills the swine flu virus as it does other bacteria and viruses [5].

WHAT IS THE SWINE FLU 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. However, studies have shown individual periods to range between one day to seven days, over all. As such, there is quite a dispute all over the world about the incubation period. Hence, as a suggestion it would be wise to keep an eye out for approximately 10 days to be sure of the infection. Most US cases have shown the incubation period to be between two to seven days[6].

WHO ARE PRONE TO INFECTION WITH SWINE FLU?

- Older age group 65 yr[6].
- Pregnant woman.
- Individuals with chronic lung disease.
- Individuals with congestive heart failure.
- Individuals with renal failure.
- Immunosuppressant.
- Hematological abnormalities.
- Individuals with Diabetes mellitus.
- Individuals with chronic hepatic disease.
- Socially unable to cope.
- Individuals with asthma.

SIGNS AND SYMPTOMS

H1N1 Virus in Humans

The symptoms of H1N1 influenza in people are expected to be similar to the symptoms of regular human seasonal influenza and include fever above 100, fatigue, lack of appetite, and coughing. Some people with H1N1 influenza also have reported runny/stuffy nose, sore throat, chills, headache, body ache, nausea, vomiting, and diarrhea. In the past, severe illness and deaths have been reported with H1N1 influenza infection in people. Like seasonal flu, H1N1 influenza may cause a worsening of underlying chronic medical conditions. People with symptoms should see their doctors and stay home from work or school.

Emergency warning signs in children 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

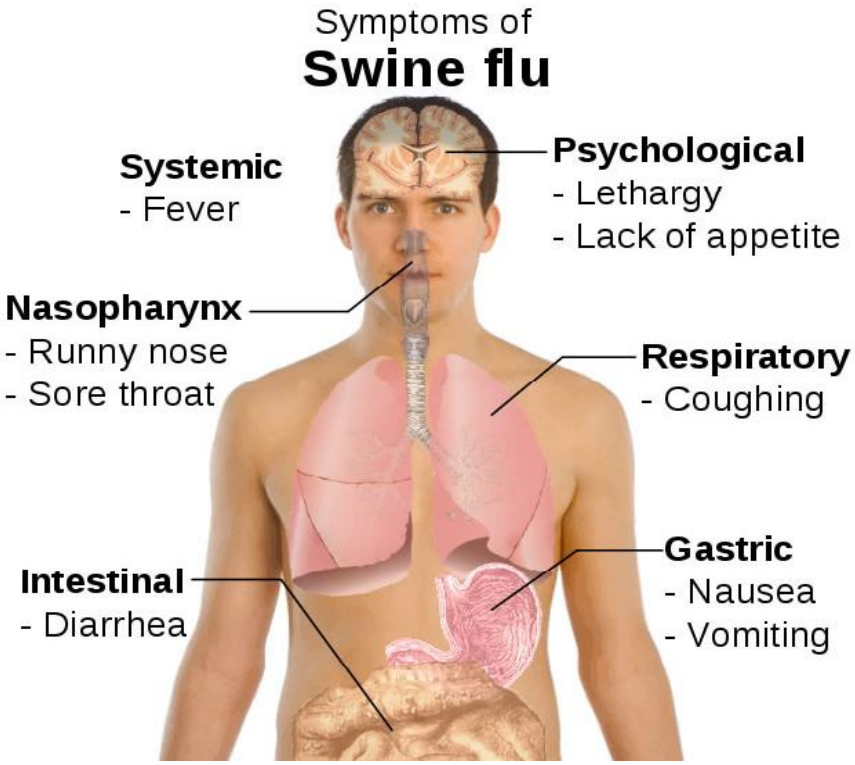

Figure 3 Main symptoms of swine flu in humans

Emergency warning signs in adults 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.

Can people catch H1N1 influenza from eating pork?

No. H1N1 influenza viruses are not transmitted by food. You cannot get H1N1 influenza from eating pork or pork products. Eating properly handled and cooked pork products are safe. Cooking pork to an internal temperature of 160 degrees Fahrenheit kills the H1N1 influenza virus as it does other bacteria and viruses.

In Swine

In pigs influenza infection produces fever, lethargy, sneezing, coughing, difficulty breathing and decreased appetite[7].

