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[Intervention Review]

Allergen immunotherapy for asthma

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ABSTRACT

Background

Allergen specific immunotherapy has long been a controversial treatment for asthma. Although beneficial effects upon clinically relevant outcomes have been demonstrated in randomised controlled trials, there remains a risk of severe and sometimes fatal anaphylaxis. The recommendations of professional bodies have ranged from cautious acceptance to outright dismissal. With increasing interest in new allergen preparations and new methods of delivery, it was time to conduct another systematic review of allergen specific immunotherapy for asthma.

Objectives

The objective of this review was to assess the effects of allergen specific immunotherapy for asthma.

Search methods

We searched the Cochrane Airways Group trials register up to June 2001, MEDLINE, Dissertation Abstracts, Current Contents and reference lists of articles.

Selection criteria

Randomised controlled trials using various forms of allergen specific immunotherapy to treat asthma and reporting at least one clinical outcome.

Data collection and analysis

Three reviewers independently assessed eligibility of studies for inclusion. Two reviewers independently performed quality assessment of studies.

Main results

Seventy-five trials were included (52 of 54 previously included trials and 23 new trials). A total of 3,506 participants (3,188 with asthma) were involved. There were 36 trials of immunotherapy for house mite allergy; 20 pollen allergy trials; ten animal dander allergy trials; two *Cladosporium* mould allergy, one latex and six trials looking at multiple allergens. Concealment of allocation was assessed as clearly adequate in only 15 of these trials. Significant heterogeneity was present in a number of comparisons. Overall, there was a significant reduction in asthma symptoms and medication and improvement in bronchial hyper-reactivity following immunotherapy. There was a significant improvement in asthma symptom scores (standardised mean difference -0.72, 95% confidence interval -0.99 to -0.33) and it would have been necessary to treat 4 (95%CI 3 to 5) patients with immunotherapy to avoid one deterioration in asthma symptoms. Overall it would have been necessary to treat 5 (95%CI 4 to 6) patients with immunotherapy to avoid one requiring increased medication. Allergen

immunotherapy significantly reduced allergen specific bronchial hyper-reactivity, with some reduction in non-specific bronchial hyper-reactivity as well. There was no consistent effect on lung function.

Authors' conclusions

Immunotherapy reduces asthma symptoms and use of asthma medications and improves bronchial hyper-reactivity. One trial found that the size of the benefit is possibly comparable to inhaled steroids. The possibility of adverse effects (such as anaphylaxis) must be considered.

PLAIN LANGUAGE SUMMARY**Injecting allergens under the skin (allergen specific immunotherapy) can reduce asthma and use of medication, but with a risk of severe reactions.**

Asthma attacks can be caused by allergies, pollens, cigarette smoke or air pollution and can be fatal. An allergen is a substance that causes an allergic reaction in a person sensitive to it. Allergen specific immunotherapy involves having injections of increasing amounts of the allergen under the skin. It is also called hyposensitisation or desensitisation, and there is a risk of severe allergic reactions. The review of trials found that immunotherapy can reduce asthma symptoms, the need for medications, improve the sensitivity of the lungs and reduce the risk of severe asthma attacks after future exposure to the allergen.