Grass Pollen Immunotherapy as an Effective Therapy for Childhood Seasonal Allergic Asthma


PURPOSE OF THE STUDY. There is abundant evidence to support the use of specific immunotherapy (SIT) in the treatment of allergic rhinoconjunctivitis. Studies that have looked at the role of SIT for the treatment of seasonal allergic asthma are lacking. This study evaluated the safety and effectiveness of SIT for the treatment of seasonal allergic asthma in children.

STUDY POPULATION. A total of 39 of 161 screened subjects 3 to 16 years old were enrolled onto the study from the allergy clinic at St Mary’s Hospital (London, United Kingdom). All of them had history of grass-pollen–induced asthma that required 200 μg of inhaled beclomethasone (or equivalent) daily. All subjects had a positive skin-prick–test response: a positive specific immunoglobulin E level (Pharmacia CAP) to a relevant grass pollen (*Phleum pratense*). Subjects also had a positive conjunctival provocation test. Subjects were excluded if they previously had been treated with grass-pollen immunotherapy or had a history of perennial asthma requiring inhaled corticosteroids, significant perennial allergic rhinitis, or sensitization to a pet present in the household.

METHODS. The study was a single-center, randomized, double-blind, placebo-controlled study over 2 successive pollen seasons. Subjects were randomly assigned to receive SIT or placebo. The primary outcome was the asthma-symptom–medication score during the second pollen season. Secondary outcome measures included lung function, cutaneous, conjunctival, and bronchial allergen reactivity, and both exhaled nitric oxide and sputum eosinophil levels.

RESULTS. The use of SIT was associated with a substantial reduction in asthma-symptom–medication score as compared with placebo (*P* = .04). There was significant reduction in cutaneous (*P* = .02), conjunctival (*P* = .02), and bronchial (*P* = .01) reactivity to allergen after SIT compared with placebo. Children in the 2 groups had similar levels of airway inflammation, although less inhaled steroids were required for those in the active group. No serious adverse events were reported, and no subjects withdrew because of adverse events.

CONCLUSIONS. SIT is effective and well tolerated in children with seasonal allergic asthma to grass pollen.

REVIEWER COMMENTS. There are limited studies that have demonstrated clinical benefits for allergic asthma in double-blind, placebo-controlled trials. The results from this study indicate that immunotherapy can modify the natural progression of asthma by improving lung function. Furthermore, early intervention leads to a greater improvement in FEV₁, which suggests that early use of immunotherapy should be considered in allergic asthmatic patients. Additional studies will be needed to assess whether this improvement in lung function persists after the discontinuation of immunotherapy.

Julie Wang, MD
New York, NY

Long-term Immunologic Effects of Broad-Spectrum Aeroallergen Immunotherapy


PURPOSE OF THE STUDY. To evaluate the long-term clinical effects, skin tests, and specific immunoglobulin E (IgE) levels from subjects who had previously received broad-spectrum aeroallergen immunotherapy several years earlier.

STUDY POPULATION. Eighty-two polysensitized subjects who had previously been enrolled onto a randomized, double-blind, placebo-controlled trial of specific immunotherapy for treatment of childhood allergic asthma were reevaluated in adulthood (mean follow-up interval: 10.8 years) by puncture skin tests and CAP-RAST levels for major aeroallergens. All subjects originally completed at least 18 months of successful immunotherapy on FEV₁ and the mean of the average increase in FEV₁ per year during immunotherapy were significantly higher in group 1 than in group 2.

CONCLUSIONS. Immunotherapy should be started as early as possible at the youngest age to increase a beneficial effect of successful immunotherapy on FEV₁.

REVIEWER COMMENTS. Specific immunotherapy has demonstrated clinical benefits for allergic asthma in double-blind, placebo-controlled trials. The results from this study indicate that immunotherapy can modify the natural progression of asthma by improving lung function. Furthermore, early intervention leads to a greater improvement in FEV₁, which suggests that early use of immunotherapy should be considered in allergic asthmatic patients. Additional studies will be needed to assess whether this improvement in lung function persists after the discontinuation of immunotherapy.

Timothy Andrews, MD
James R. Banks, MD
Arnold, MD
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Timothy Andrews and James R. Banks

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