

**SWINE FLU
EMERGING THREAT****VIEW POINT**

Pregnancy and Swine Influenza A (H1N1 Virus)

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A new strain of novel Triple-Reassortant Swine Influenza A (H1N1 virus) has rapidly spread from the initial outbreak in Mexico to many countries including India affecting many (1). Little is known about whether influenza viruses are transmitted to the fetus through the placenta, although this class of viruses is not considered to be teratogenic in humans. The risk of morbidity from seasonal influenza is higher among pregnant women, especially in the third trimester (2). Although, the current novel H1N1 influenza virus may not be as virulent as anticipated, but pregnant women have an increased risk of influenza infection and complications (1). Because many H1N1 infected people are young (3), the care of pregnant and lactating women is a genuine concern.

In a study from USA, from April 15 to May 18, 2009, 34 confirmed or probable cases of pandemic H1N1 in pregnant women were reported to CDC from 13 states. Eleven (32%) women were admitted to hospital. The estimated rate of admission for pandemic H1N1 influenza virus infection in pregnant women during the first month of the outbreak was higher than it was in the general population. Between April 15 and June 16, 2009, 6 deaths in pregnant women were reported to the CDC (1).

In all clinical settings, pregnant women should be screened for signs and symptoms of febrile respiratory illness at the initial point of contact and should be promptly segregated and assessed. Outpatient clinical settings, labor and delivery units should develop and implement procedures for handling patients with respiratory illness with flu like symptoms.

The symptoms of swine flu in people are expected to be similar to the symptoms of regular human seasonal influenza like fever, lethargy, lack of appetite, cough, running nose, sore throat, nausea, vomiting and diarrhea. The diagnosis is established by Rapid Antigen Tests, RT-PCR, Virus isolation, Virus Genome Sequencing and Four-fold rise in swine influenza A (H1N1) virus specific neutralizing antibodies. 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 (4).

There is currently no vaccine available against human swine influenza. Avoid close contact with people who are having respiratory illness. Keep away from the sick persons. Cover mouth and nose with a tissue or handkerchief if someone coughing or sneezing nearby. Washing hands often with soap or alcohol based hand wash. Get plenty of sleep, be physically active, manage stress, drink plenty of fluids, and eat nutritious balanced food. If pregnant women develop influenza-like-illness, should contact their health care providers. Persons who have difficulty in breathing or shortness of breath should seek immediate medical attention and report to the nearby hospital. Minimize contact in the community to the extent possible (4).

The Centers for Disease Control and Prevention currently recommend antiviral treatment and chemoprophylaxis with either oseltamivir or zanamivir against novel H1N1 influenza for people at high risk of

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complications, including pregnant women (5). Oseltamivir treatment should be initiated as soon as possible, ideally within 48 hours of onset of symptoms. In addition, any pregnant woman hospitalized with confirmed, probable, or suspected novel influenza A (H1N1) virus infection should receive oseltamivir, even if >48 hours have elapsed since illness onset (5). Supportive therapy includes IV fluids, parenteral nutrition, oxygen therapy, ventilatory support, antibiotics for secondary infection, vasopressors for shock. In addition, treating fevers in pregnant women with acetaminophen is important because maternal hyperthermia has been associated with various adverse fetal and neonatal outcomes (5). Pregnant women who are in close contact with a person who has a confirmed, probable, or suspected case should receive a 10-day course of chemoprophylaxis with zanamivir or oseltamivir (5).

A study using an ex vivo human placenta model showed that oseltamivir was extensively metabolized by the placenta. Transplacental transfer of the metabolite was incomplete with minimal accumulation on the fetal side. In postmarketing surveillance, 90 pregnant women who took therapeutic doses of oseltamivir (75 mg twice a day for up to 5 days) during the first trimester only 1 malformation (1.1%) was found, which is within the incidence of major malformations in general population (1%-3%) (5,6).

Lactation and H1N1: Antiviral treatment can be given to children as young as 1 year. However, animal studies suggest central nervous system accumulation of oseltamivir in infants < 1 year and can lead to uncommon neuropsychiatric adverse events among children exposed

to drug directly and indirectly (4). As such no guidelines are available for lactating women and no data is available regarding the drug reaching breast milk. Thus, lactation should be temporarily stopped by the females who are confirmed/suspected cases to prevent close contact of infant and making him prone for H1N1 infection and secondly to prevent unnecessarily exposure of drug to infant by breast milk.

Pregnant and Lactating women require effective preventive measures and those with symptoms of influenza (or following exposure to patients with influenza) require close clinical monitoring, early diagnosis, and prompt treatment to avoid complications and deaths during current pandemic.

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