H1N1-A (Swine flu) and Seasonal Influenza

Influenza, commonly known as the “flu”, is a contagious viral disease that typically occurs in the winter months and causes cough, fever, sore throat, headache, chills, muscle aches and fatigue. This year a new strain of influenza known as the Swine “flu” or H1N1-influenza has appeared, raising concerns that it might represent a much more serious illness than typical seasonal influenza. So far those fears have not been realized and the H1N1-A flu virus appears to cause an illness similar to that caused by the typical seasonal influenza virus. The H1N1-A virus has caused some deaths, just as does seasonal influenza. Some pregnant women as well as certain adults and children with significant underlying medical conditions have been reported to experience more serious infections than average. There is no experience or information available about the relative risk of H1N1 for patients with A-T, but we hope to collect this information.

Influenza (caused by both the H1N1-A and seasonal viruses) is transmitted from person to person by airborne droplets formed during coughing and sneezing. These droplets are inhaled or land on mucus membranes (lining of the nose or inside of the mouth) or the conjunctiva (the thin membrane that covers the surface of the eye). Influenza virus also can be transmitted orally. Good hygiene and frequent hand washing are important to prevent transmission. For most people, the “flu” lasts only a few days, but some people get much, much sicker. Influenza can lead to pneumonia and is of particular concern in people with pre-existing heart and/or lung conditions, and those who may have trouble with cough and clearing their airways.

Prevention

Common sense hygiene practices are critical in helping to limit the spread of the virus. The CDC recommends that patients refrain from returning to work or school until 24 hours after body temperature has returned to normal without fever-reducing medication. It is also recommended that all people cough into their elbows or sleeves, and wash their hands frequently.

The most effective way to avoid an infection with influenza is to receive the influenza vaccine annually. Influenza vaccines are safe and effective and, contrary to a common misconception, they do not cause the “flu”. Because the influenza virus characteristically changes or mutates from year to year, each year it is necessary to prepare a new vaccine for protection from the new “flu” strains that are present that year. For this reason it is essential that everyone get immunized against the seasonal “flu” every year because last year’s vaccine may not be protective against this year’s virus strains. Currently there are two different types of seasonal “flu” vaccine available in the US - the inactivated or “killed” “flu” vaccine (the flu shot) and a live attenuated influenza vaccine (nasal spray). Both are highly effective in preventing influenza in normal individuals.

This year a swine flu virus has mutated to allow that virus to cause disease in humans and, therefore, a new vaccine to protect against this mutant virus needed to be prepared. Because swine flu appeared after the seasonal “flu” vaccine for this year had already begun to be manufactured, a separate vaccine was needed. This year there are separate vaccines for the seasonal “flu” and the H1N1-A virus, so **everyone** receiving the seasonal influenza vaccine should also receive the HINI-A vaccine.

The “Flu-Shot”

The most commonly used vaccine, often called the “flu shot,” is a killed virus vaccine that can be given to individuals ranging from 6 months to senior citizens. This inactivated vaccine can be used by everyone except individuals who have had an allergic reaction to eggs.

This traditional vaccine requires an injection and may cause local swelling and tenderness at the injection site. For children receiving the flu shot for the first time, two injections spaced about one month apart are

required. These should preferably be given in September and October before the influenza season begins. In subsequent years, only a single vaccine dose is required. Unfortunately, children who only received a single dose of vaccine in the first year often do not develop protective immunity and two doses should be given to the child in the second year.

The vaccine for H1N1-A swine flu is now being manufactured and the first doses should become available sometime in October 2009. Supplies will be limited initially and you should check with your doctor periodically to determine availability.

FluMist®

The other vaccine is a live attenuated influenza virus (LAIV) vaccine that is administered by droplets given into the nose (FluMist®). Attenuation means that the virus has been weakened so that it does not cause illness in normal healthy people.

FluMist® is approved for individuals ranging from 2 to 49 years old. Administration does not require any injections. However, since it is a live virus vaccine, it has some theoretical risk for patients with defective immunity. Patients with HIV infection and immunodeficiency have been given this live agent vaccine without problem, but there have been no studies of patients with A-T or other primary immunodeficiency diseases. It is the general recommendation that patients with B and T lymphocyte disorders not be given this form of influenza vaccine (FluMist®). This would include people with A-T.

