Calcipotriol and betamethasone dipropionate in the treatment of mild-to-moderate psoriasis: a cost-effectiveness analysis of the ointment versus gel formulation

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 examined the economic impact of a gel formulation of calcipotriol and betamethasone dipropionate versus the ointment formulation in the treatment of psoriasis for patients with mild-to-moderate psoriasis in Italy. The authors concluded that the use of the gel formulation improved adherence to treatment and reduced health care costs. The study had some methodological limitations and did not fully report the sources used in the clinical analysis, so caution is required when interpreting the authors’ conclusions.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The study examined the economic impact of a gel containing calcipotriol and betamethasone dipropionate versus an ointment formulation in the treatment of psoriasis for patients with mild-to-moderate symptoms. The authors stated that a cost-minimisation analysis was performed as the two formulations have comparable efficacy but other aspects of the treatments, such as compliance, differed.

Interventions
The two treatments under examination were topical formulations (Dovobet gel versus Dovobet ointment) containing calcipotriol and betamethasone dipropionate for patients with a Psoriasis Area and Severity Index (PASI) score of over 10. Dovobet gel contained as combinations of calcipotriol 50µg/g and betamethasone dipropionate 0.5mg/g.

Location/setting
Italy/primary and secondary care.

Methods
Analytical approach:
The analysis was based on a Markov model with a one-year time horizon. The authors stated that the perspective of the Italian National Healthcare Service as a third-party payer.

Effectiveness data:
Most clinical data for the model were taken from the published literature. Some assumptions were also made. No information on the sources of data was reported. Treatment adherence rates were key inputs of the model. Optimal treatment adherence was assumed for gel (75% per year), while a linear decrease of adherence over time was assumed for ointment.

Monetary benefit and utility valuations:
Not considered.

Measure of benefit:
No summary benefit measure was considered as a cost-minimisation analysis was carried out. The proxy for the efficacy of the treatments was the proportion of patients potentially needing treatment with more costly therapies, including phototherapy and biologic drugs.
Cost data:
The costs included topical drugs, phototherapy, conventional systemic drugs, biotechnological drugs, and visits to general practitioners or dermatologists. Costs were taken from official Italian sources, including selling prices for topical treatments and systemic drugs (considering temporary price reductions provided by the Italian Medicines Agency pricing specifications), ex-factory prices for biologic drugs, and the National Tariff Nomenclator for visits. A proposed selling price for the gel formulation was considered based on other European countries, as it was not reimbursed by the Italian system. Costs were in Euros (EUR). The reference year was 2012.

Analysis of uncertainty:
One-way sensitivity analyses were carried out to consider the impact of variations in individual costs to total costs.

Results
Compared with ointment, treatment with gel reduced the proportion of patients potentially needing treatment with more costly therapies by 5%.

Total annual cost per patient for the gel strategy was EUR 406.63, while the annual cost for the ointment strategy was EUR 499.90. The difference was mainly due to better compliance, which reduced the need for more expensive treatments.

The budget impact analysis showed that increasing the use of the gel formulation led to substantial cost-savings to the Italian health care system.

Authors’ conclusions
The authors concluded that the use of a calcipotriol and betamethasone dipropionate gel formulation improved adherence to treatment and reduced health care costs compared with the ointment formulation in patients with mild-to-moderate psoriasis in Italy.

CRD commentary
Interventions:
The rationale for the selection of the comparators was clear as the two available formulation of the same treatment were used.

Effectiveness/benefits:
The clinical side of the study was not clear as some inputs for the model were taken from the published literature but no information was given on the approach used to identify these sources or their characteristics. Treatment effect was likely to have been obtained from clinical trials but this was not explicitly reported. Assumptions were made about treatment adherence based on the higher compliance with the gel formulation compared with ointment. No sensitivity analysis on these parameters was conducted. Thus, it was not possible to judge the validity of the clinical inputs.

Costs:
The costs included in the analysis appeared to be representative of the perspective of the Italian National Health System as stated by the authors. The analysis focused on the cost of psoriasis treatments, so unit costs were reported. Typical Italian sources for costs were used, although the cost of gel and ointment was based on average European prices since they were not reimbursed in Italy at the time of the study. The price year was reported, which would allow reflation exercises. Some costs were varied in the sensitivity analysis, but costs were treated deterministically. A budget impact analysis was also conducted based on different proportions of patients receiving gel and ointment treatments.

Analysis and results:
The cost results were clearly reported, but no efficacy analysis was explicitly carried out because the authors’ assumed equal effectiveness of the two treatments. Uncertainty was not satisfactorily investigated as the sensitivity analyses focused exclusively on the impact of individual cost items. The authors acknowledged some limitations of their analysis, mainly related to the poor quality of studies selected for clinical inputs. Study findings were specific to the Italian setting and could not be transferred to other countries.

Concluding remarks:
The study had some methodological limitations and did not fully report the sources used in the clinical analysis, so caution is required when interpreting the authors’ conclusions.

**Funding**
The study was financially supported by LEO Pharma Spa, Rome Italy (manufacturers of Dovobet gel and ointment).

**Bibliographic details**

**PubMedID**
23028233

**DOI**
10.2147/CEOR.S35046

**Original Paper URL**
http://dx.doi.org/10.2147/CEOR.S35046

**Indexing Status**
Subject indexing assigned by CRD

**MeSH**
Psoriasis; Humans; Dermatologic Agents; Calcitriol; Betamethasone; Gels; Ointments

**AccessionNumber**
22012038115

**Date bibliographic record published**
08/01/2013

**Date abstract record published**
08/04/2013