In Humans

Symptoms include fever, cough, sore throat, body aches, headache, chills and fatigue[8,9]. The 2009 outbreak has shown an increased percentage of patients reporting diarrhea and vomiting[10]. The 2009 H1N1 virus is not zoon tic swine flu, as it is not transmitted from pigs to humans, but from person to person[11]. (Figure 3)

Clinical features

Important clinical features of swine influenza include fever, and upper respiratory symptoms such as cough 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 this variant of swine origin influenza A (H1N1) virus infection. Clinicians should expect complications to be similar to seasonal influenza: sinusitis, omits media, croup, pneumonia, bronchiolitis, status asthmatics, myocarditis, pericarditis, mystic, 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[12].

DIAGNOSIS

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)[13].

Sample Collection:

It should be labeled clearly and include patient's complete information and should be sent to NIV, Pune or NICD, Delhi within 24 hours for further investigations. Laboratory biosafety measures should be followed for collection, storage, packaging and shipping of influenza samples.

Available Laboratory Tests:

Routine investigations required for evaluation and management of a patient with symptoms as described above will be required. These may include hematological, biochemical, radiological and microbiological tests as necessary. Confirmation of influenza A (H1N1) swine origin infection is through:

- 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[14].

For confirmation of diagnosis, clinical specimens such as nasopharyngeal swab, throat swab, nasal swab, wash or aspirate, and tracheal aspirate (for incubated 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.

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[9].

- The nose and mouth must be covered with disposable tissues while coughing or sneezing.
- The used tissues must be disposed of 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.
- Face masks and gloves must be used when moving out in crowded places or nursing any ill patient. If a person is ill, then he or she should avoid contact with other people and stay isolated. Visit an authorized swine flu treatment hospital or doctor for further treatment. One should keep their surroundings clean and maintain hygiene.
- Avoid unnecessary traveling and crowded areas.

PREVENTION

Prevention of swine influenza has three components namely prevention in swine, prevention of transmission to humans, and prevention of its spread among humans[15].

In Swine

Methods of preventing the spread of influenza among swine include facility management, herd management, and vaccination. Because much of the illness and death associated with swine flu involves secondary infection by other pathogens, control strategies that rely on vaccination may be insufficient[16,17]. Control of swine influenza by vaccination has become more difficult in recent decades, as the evolution of the virus has resulted in inconsistent responses to traditional vaccines. Standard commercial swine flu vaccines are effective in controlling the infection when the virus strains match enough to have significant cross-protection, and custom (autogenously) vaccines made from the specific viruses isolated are created and used in the more difficult cases[18].

Facility management includes using disinfectants and ambient temperature to control virus in the environment. The virus is unlikely to survive outside living cells for more than two weeks, except in cold (but above freezing) conditions, and it is readily inactivated by disinfectants. Herd management includes not adding pigs carrying influenza to herds that have not been exposed to the virus. The virus survives in healthy carrier pigs for up to 3 months and can be recovered from them between outbreaks[19].

In Humans

Prevention of pig to human transmission:

Swine can be infected by both avian and human flu strains of influenza, and therefore are hosts where the antigenic shifts can be occur that create new influenza strains. The transmission from swine to human is believed to occur mainly in swine farms where farmers are in close contact

with live pigs. Although strains of swine influenza are usually not able to infect humans this may occasionally happen, so farmers and veterinarians are encouraged to use a face mask when dealing with infected animals. The use of vaccines on swine to prevent their infection is a major method of limiting swine to human transmission. Risk factors that may contribute to swine-to human transmission include smoking and, especially, not wearing gloves when working with sick animals thereby increasing the likelihood of subsequent hand-to-eye, hand-to-nose or hand-to mouth transmission[20].

Prevention of human to human transmission:

Influenza spreads between humans when infected people cough or sneeze, then other people breathe in the virus or touch something with the virus on it and then touch their own face[21,22].

Recommendations to prevent spread of the virus among humans include using standard infection control against influenza. This includes frequent washing of hands with soap and water or with alcohol-based hand sanitizers, especially after being out in public[23]. Chance of transmission is also reduced by disinfecting household surfaces, which can be done effectively with a diluted chlorine bleach solution[24]. Experts agree that hand-washing can help prevent viral infections, including ordinary influenza and the swine flu virus and also not touching eyes, nose or mouth with hands helps to prevent the flu[25]. Alcohol-based gel or foam hand sanitizers Work well to destroy viruses and bacteria[26].