As with any live virus vaccine, concern has been raised about the possible spread of the vaccine virus from an immunized person to a close contact such as a family member with primary immunodeficiency. Studies looking for such spread in nursery schools where only some children received the FluMist® found the level of spread to non-immunized classmates was very low. This observation gives us some reassurance that the risk of the spread of this agent from a FluMist® immunized child or adult to an immunodeficient family member should also be low. Furthermore we are not aware of a single instance of a patient with a primary immunodeficiency disease developing influenza as a result of contact with a FluMist® immunized individual, despite several million doses of this vaccine being used each year for the past several years. **As a general recommendation, only patients with the most severe forms of primary immunodeficiency (babies with untreated severe combined immunodeficiency) should avoid contact with individuals recently immunized with FluMist®. This will NOT apply to the vast majority of patients with A-T, even those receiving gamma globulin. Please contact your doctor if you have specific questions.**

The CDC Advisory Committee on Immunization Practices (ACIP) issued the following recommendation concerning FluMist® (LAIV) use in individuals in close contact with patients with impaired immune systems. *"The flu shot is preferred for people (including health-care workers and family members) in close contact with anyone who has a* severely *weakened immune system (requiring care in a protected environment, such as a bone marrow transplant unit). People in close contact with those whose immune systems are less severely weakened (including those with HIV) may get LAIV."* The live H1N1 vaccine should carry the same low level of risk as does the live seasonal influenza vaccine.

Primary Immunodeficiency Family Plan

As a precaution, for families with a member who has A-T, we recommend that **all members of the family group be given the inactivated (killed) vaccine for both the seasonal and H1N1 influenza**. The vaccines usually become available in August or September. Studies have shown that immunization can still be effective when given well into February or March in some years, so it is important to ask for the vaccine even if the New Year has passed.

Why do we recommend that everyone be immunized? First, most patients with A-T are likely to benefit

from the vaccine. Even if they don't, there is little down side to receiving the inactivated vaccine. Family members who are able to respond to the vaccine will be protected (a good thing in its own right). Even if the patient with A-T does not respond to the immunization, he/she will benefit from having everyone else in the family protected from infection and not susceptible to bringing the virus home with them. We want to create a "protective cocoon" of immunized persons surrounding our patients so that they have less chance of being exposed. It would be a good strategy to encourage employers to provide influenza immunization programs at the place of work, and for schools to similarly encourage immunization of the student body to further extend this "cocoon."

Individuals with A-T have at least the same risk of contracting swine flu as does the rest of the population. The same type of anti-viral medicine, i.e. Tamiflu or Relenza®, which is effective for people with normal immune systems, should be effective for patients with A-T who get the H1N1 influenza. Note that current IgG replacement therapy may or may not protect against the seasonal 'flu', but will certainly not contain protect against swine "flu".

Influenza can usually be diagnosed rapidly by a test done in physician offices. Unfortunately the test has proven to be unreliable in detecting the swine flu and therefore this year it is recommended that persons experiencing the symptoms of the flu go immediately get anti-virus treatment without waiting for a confirmative test. Speed is important in this situation since the antiviral medications are most effective if begun within 48 hours of the onset of the illness. It would be a good idea to discuss with your physician plans for dealing with influenza before you get sick so that you are prepared. If you do become ill you should contact your doctor immediately about initiating treatment. However, it would be wise to contact your physician first, before going to their office, an urgent care facility or emergency room. It would not be a good idea to take anti-viral medicine with every cold, but only for relatively clear-cut symptoms of the flu (cough, high fever, sore throat, headache, chills, muscle aches and fatigue).

During the flu season, you may want to stay away from crowded public places, such as shopping malls, if you are concerned about exposure. Most people can get information from the national media and from their physicians on other ways to prevent exposure, as well as when to use additional precautionary measures.

