Review: allergen specific immunotherapies reduce symptoms, medication requirements, and bronchial hyper-reactivity in asthma


In patients with asthma, how do different allergen specific (AS) immunotherapies compare for reducing asthma symptoms, medication requirements, and improving bronchial hyper-reactivity (BHR)?

**METHODS**

Data sources: Medline (1966 to December 2001), the Cochrane Airways Group trials register (up to June 2001), Embase, Excerpta Medica, CINAHL, Current Contents, abstracts of dissertations, and reference lists.

Study selection and assessment: studies in any language were selected if they were randomised controlled trials (RCTs) comparing AS immunotherapy with placebo, antigenically inactive controls, untreated controls, or inhaled steroids; or comparing house dust extract with placebo. Studies were assessed for methodological quality using the Jadad scale.

**MAIN RESULTS**

75 RCTs met the selection criteria (n = 3506). Patients who received AS immunotherapy (particularly mite, pollen, and animal dander allergens) had greater symptomatic improvement, had reduced asthma medication requirements, and were less likely to develop asthma symptoms, medication requirements, lung function, CI –1.11 to –0.43). No other comparison groups differed for lung function.

**CONCLUSION**

In patients with asthma, allergen specific immunotherapies reduce asthma symptoms, medication requirements, and bronchial hyperreactivity (BHR), and the development of increased non-specific BHR.

Abstract and commentary also appear in ACP Journal Club.

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**Commentary**

The updated review by Abramson et al **confirms the efficacy of immunotherapy in terms of a reduction in asthma symptoms and use of asthma medication.**

This review discusses information about the benefits of immunotherapy but does not assess the risks or costs. The biggest concern is anaphylaxis. Using data from 1985–1992, the FDA estimated that the crude annual death rate for allergenic extracts is low at 0.7 per million injections, which is roughly similar to fatal reactions to injected penicillin, which range from 0.13–0.4 fatalities per million injections. Clearly, precautions are needed. Although local reactions for AS immunotherapy injections are common, they are simple to manage.

The second relevant consideration regarding AS immunotherapy is cost. In 1996, the cost of AS immunotherapy for the first year was estimated to be US $800 per year and $170 for each year thereafter. In contrast, the newest therapy for asthma (Xolair) may cost US $12 000 per year. Immunotherapy decreases asthma medication use, offsetting its own cost, and may also further decrease costs by limiting the need for concurrent treatment of allergic rhinitis.

Finally, a recent European study tested the hypothesis that AS immunotherapy might prevent the development of asthma. After 3 years of therapy, children with allergic rhinitis who received AS immunotherapy were about half as likely to develop asthma as those who did not. AS immunotherapy is safe and effective when administered by trained healthcare professionals who observe high standards of care.

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1 Turkeltaub PC. FDA Medical Bulletin 1994;24:7.
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