Cost-effectiveness of a fixed combination of hydroquinone/tretinoin/fluocinolone cream compared with hydroquinone alone in the treatment of melasma


Record Status
This is an economic evaluation that meets the criteria for inclusion on NHS EED.

CRD summary
The authors’ objective was to assess the cost-effectiveness of triple combination therapy applied once daily compared with a single therapy applied twice daily for the treatment of moderate to severe melasma. In all countries the cost per primary success was lower for triple combination therapy. The level of bias in the clinical trial is unclear. The cost of treatment across settings varies significantly. The results are uncertain, but the conclusions are reasonable.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
To assess the cost-effectiveness of triple combination therapy applied once daily compared with a single therapy applied twice daily for the treatment of moderate to severe melasma.

Interventions
A once-daily fixed combination of hydroquinone 4%, tretinoin 0.05% and fluocinolone acetonide 0.01% was compared with twice-daily hydroquinone 4% alone.

Location/setting
US/Argentina/Brazil/Colombia/Chile/secondary care

Methods
Analytical approach:
The economic evaluation was based on an RCT (n=120) conducted across four centres in Brazil. The duration of the trial was eight weeks. The authors stated that a payer's perspective was used.

Effectiveness data:
The main effectiveness parameter was primary success or complete clearing of melasma (melasma score 0, or melasma lesion very similar to surrounding normal skin). Brief details of the trial were presented. Melasma lesions were assessed using a severity scale at baseline and 8-weeks. All patients were assumed to be using a broad spectrum sunscreen (SPF 30) and avoiding exposure to the sun.

Monetary benefit and utility valuations:
Measure of benefit:
Primary success was used as the summary measure of benefit.

Cost data:
Melasma related costs for each of the countries were based on the average usage data from the trial. The cost of the triple therapy was based on Tri-luma; and the cost of the single therapy on Claripel. Costs are based on the size of tube available in each country, and on local currency. The price year was 2004. Costs were reported in local currencies.

Analysis of uncertainty:
A series of one-way sensitivity analyses was undertaken on key parameters and assumptions including: the effectiveness of treatments, an alternative single treatment cost (not Claripel), volume of product successfully applied, inclusion of wastage based on need to purchase whole tubes.
**Results**

In all five countries the success rate for the two treatments was assumed to be the same: triple therapy achieved 35% success compared with single therapy which achieved 5%.

In the US, the cost per treatment for triple therapy was $58 compared with single therapy costs of $114; triple therapy dominated single therapy, it was less expensive and more effective.

In Brazil, the cost per treatment for triple therapy was BRL 149 compared with single therapy costs of BRL 43; the incremental cost per additional primary success was BRL 357.

In Chile, the cost per treatment for triple therapy was CLP 48,282 compared with single therapy costs of CLP 20,212; the incremental cost per additional primary success was CLP 95,529.

In Argentina, the cost per treatment for triple therapy was ARS 215 compared with single therapy costs of ARS 64; the incremental cost per additional primary success was ARS 509.

In Colombia, the cost per treatment for triple therapy was COP 143,200 compared with single therapy costs of COP 33,118; the incremental cost per additional primary success was COP 370,870.

Sensitivity analysis related to effectiveness and resource use produced ICER results ranging from: for the US triple remained dominant, for Brazil from BRL 254 to 600; Chile CLP 68,008 to 197,358; Argentina ARS 362 to 855; and Columbia COP 264,024 to 682,609.

**Authors' conclusions**

In all countries the cost per primary success was lower for triple combination therapy applied once daily compared with single therapy applied twice daily.

**CRD commentary**

**Interventions:**
The two interventions were well described and appear to be relevant comparators, however, it is unclear that these are the only relevant interventions. The scope of the analysis may be limited.

**Effectiveness/benefits:**
The effectiveness data were derived from a multi-centre RCT undertaken in Brazil. Full details of the trial were not reported making an assessment of its internal validity unfeasible. It was assumed that the results of this trial were transferable to the other countries, this included the assumption that wastage would be similar.

**Costs:**
Costs were calculated based on average usage during the trial. Use was combined with a unit cost per gram, calculated based on tube size available and price in each country. Two brands were selected to obtain costs, the use of other available brands or generics was not fully explored. Costs were limited to treatment costs, on the assumption that other costs/use of resources would not vary between treatments: this seemed reasonable.

**Analysis and results:**
An incremental analysis was appropriately conducted. Cost-effectiveness thresholds for each of the settings were not presented, so it is not always clear that triple therapy is a cost-effective option when ICERs are presented. Costs across countries are variable and not generalisable to the UK setting. Sensitivity analysis showed that ICERs increased in all settings, with the exception of the US where triple therapy remained dominant. It is worth noting that the US was the only country where the cost per treatment of triple therapy was lower than the cost of single therapy.

**Concluding remarks:**
The level of bias in the clinical trial is unclear. The cost of treatment across settings varies significantly. The results are uncertain, but the conclusions are reasonable.

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