



PIC QUESTION OF THE WEEK: 10/14/10

Q: Can a patient with an egg allergy receive influenza vaccine?

A: The Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) recommends that all individuals over six months of age receive an annual dose of influenza virus vaccine. Both trivalent inactivated vaccine (TIV) and live attenuated influenza vaccine (LAIV) are considered contraindicated in patients with either histories of life-threatening reactions to previous influenza vaccine administration or severe systemic hypersensitivity to egg protein. Particularly at high risk are patients with a history of IgE-mediated reactions to eggs or other constituents of the vaccines. These signs typically occur within 30 – 60 minutes after exposure to antigen and may present as severe urticaria, angioedema, respiratory arrest, or anaphylaxis. In one study, only 4 of 83 children and adults with histories of egg allergy and positive egg skin tests had a positive prick test with full-strength influenza vaccine. Each of these 83 patients, including the 4 with positive prick tests, was subsequently administered 10% of the standard dose (0.025 ml or 0.05 ml) of TIV and observed for 30 minutes. Minor reactions occurred in only 3 patients. The remaining 90% of the standard dose was then administered to all patients without incident. Another retrospective trial included 261 children (6 months to 18 years) with documented egg allergy. One group (n=146) received a vaccine skin test prior to administration of vaccine while the other (n=115) had no vaccine skin test but two graded doses (10% then 90%) with observation at 30-minute intervals. Those with a positive skin test to vaccine in the initial group did not receive the vaccine. In the first group, 95% tolerated the vaccine while 97% in the second group received the vaccine without adverse reactions. The authors concluded that egg-allergic patients with no history of anaphylaxis to egg can safely receive the graded two-dose regimen of influenza vaccine. Ovalbumin is considered the major protein in egg and the responsible antigen in patients with egg allergy. Most authors now recommend that patients with egg allergy receive vaccine containing < 1 µg per 0.5 ml dose. Of the available TIV formulations, *Afluria*, *Agriflu*, *Fluarix*, and *Fluvirin* meet this criterion. LAIV (*Flumist*) contains the smallest amount of ovalbumin per dose (<0.24 µg); however, the risk of using intranasal vaccine in patients with egg allergy is unknown. In summary, a history of egg allergy no longer appears to be an absolute contraindication to the use of influenza vaccine. Graded doses of vaccines containing low levels of ovalbumin may be an option in patients with histories of egg allergy.

References

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