For more, updated information on the Swine Flu, go to the CDC Website:
http://www.cdc.gov/swineflu
For more information about the H1N1 Vaccine, see the CDC Website:
http://www.cdc.gov/h1n1flu/vaccination/public/vaccination_qa_pub.htm

What do I do if there is seasonal or swine flu in the schools or at my workplace?

There is no single recommendation that is applicable to every situation. Some medical advisors recommend that unless H1N1 or seasonal flu is in their classroom, children with primary immunodeficiency including A-T should go to school. If there is a known direct contact with secretions from a "flu"-affected (H1N1 or seasonal "flu") child or adult by the person with A-T, that person should take Tamiflu once a day for 10 days. If the person with A-T develops symptoms of influenza, he/she should take Tamiflu twice a day for 10 days. Relenza could also be used as the anti-viral treatment. The same treatment recommendations should apply to children and adults with A-T. As stated earlier, only patients with the most severe forms of immunodeficiency need to strictly avoid contact with individuals recently immunized with FluMist®.

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Questions and Answers

What is the difference between the live seasonal flu vaccine from the live H1N1 version for patients with A-T?

There should be no difference between the seasonal and H1N1 live vaccines as far as potential risk to A-T patients is concerned. However, the IDF recommends that patients with primary immunodeficiency (including A-T) not receive either live seasonal influenza virus vaccine (FluMist®) or live H1N1 intranasal vaccine even though the level of potential risk is low.

Is there any risk associated with a patient with primary immunodeficiency disease being in contact with someone who has recently received the live H1N1 vaccine?

According to the CDC, "The flu shot is preferred for people (including health-care workers and family members) in close contact with anyone who has a ***severely*** weakened immune system (**requiring care in a protected environment, such as a bone marrow transplant unit**). People in close contact with those whose immune systems are less severely weakened (including those with HIV) may get the live attenuated vaccine." Our recommendation is that only patients with the most severe forms of immunodeficiency need to strictly avoid contact with individuals recently immunized with FluMist®. This will not apply to most patients with A-T.

What are school guidelines for children with primary immunodeficiency diseases in regard to contact with recipients of the live vaccines?

Using the guidelines from the CDC, children with all but the most severe primary immunodeficiency should not be at risk from contact with recent recipients of the live virus vaccine. Those children who are this severely affected would not be well enough to be attending school in any event.

Is there at least one form of shot that will have live or partial live virus in it for H1N1?

All vaccines that are given by injection are the killed virus vaccines. The one live virus vaccine available now (FluMist®) is given as drops administered into the nose and not by injection, and it is likely that the live H1N1 vaccine would be given the same way.

How are people to know which shot is acceptable?

Although the killed virus vaccine is being produced by several manufacturers, they all are equivalent and one should not worry about which of these killed vaccines to choose. The manufacturer of the live vaccine (FluMist®) does not manufacture a killed vaccine.

Although a test for H1N1 can be done in a physician's office, most physicians' offices are not testing, and people have been turned down when they've asked to be tested. What are they supposed to do at that point?

The clinical diagnosis of influenza is usually easy, particularly when there is a wide spread outbreak. Persons affected usually have high fevers, a sore throat, aching and other symptoms. The standard office test used for influenza has proven to be unreliable for the H1N1 virus and therefore it is recommended that the lab test is not necessary and might be misleading. From the point of view of patients with A-T, whether the flu is H1N1 or seasonal influenza, both are expected to have a similar severity profile and would be treated identically.

What do we do if someone in the family becomes ill with influenza?

Although antiviral medications are usually not recommended for individuals who do not have underlying medical conditions that might result in complications, we recommend that immediate family members with influenza who will be in close contact with A-T patients with A-T be treated with anti-viral drugs to reduce the level of exposure of the A-T patient. The patient should also be given 10 days of prophylactic antiviral drug treatment if exposed to someone with influenza, and should immediately be treated with full dose antivirals if they develop influenza symptoms.

Your doctor will be able to prescribe either Tamiflu or Relenza as antiviral treatments. We recommend contacting your physician immediately if anyone in the family becomes ill with symptoms of influenza to make plans for all members of the family.

Howard Lederman, M.D., Ph.D
Revised from a consensus statement prepared by
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