A cost-utility analysis of etanercept for the treatment of moderate-to-severe psoriasis in Italy


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
This study examined the cost-effectiveness of etanercept versus non-systemic therapy, for chronic moderate-to-severe plaque psoriasis, in adults who failed to respond to, had a contraindication to, or were intolerant to other systemic therapies. The authors concluded that etanercept was cost-effective, especially for patients with severe disease. The study was well described, but had some limitations due to the need for assumptions that were not fully investigated in the sensitivity analysis. Further studies are needed to corroborate these findings.

Type of economic evaluation
Cost-utility analysis

Study objective
This study examined the cost-effectiveness of etanercept versus non-systemic therapy for the treatment of moderate-to-severe, chronic plaque psoriasis in adults who failed to respond to, or had a contraindication to, or were intolerant to other systemic therapies.

Interventions
Etanercept 25mg twice weekly was compared with non-systemic (i.e., topical) therapy.

Location/setting
Italy/primary care.

Methods
Analytical approach:
The analysis was based on a published Markov model (Woolacott, et al. 2006, see ‘Other Publications of Related Interest’ below for bibliographic details), with a 10-year time horizon. The authors stated that it was carried out from the perspective of the Italian National Health Service.

Effectiveness data:
The clinical data on the treatment effect were from three published etanercept clinical trials, with a maximum of 24 weeks of follow-up. The transition probabilities for disease progression were directly from the published Markov model. The key clinical inputs were the percentages of responders, non-responders, and partial responders with etanercept, based on improvements in the Psoriasis Area and Severity Index (PASI) score.

Monetary benefit and utility valuations:
The utility values were from a published study that used the time trade-off method to elicit preferences from US patients with psoriasis.

Measure of benefit:
Quality-adjusted life-years (QALYs) were the summary benefit measure.

Cost data:
The economic analysis included the costs of hospitalisations, day hospital care, specialist medical examinations, laboratory tests and instrumental investigations, phototherapy, and drug therapies. These costs were from an Italian cost-of-illness study, which took those for treating psoriasis patients (hospitalisations and dermatology clinic visits) from diagnosis-related group data and the remaining costs from the National Tariff Nomenclator. All costs were in Euros.
(EUR) and the price year was 2008.

**Analysis of uncertainty:**
A series of one-way sensitivity analyses was undertaken on some parameters, such as the cost of hospitalisation, cost of etanercept, and the efficacy data, and by discounting the costs and benefits by 3.5% annually. The ranges of values were arbitrarily ±20%. In an alternative scenario, the costs of drug-related side-effects were considered.

**Results**
In the subgroup of patients with moderate or severe plaque psoriasis, with an initial PASI score of 10 or more, over 10 years, the expected costs were EUR 40,051 with etanercept and EUR 32,441 with basal treatment. The QALYs were 6.778 with etanercept and 6.549 with basal treatment, and the incremental cost per QALY gained with etanercept was EUR 33,216.

In the subgroup of patients with severe plaque psoriasis, with an initial PASI score of 20 or more, over 10 years, the expected costs were EUR 55,959 with etanercept and EUR 50,045 with basal treatment. The QALYs were 6.332 with etanercept and 6.100 with basal treatment, and the incremental cost per QALY gained with etanercept was EUR 25,486.

The results of the sensitivity analyses showed that the incremental cost-utility ratios remained below EUR 40,000, except when the cost of etanercept was increased by 20%, for patients with moderate or severe psoriasis. Generally, more favourable estimates were achieved with severe psoriasis.

**Authors' conclusions**
The authors concluded that etanercept was cost-effective, compared with non-systemic therapy, especially for patients with severe disease.

**CRD commentary**

**Interventions:**
The comparators were appropriately selected as the new biologic therapy was compared against the conventional approach for this patient population. A description of the non-systemic strategies would have been useful.

**Effectiveness/benefits:**
The clinical data came from published studies that were presumably known to the authors as no information on a review of the literature was provided. Randomised controlled trials are generally considered to be a valid source of evidence, given their methodological strengths, but the details of these sources were not reported, limiting the transparency of the clinical analysis. The approach used to derive the clinical inputs from the trials and to synthesise them was also not reported. The time trade-off method used to derive the patient preferences for health conditions is generally valid, but the data were from US patients and the authors stated that it was unclear whether these data were transferable to the Italian population. QALYs were an appropriate benefit measure, because the disease has a significant impact on a patient's quality of life.

**Costs:**
The cost categories were consistent with the perspective. A list of cost items was not reported and the unit costs were not presented separately from the resource quantities. The results were clearly analysed and the impact of various cost categories on the results was explicitly discussed. The price year was reported and discounting was assessed in the sensitivity analysis. The impact of variations in the costs was tested in the sensitivity analysis.

**Analysis and results:**
An incremental approach was used to synthesise the costs and benefits and the results were clearly reported. The uncertainty was only partly investigated, as the deterministic sensitivity analyses considered only selected inputs, and they were not varied simultaneously. An extensive description of the model was provided and the authors reported the changes that were made to this model to reflect the Italian setting. The authors acknowledged some limitations of their analysis, such as the lack of long-term data for clinical effectiveness and the exclusion of some items, such as adverse events (both for costs and benefits).
Concluding remarks:
The study was well described, but had some limitations due to the need for assumptions that were not fully investigated in the sensitivity analysis. Further studies are needed to corroborate these findings.

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