



H1N1 Virus: Implications for Rheumatology

As the fall begins, both rheumatologists and patients are concerned about the impact of the seasonal influenza virus. This year, there is the additional worry about the impact of the novel 2009 H1N1 (swine) flu virus. Rheumatologists have become accustomed to recommending, or administering seasonal, influenza vaccines, as many of our patients meet the guidelines for annual vaccination. The guidelines for 2009 H1N1 flu vaccination are similar, but not exactly the same. This Hotline is intended to provide rheumatologists and their offices with the most current information on recommendations for management of both seasonal influenza and 2009 H1N1 flu. The approach to the swine flu, and particularly vaccination strategies, has been changing rapidly; readers are cautioned to consult the CDC and FDA Web sites for any updates (see links at the end of this Hotline).

Seasonal Influenza Vaccines: Seasonal influenza occurs in the U.S. during the late fall to early spring period, and its associated morbidity and mortality has led to recommendations to immunize high-risk groups (children < 2 years of age, adults ≥ 50, patients with a serious medical condition, and immunocompromised patients). Groups at risk for transmitting the virus, including children < 18 years of age, healthcare workers, and household contacts of high-risk groups, should also be vaccinated. Vaccination is recommended as soon as the vaccine is available for the season (usually in September each year), and a single dose is adequate. A live attenuated nasal vaccine is available, but should not be given to those taking immunosuppressive medications, or in contact with immunosuppressed persons. The humoral response to influenza vaccine, while potentially diminished, appears to be adequate for patients receiving biologic and non-biologic DMARDs. There is also no evidence that vaccinating patients on these medications leads to complications or worsening of the underlying disease. Influenza vaccination is appropriate for patients treated with both biologic and non-biologic DMARDs, and concern over the level of response should not preclude this.

Novel Influenza (2009 H1N1) Strains: April 2009 brought the first reports of a novel influenza A (H1N1) virus causing human infections. Termed swine flu because this virus is endemic in pigs, it is distinct from the human influenza A (H1N1) viruses previously in circulation. Therefore, most individuals have no pre-existing antibodies to its key surface epitopes. Several companies are developing vaccines directed against this novel H1N1 influenza A and these will be available by mid-October 2009. It appears that a single injection will be adequate and will confer protection 8-10 days after vaccination. The vaccines themselves are made using the same process used to produce seasonal influenza vaccines, so that adverse reactions are not anticipated to be any different. Seasonal influenza vaccine and H1N1 vaccine may be administered at the same time. A live, attenuated H1N1 vaccine is expected to be available, but its use should be subject to the same restrictions as the seasonal live, attenuated influenza vaccine.

Adverse Effects: Because influenza vaccines are manufactured with chicken eggs, they are contraindicated in patients with a history of anaphylactic reactions to eggs or egg proteins. Thimerosal is used as an antibacterial in multidose vials of influenza vaccine. Single dose vials and LAIV sprays do not contain thimerosal. Vaccines administered to children <6 months of age are now produced with significantly reduced amounts of thimerosal, but there is no evidence of risk to other populations, including pregnant women, aside from local hypersensitivity reactions. Administration of the swine flu vaccine in 1976 was associated with an increased frequency of Guillain-Barré syndrome. However, a substantial increase in GBS has not been reported for any of the seasonal influenza vaccines available since then.

Recommendations for Vaccination and Management of H1N1: The groups at risk for H1N1 infection and complications are similar to those at risk with the seasonal influenza virus, and recommendations for vaccination are correspondingly similar. Three specific groups likely to be seen by rheumatologists should receive H1N1 vaccine when available:

- Patients with inflammatory arthritis and other systemic inflammatory diseases
- Patients receiving immunosuppressive medications, including steroids, non-biologic and biologic DMARDs

- Patients with multiple chronic medical conditions, such as asthma, diabetes, heart disease, or malignancy, that put them at risk for influenza complications, including osteoarthritis patients with one of these conditions

In addition, pregnant women, health care and emergency response workers, young children age >6 months to 18, young adults age 19-24, and those who live with or care for children < 6 months old are high priority candidates for H1N1 vaccination. Limited availability of H1N1 vaccine is expected by early October 2009, with widespread availability by the end of the month. If enough vaccine is available, it should be offered to the same individuals who are appropriate to receive the seasonal influenza vaccine. Vaccination should begin as soon as the vaccine is available, but vaccination is recommended at any time during the flu season. Inactivated H1N1 and seasonal influenza vaccines can be given at the same time, however, LAIV H1N1 and LAIV seasonal vaccines should not be given at the same time. H1N1 vaccine will be distributed through state health departments; the CDC Web site has contact information for these offices at <http://www.cdc.gov/h1n1flu/vaccination/statecontacts.htm>. The vaccine is provided free, but practitioners may bill for administration (<http://www.cms.hhs.gov/MLNMArticles/downloads/se0920.pdf>). The AMA recently released new CPT codes to bill for the administration of 2009 H1N1 influenza vaccination, effective immediately. See <http://www.ama-assn.org/ama/pub/h1n1/resources/cpt-codes.shtml> for details.

Managing Infected Individuals: Persons with suspected 2009 H1N1 influenza or seasonal influenza who present with an uncomplicated febrile illness generally do not require treatment. Those who do get sick should be advised to avoid work, school or travel until 24 hours after they become afebrile without fever reducing medications. The 2009 H1N1 strain appears to be sensitive to oseltamivir (Tamiflu®) and zanamivir (Relenza®); either medication may be used, although zanamivir is not recommended for persons with asthma or underlying respiratory disease. Antiviral therapy is appropriate for anyone hospitalized with suspected influenza or anyone at high risk for influenza complications, including children <5 years of age, adults >65 years of age, pregnant women, and those with chronic illnesses or receiving immunosuppressive medications. When the clinical presentation is consistent with influenza, antiviral therapy should not be delayed by waiting for laboratory confirmation. Antiviral therapy should be initiated early, preferably within 48 hours of symptoms onset and continued for five days. Empiric therapy based on telephone contact with high-risk individuals may be considered. Antiviral therapy for individuals exposed to someone with confirmed or presumed H1N1 infection may be appropriate for patients in high-risk groups, but early identification of symptoms and initiation of antiviral treatment at that time (e.g., watchful waiting) is another option. Post-exposure prophylaxis should continue for 10 days after the last known date of exposure.

Further information regarding H1N1 virus and vaccinations is available on the following Web sites:

- www.fda.gov/NewsEvents/PublicHealthFocus/ucm150305.htm - FDA Web page on H1N1
- www.cdc.gov/h1n1flu/ - Primary CDC Web site with information on H1N1
- www.cdc.gov/h1n1flu/vaccination/acip.htm - CDC H1N1 vaccine recommendations
- www.cdc.gov/mmwr/preview/mmwrhtml/rr58e0821a1.htm - MMWR on H1N1 vaccination
- www.cdc.gov/h1n1flu/clinicians/ - Information on H1N1 vaccines for health care professionals treating patients with inflammatory arthritis and related conditions
- www.cdc.gov/h1n1flu/groups.htm - Information on H1N1 vaccines for patients with inflammatory arthritis and related conditions

BOTTOM LINE:

- Keep up to date on the latest information from the CDC and FDA
- Recommend vaccination as individually appropriate for your patients as well as staff
- Be aware of the signs and symptoms of disease
- Consider antiviral therapy or prophylaxis in high-risk individuals reporting symptoms or exposure

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