TREATMENT

Treatment of swine flu can be done by 3 ways:

Vaccination: Vaccines have been developed to protect against the virus that causes swine flu. There are two different brands of vaccine Pandemic and Celvapan. Many people given the Pandemics vaccine will only need one dose. People who have the Celvapan vaccine will need two doses three weeks apart. The swine flu vaccine is different from the seasonal flu vaccination that's offered every year. The seasonal flu vaccine does not protect against swine flu. The vaccine is being offered first to pregnant women at any stage of pregnancy, child and people who are most likely to become seriously ill if they catch swine flu. There are only a few people who cannot have the swine flu vaccine. The vaccines should not be given to anyone who has had a severe allergic reaction to a previous dose of the vaccine or any component of the Vaccine[27].

Antiviral Therapy: Two classes of antiviral drugs are available for the prevention and treatment of influenza: neuraminidase inhibitors and adamantine, which inhibit a viral protein called M2. Influenza A H1N1, formerly known as swine flu, has been found to be resistant to adamantine (Amantadine and Rimantadine). Oseltamivir (Tami flu) and Zanamivir (Relenza) are the two

neuraminidase inhibitors currently available by prescription. These drugs reduce the median duration of symptoms by approximately one day and reduce the chance of contracting influenza by 70 to 90 % when used for known influenza exposure. Zanamivir and Oseltamivir are structurally related drugs that have been approved by the United States Food and Drug Administration (FDA) for the prophylaxis and treatment of influenza. In addition to their activity against current influenza A and influenza B strains, they are also active against the strain that caused the1918 pandemic and against avian influenza a strains[30-33].

Swine Flu and Ayurveda[6]:

Ayurveda promotes the concept that if one's immune system is strong, then even if the body is exposed to viruses, one will not be affected. During a pandemic or an epidemic, Ayurveda emphasizes on the immunity of people living in regions affected by viruses. This branch of medicine promotes the intake of special herbs or decoctions to increase the immunity level of the people. Ayurvedic remedies comprise pure natural herbs which are effective in preventing swine flu. Moreover, the herbs are used to relieve swine flu symptoms, and boost the immune system against the H1N1 virus. Ayurvedic treatment for swine flu involves the use of following herbs.

Basil

Basil, *Ocimum basilicum* is a great Ayurvedic treatment option for swine flu. Ayurvedic practitioners claim that basil not only keeps the nasty swine flu virus at bay, but it also assists in the fast recovery of an affected person. They claim that basil improves the body's overall defense mechanism, thereby increasing its ability to fight viral diseases. It is also believed to strengthen the immune system of the afflicted person. For the control and prevention of swine flu, basil must be consumed in the fresh form. The paste or juice of a minimum of 25 leaves (medium size) should be consumed twice a day. Moreover, it should be had on an empty stomach. Basil is safe, with no side effects and is great to prevent swine flu from spreading like wildfire.

Ginger

Ginger, *Zingier officinal* is one of the natural remedies for swine flu prevention. It boosts the body's immunity level and helps protect the body. Ginger has been known to fight cold, fever and flu conditions, and is also good to reduce inflammation.

Garlic

Garlic, *Alliums stadium* on the other hand is a powerful natural antibiotic, which features an unusual property of repelling bacteria and viruses.

Gooseberry

Gooseberry, *Embelica officinalis* is one of the best fruits known to boost the immune system of the body. Since gooseberry is rich in Vitamin C, it helps raise the body's resistance to flu viruses. If fresh gooseberry is not available in the market, then the form of jam or juice is also great.

Aloe vera

Aloe vera is an easily available plant and is also beneficial to boost immunity. One should consume a teaspoon of gel with water on a daily basis.

Camphor and Eucalyptus Oil

Camphor has great ability to keep different air borne diseases under control. It is available in the form of camphor oil, which can be burnt in the room or office all the time. Inhaling the steam of Eucalyptus oil is also good. Just add a few drops of Eucalyptus oil into lukewarm water and inhale the steam. This helps to clear the nasal track and promotes the health of the respiratory tract.

