Cost-effectiveness of GRAZAX for prevention of grass pollen induced rhinoconjunctivitis in Southern Europe
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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
The study objective was to assess the cost-effectiveness of an allergen specific immunotherapy (SIT), GRAZAX, for home treatment of grass pollen-induced rhinoconjunctivitis in Southern Europe. The authors concluded that allergen SIT with GRAZAX was a cost-effectiveness strategy in comparison with usual care, from a societal perspective and under a wide range of annual prices in Austria, France, Italy and Spain. The extensive reporting of the economic analysis and the use of a valid source of clinical data enhance the validity of the authors’ conclusions.

Type of economic evaluation
Cost-utility analysis

Study objective
The objective was to assess the cost-effectiveness of an allergen specific immunotherapy (SIT) for home treatment of grass pollen-induced allergic rhinoconjunctivitis in Southern Europe. The patient population included individuals aged 18 to 65 years with at least a 2-year clinical history of significant grass pollen-induced allergic rhinoconjunctivitis.

Interventions
The study examined a new tablet-based SIT, GRAZAX, started at least 8 weeks before the grass pollen season. This treatment was compared with symptomatic medication against grass pollen-induced allergic rhinoconjunctivitis, which represented standard care in each country.

Location/setting
France/Italy/Spain/Austria. Community.

Methods
Analytical approach:
This economic evaluation was based on a single study. The time horizon of the analysis was 9 years. The authors stated that a societal perspective was adopted in the study.

Effectiveness data:
The clinical data were derived from a published multinational phase III randomised clinical trial (RCT). The trial included 634 patients, of which 316 were allocated to GRAZAX and 318 to placebo. The duration of the trial was extrapolated to a 9-year time horizon assuming that, after 3 years of treatment, there would be an additional sustained effect for 6 more years. The key clinical end point was the reduction in rhinoconjunctivitis symptoms with GRAZAX compared with standard care (placebo arm of the trial). Other details of the RCT were not reported.

Monetary benefit and utility valuations:
Utility valuations were estimated in the RCT using the country-specific EuroQol-5D instrument, based on a weekly diary maintained during the pollen season. The data were pooled among countries in order to obtain common utility weights, given the relatively low number of values available for each single country.

Measure of benefit:
The summary benefit measure was the quality-adjusted life-years (QALYs). These were derived from the RCT and discounted using recommended rates in each country (ranging from 3% for France to 6% for Spain).
Cost data:
The health services included in the analysis were general practitioner (GP) visits, allergy specialist visit, accident and emergency department visits, medications (loratadine, budesonide, prednisone, salbutamol and fluticasone) and productivity losses. With the exception of number of GP visits for the control arm, which was estimated by searching the published literature, resource use was derived from the whole sample of patients enrolled in the RCT. Country-specific unit costs were used and these represented official tariffs, retail drug prices, average wage rates from national statistics bureaus and other official sources. The unit costs and resource quantities were reported. The costs were in euros (EUR) for the years 2004/2005. Future costs were discounted at rates of 3 to 6%, depending on the country. Statistical analyses were performed in order to take both the skewed distribution of resource consumption and the impact of outliers into account.

Analysis of uncertainty:
The annual cost of GRAZAX was varied between EUR 900 and EUR 2,900. The effect of SIT on the future development of asthma was also considered. A further sensitivity analysis was undertaken by excluding Spanish patients, on account of the low pollen count during 2005.

**Results**
Over the 9-year period, the expected gain in QALYs due to SIT was 0.134 (corresponding to 5.4 or 10% extra days in perfect health during the pollen season). When Spanish patients were excluded, this gain increased to 0.156.

In terms of resource used, there was a higher use of symptomatic medications and hours of work lost in the standard care group, while other costs and resource use were similar between groups.

Using EUR 1,200 as the annual cost of GRAZAX, the total costs ranged from EUR 3,862 to EUR 4,192, depending on the country in the treatment group, and from EUR 1,078 to EUR 2,335 in the control group. GRAZAX accounted for between 83% and 91% of the total costs.

The incremental cost per QALY gained with GRAZAX over standard care was EUR 13,870 in France, EUR 20,690 in Italy, EUR 20,955 in Austria and EUR 21,659 in Spain.

The sensitivity analysis showed that the cost of GRAZAX could be in the range EUR 1,500 to EUR 1,900, depending on the country. In addition, the incremental cost per QALY gained remained below the threshold of EUR 29,000, as suggested by the National Institute for Clinical Excellence in the UK. The results of the analysis further improved when the impact of treatment on the future development of asthma was considered.

**Authors’ conclusions**
The authors concluded that allergen SIT with GRAZAX was a cost-effectiveness strategy for grass pollen-induced rhinoconjunctivitis in Southern Europe for a wide range of annual prices.

**CRD commentary**
**Interventions:**
The authors justified their selection of the comparator, which represented the current approach in the countries under examination. This standard treatment also appears to be relevant to other health care settings.

**Effectiveness/benefits:**
The clinical analysis was based on the results from a published RCT, which usually represents a valid source of data because of the strengths of its design. The multinational design and the large sample of patients enrolled further enhances the internal validity of the analysis. Given that the study was published in a separate paper, few details were reported, which means that it is not possible to make an objective assessment of the validity of the other aspects of the clinical analysis. The derivation of the utility valuations was appropriately based on a validated instrument and patient preferences.

**Costs:**
The analysis of the costs appears to have been carried out in a valid and transparent fashion. A breakdown of the cost
items was provided. The viewpoint of the analysis was broad in order to cover all possible payers. The unit costs and the quantities of resources used were presented separately. The sources of the costs were reported clearly for each country. The assumptions made in the analysis were described and justified, and the authors conducted statistical analyses of the costs. Other details, such as the price year and use of discounting, were reported.

Analysis and results:
The synthesis of the costs and benefits was appropriately performed and presented. The sensitivity analysis was restricted to a few aspects of the analysis that were considered uncertain. The authors justified the selection of the four countries, which were similar in terms of disease epidemiology and health care systems. The key aspect of the analysis was the assumption on the prolonged effect of treatment beyond the trial period. This hypothesis, which was crucial in generating the benefits of GRAZAX, was supported by other published studies.

Concluding remarks:
The quality of the study methodology appears robust given the extensive reporting of the economic side and the use of a valid source of clinical data. These aspects of the analysis enhance the validity of the authors’ conclusions.

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Bibliographic details

Other publications of related interest


Indexing Status
Subject indexing assigned by NLM

MeSH
Adolescent; Adult; Aged; Allergens /economics /therapeutic use; Conjunctivitis, Allergic /economics /prevention & control; Cost-Benefit Analysis; Desensitization, Immunologic /economics /methods; Drug Costs /statistics & numerical data; Female; Health Resources /utilization; Humans; Male; Middle Aged; Poaceae; Pollen /immunology; Prospective Studies; Quality-Adjusted Life Years; Rhinitis, Allergic, Seasonal /economics /prevention & control; Tablets

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