



Happy Thanksgiving!

PIC QUESTION OF THE WEEK: 11/21/11

Q: Is it possible for a patient to have an allergic reaction to *systemically* administered corticosteroids?

A: Corticosteroids are commonly prescribed to reduce inflammation and suppress the immune response in patients suffering from allergic reactions and several autoimmune disorders. Paradoxically, these agents have occasionally been reported to actually produce hypersensitivity reactions. These apparent allergic reactions have been classified as either *immediate* or *non-immediate* in nature. Immediate reactions are mediated by IgE and appear within one hour of drug administration. They are characterized by urticaria and rare cases of anaphylaxis. In susceptible individuals, the drug or metabolite may combine with serum proteins, thus becoming antigenic. Non-immediate reactions are T-cell dependent, appear more than one hour after intake, and are characterized by maculopapular eruptions and urticaria. These reactions are considered rare; however, some authors believe the incidence is higher than appreciated. In some cases, the reaction is similar to the clinical presentation of the condition being treated, thus the link to the corticosteroid is often overlooked. There is some evidence of greater cross-reactivity among certain systemic corticosteroids (e.g. hydrocortisone and methylprednisolone); however, other authors have not observed any pattern of cross-reactivity. On occasion, patients have been sensitive to multiple corticosteroids. It is recommended that patients with a history of suspected allergy to systemic corticosteroids undergo skin prick (SP) and intradermal (ID) tests in order to identify a suitable alternative agent. For *immediate* type reactions, most authors recommend SP evaluation prior to ID testing. For *non-immediate* reactions, only ID testing may be acceptable. In one recent trial (Rachid, et al), 15 patients with a history of systemic reactions to corticosteroids were evaluated through use of SP and ID testing with dexamethasone, methylprednisolone, and hydrocortisone (ID testing with 1:1000, 1:100, 1:10, and full-strength concentrations). Only SP testing was conducted with prednisone and prednisolone. All but one of the subjects had a positive ID test to at least one other corticosteroid. Of the ten who were challenged with an alternative compound after negative ID testing, only one had a positive reaction (pruritus and urticaria with dexamethasone). Although rare, systemic reactions to corticosteroids may occur. Intradermal testing appears to be of benefit in identifying appropriate alternatives.

References:

- Rachid R, Leslie D, Schneider L, et al. Hypersensitivity to systemic corticosteroids: an infrequent but potentially life-threatening condition. *J Allergy Clin Immunol* 2011;127:524-8.
- Torres MJ, Canto G. Hypersensitivity reactions to corticosteroids. *Curr Opin Allergy Clin Immunol* 2010; 10:273-9.
- Rodrigues-Alves R, Spinola-Santos A, Pedro E, et al. Immediate hypersensitivity to corticosteroids: finding an alternative. *J Invest Allergol Clin Immunol* 2007;17:277-85.

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Spero N. Stefanis and Christina J. Sutton, Pharm.D. Candidates

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