Thus, it can be seen that while swine flu and Ayurveda both target the immune system, swine flu destroys it and Ayurveda focuses on keeping it healthy. Besides the above Ayurvedic treatment options for swine flu, there are several other swine flu home remedies that one can try out. People who do not have milk allergy can take a glass of hot milk every night with little turmeric in it. Moreover, plenty of rest, nutritious diet, quitting smoking, and adequate exercise will help the body fight microorganisms. Overall, these alternative medicines for swine flu will help increase the body's resistance, thereby preventing the body from being affected. However, before taking any of these herbs, it is advisable to consult a herbalist.

The guiding principles are:

- Early implementation of infection control precautions to minimize nosocomical / household spread of disease.
- Prompt treatment to prevent severe illness & death.
- Early identification and follow up of persons at risk.

Infrastructure / manpower / material support

Isolation facilities: if dedicated isolation room is not available then patients can be cohered in a well ventilated isolation ward with beds kept one meter apart.

- Manpower: Dedicated doctors, nurses and paramedical workers.
- Equipment: Portable X ray machine, ventilators, large oxygen cylinders, pulse ox meter.
- Supplies: Adequate quantities of PPE, disinfectants and medications (Oseltamivir, antibiotics and other medicines)

Standard Operating Procedures

- Reinforce standard infection control precautions i.e. all those entering the room must use high efficiency masks, gowns, goggles, gloves, cap and shoe cover.
- Restrict number of visitors and provide them with PPE.
- Provide antiviral prophylaxis to health care personnel managing the case and ask them to monitor their own health twice a day.
- Dispose waste properly by placing it in sealed impermeable bags labeled as Bio- Hazard.

Oseltamivir Medication

- Oseltamivir is the recommended drug both for prophylaxis and treatment.

Dose

For treatment is as follows By Weight:

- For weight <15kg 30 mg BD for 5 days
- 15-23kg 45 mg BD for 5 days
- 24-<40kg 60 mg BD for 5 days
- >40kg 75 mg BD for 5 days

For infants:

- < 3 months 12 mg BD for 5 days
- 3-5 months 20 mg BD for 5 days
- 6-11 months 25 mg BD for 5 days
- It is also available as syrup (12mg per ml)
- If needed dose & duration can be modified as per clinical condition.

Adverse reactions:

Oseltamivir is generally well tolerated, gastrointestinal side effects (Transient nausea, vomiting) may increase with increasing doses, particularly above 300 mg/day. Occasionally it may cause bronchitis, insomnia and vertigo. Less commonly angina, pseudo membranous colitis and peritonsillar abscess have also been reported. There have been rare reports of anaphylaxis and skin rashes. In children, most frequently reported side effect is vomiting. Infrequently, abdominal pain, epitasis, bronchitis, otitis media, dermatitis and conjunctivitis have also been observed. There is no recommendation for dose reduction in patients with hepatic disease. Though rare reporting of fatal neuropsychiatric illness in children and adolescents have been linked to oseltamivir, there is no scientific evidence for a causal relationship.

Supportive therapy

- IV Fluids.

