

Scientific summary

HEALTH ECONOMIC ANALYSIS OF ALLERGEN IMMUNOTHERAPY (AIT) FOR THE MANAGEMENT OF ALLERGIC RHINITIS, ASTHMA, FOOD ALLERGY AND VENOM ALLERGY: A SYSTEMATIC OVERVIEW

Background: The European Academy of Allergy and Clinical Immunology (EAACI) is developing guidelines for allergen immunotherapy (AIT) for the management of allergic rhinitis, allergic asthma, IgE-mediated food allergy and venom allergy. To inform the development of clinical recommendations, we undertook systematic reviews to critically assess evidence on the effectiveness, safety and cost-effectiveness of AIT for these conditions. This paper focusses on synthesizing data and gaps in the evidence on the cost-effectiveness of AIT for these conditions.

Methods: We produced summaries of evidence in each domain and then synthesized findings on health economic data identified from four recent systematic reviews on allergic rhinitis, asthma, food allergy and venom allergy, respectively. The quality of these studies were independently assessed using the Critical Appraisal Skills Programme (CASP) tool for health economic evaluations.

Results: 23 studies satisfied our inclusion criteria. Of these, 19 studies investigated the cost effectiveness of AIT in allergic rhinitis, of which seven were based on data from randomized controlled trials with economic evaluations conducted from a health system perspective. This body of evidence suggested that sublingual immunotherapy (SLIT) and subcutaneous immunotherapy (SCIT) would be considered cost-effective using the (English) National Institute for Health and Clinical Excellence (NICE) cost-effectiveness threshold of £20,000/quality adjusted life year (QALY). However, the quality of the studies and the general lack of attention to characterizing uncertainty and handling missing data should be taken into account when interpreting these results. For asthma, there were three eligible studies, all of which had significant methodological limitations; these suggested that SLIT, when used in patients with both asthma and allergic rhinitis, may be cost-effective with an incremental cost-effectiveness ratio (ICER) of £10,726 per QALY. We found one economic modelling study for venom allergy which, despite being based largely on expert opinion and plausible assumptions, suggested that AIT for bee and wasp venom allergy is only likely to be cost-effective for very high risk groups who may be exposed to multiple exposures to venom/year (e.g., bee keepers). We found no eligible studies investigating the cost-effectiveness of AIT for food allergy.

Conclusions: Overall the evidence to support the cost-effectiveness of AIT is limited and of low methodological quality, but suggests that AIT may be cost-effective for people with allergic rhinitis with or without asthma and in high risk subgroups for venom allergy. We were unable to draw any conclusions on the cost-effectiveness of AIT for food allergy.

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