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Local and systemic reactions to subcutaneous allergen immunotherapy

Ten years' experience in a pediatric clinic

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Abstract

Background

Local and especially systemic reactions are important problems in subcutaneous immunotherapy (SCIT). Local and systemic reactions develop in 0.7% to 4% and 0.2% of all injections, respectively.

Objective

To evaluate the frequency of and risk factors for reactions developing in pediatric patients undergoing SCIT.

Methods

Local and systemic reactions developing after 14,308 injections between 2003 and 2013 were retrospectively evaluated in the current study using the Subcutaneous Immunotherapy Systemic Reaction Grading System, as recommended by the World Allergy Organization. The type of allergic disease, allergens producing a sensitivity, allergen immunotherapy content, adjuvant content, and the effects of treatment phase on the frequency of adverse effects were investigated.

Results

Of 319 patients, local reactions occurred in 11.9%, wide local reactions occurred in 5%, and systemic reactions occurred in 4.7%. A local reaction was observed in 0.38% of all injections, whereas a systemic reaction was observed in 0.1% of all injections. Local reactions were most frequent in the build-up phase, and systemic reactions were most frequent in the maintenance phase ($P = .01$). Side reactions were more common in patients undergoing SCIT with multiple allergens ($P = .002$) and house dust mite ($P = .001$). No statistically significant difference was found between adjuvant content and adverse effect frequency ($P = .32$).

Conclusions

The frequencies of local and wide local reactions during SCIT were lower than expected. Although systemic reactions were frequently seen, no fatal reaction was observed in the current study. House dust mite SCIT and multiple allergen use increased the risk of reaction.

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