- Parental nutrition.
- Oxygen therapy/ ventilator support.
- Antibiotics for secondary infection.
- Vasopressors for shock.
- Paracetamol or ibuprofen is prescribed for fever, malign and headache. Patient is advised to drink plenty of fluids. Smokers should avoid smoking. For sore throat, short course of topical decongestants, saline nasal drops, throat lozenges and steam inhalation may be beneficial.
- Salicylate / aspirin is strictly contra-indicated in any influenza patient due to its potential to cause Reye's syndrome.
- The suspected cases would be constantly monitored for clinical / radiological evidence of lower respiratory tract infection and for hypoxia (respiratory rate, oxygen saturation, level of consciousness).
- Patients with signs of tachypnea, dyspnea, respiratory distress and oxygen saturation less than 90 per cent should be supplemented with oxygen therapy. Types of oxygen devices depend on the severity of hypoxic conditions which can be started from oxygen cannula, simple mask, partial re-breathing mask (mask with reservoir bag) and non-rebreathing mask. In children, oxygen hood or head boxes can be used.
- Patients with severe pneumonia and acute respiratory failure ($SpO_2 < 90\%$ and $PaO_2 < 60$ mmHg with oxygen therapy) must be supported with mechanical ventilation. Invasive mechanical ventilation is preferred choice. Noninvasive ventilation is an option when mechanical ventilation is not available. To reduce spread of infectious aerosols, use of HEPA filters on expiratory ports of the ventilator circuit / high flow oxygen masks is recommended.
- Maintain airway, breathing and circulation (ABC);
- Maintain hydration, electrolyte balance and nutrition.
- If the laboratory reports are negative, the patient would be discharged after giving full course of oseltamivir. Even if the test results are negative, all cases with strong epidemiological criteria need to be followed up.
- Immunomodulating drugs have not been found to be beneficial in treatment of ARDS or sepsis associated multi organ failure. High dose corticosteroids in particular have no evidence of benefit and there is potential for harm. Low dose corticosteroids (Hydrocortisone 200-400 mg/ day) may be useful in persisting septic shock (SBP < 90).

- Suspected case not having pneumonia do not require antibiotic therapy. Antibacterial agents should be administered, if required, as per locally accepted clinical practice guidelines. Patient on mechanical ventilation should be administered antibiotics prophylactic ally to prevent hospital associated infections.

Discharge Policy

- Adult patients should be discharged 7 days after symptoms have subsided.
- Children should be discharged 14 days after symptoms have subsided.
- The family of patients discharged earlier should be educated on personal hygiene and infection control measures at home; children should not attend school during this period.

Chemo Prophylaxis

- All close contacts of suspected, probable and confirmed cases. Close contacts include household /social contacts, family members, workplace or school contacts, fellow travelers etc.
- All health care personnel coming in contact with suspected, probable or confirmed cases
- Oseltamivir is the drug of choice.
- Prophylaxis should be provided till 10 days after last exposure (maximum period of 6 weeks)

By Weight:

- For weight <15kg 30 mg OD
- 15-23kg 45 mg OD
- 24-<40kg 60 mg OD
- >40kg 75 mg OD

For infants:

- < 3 months not recommended unless situation judged critical due to limited data on use in this age group
- 3-5 months 20 mg OD
- 6-11 months 25 mg OD

Laboratory Tests

- The samples are to be tested in BSL-3 laboratory. At present the following laboratories are the identified laboratories for this purpose:
- National Institute of Communicable Diseases, 22, Sham Nath Marg, Delhi [Tel. Nos. Influenza Monitoring Cell: 011-23921401; Director: 011-23913148]

- (ii) National Institute of Virology, 20-A, Dr. Ambedkar Road, Pune- 411001 [Tel.No. 020-26124386]

Current Scenario

State	Reported cases	Number of deaths	Notes
Rajasthan	6,093	397	As of 10 March 2015
Gujarat	6,271	400	As of 19 March 2015
Delhi	4,084	12	As of 19 March 2015
Maharashtra	3,788	322	As of 19 March 2015
Telangana	1,842	74	As of 19 March 2015
Tamil Nadu	320	12	As of 6 March 2015
Karnataka	1,801	77	As of 19 March 2015
Punjab	227	52	As of 19 March 2015
Andhra Pradesh	72	20	As of 19 March 2015
Uttar Pradesh	165	35	As of 19 March 2015
Chhatisgarh		16	As of 19 March 2015
Goa	7	1	
Jammu and Kashmir	109	16	As of 19 March 2015
Himachal Pradesh		20	As of 19 March 2015
Kerala	25	4	
Odisha	22	5	As of 11 March 2015
West Bengal	58	23	As of 19 March 2015
Assam	10	1	As of 9 March 2015
Manipur	5	2	As of 12 March 2015
Nagaland	1		As of 18 February 2015
Total	**31,156**	**1,841**	As of 19 March 2015

CONCLUSION

From the above survey of information it can be well known that the Swine flu is a dangerous disorder which is spreading worldwide and this is a casual thing to be considered that more and more people in India are affected by it and the cases may increase. So, it is important to take into consideration about this disease as it may prove deadly one. And thus the intensity of this disorder can be lowered by diagnosing and taking proper treatments.

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