Cost-effectiveness of a lidocaine 5% medicated plaster relative to gabapentin for postherpetic neuralgia in the United Kingdom

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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 objective was to assess the cost-effectiveness of lidocaine 5% medicated plasters in place of gabapentin in the treatment of postherpetic neuralgia, in patients who had insufficient pain relief with standard analgesics and who could not tolerate, or had contraindications to, tricyclic antidepressants. The authors concluded that the lidocaine plaster was a cost-effective alternative to gabapentin. The methods used were clearly reported and appear to have been valid. The authors' conclusions seem to be appropriate.

**Type of economic evaluation**
Cost-utility analysis

**Study objective**
The objective was to assess the cost-effectiveness of lidocaine medicated plasters in place of gabapentin in the treatment of postherpetic neuralgia (PHN) in patients who had insufficient pain relief with standard analgesics, and who could not tolerate, or had contraindications for, tricyclic antidepressants.

**Interventions**
The interventions compared were lidocaine 5% medicated plaster and 1800mg per day of gabapentin.

**Location/setting**
UK/Primary care.

**Methods**

**Analytical approach:**
This economic evaluation was based on a Markov model which estimated the costs and benefits associated with the two treatment options. The time horizon of the analysis was six months. The authors stated that the study perspective was that of the National Health Service.

**Effectiveness data:**
The effectiveness data were derived from a systematic review of the literature, supplemented with estimates from a Delphi panel when information was not available. The literature review involved searches of EMBASE and MEDLINE to identify prospective clinical trials that evaluated either 1800mg per day or less of gabapentin or the lidocaine 5% medicated plaster for the treatment of patients with PHN. Trials, which were not published in English, and those with less than 50 patients were excluded. The Delphi panel comprised nine general practitioners (GPs) working in England who had experience treating PHN with gabapentin. These GPs were identified and selected by an independent agency. The main clinical outcome was the treatment response.

**Monetary benefit and utility valuations:**
The utility weights were derived from a published study, which used the Health Utilities Index (Mark 3). These utilities were adjusted by the Delphi panel, in some instances, to reflect the predominantly elderly population analysed.

**Measure of benefit:**
The primary measure of benefit was the quality-adjusted life-year (QALY).
Cost data:
The cost categories were those of medications and consultations with GPs and hospital based clinicians. The resource use data were obtained from the Delphi panel in conjunction with published studies and the cost data were taken from official price tariffs. The price year was 2006 and all costs were reported in UK pounds sterling (£). Given the short time horizon, discounting was not performed in the base-case analysis. However, a longer time horizon was explored in the sensitivity analysis and these costs were discounted at an annual rate of 3.5%.

Analysis of uncertainty:
A one-way sensitivity analysis was conducted on all the input parameters, other than the unit costs, to investigate their separate impact on the results. Probabilistic sensitivity analysis was conducted to assess how varying the uncertain parameters simultaneously affected the results. The details of this analysis were presented as cost-effectiveness acceptability curves. In addition, a number of scenario analyses were completed.

Results
Treating PHN patients with the lidocaine plaster for six months cost, on average, £549 per patient and resulted in 0.2991 QALYs. Treating patients with gabapentin for six months cost £718, on average, per patient and resulted in 0.2489 QALYs. The lidocaine plaster was therefore found to dominate gabapentin as it was less costly and more effective.

The results of the probabilistic sensitivity analysis showed that there was a 90% chance that the lidocaine plaster was both less costly and more effective than gabapentin. The one way sensitivity analysis showed that these results were robust to changes in the model parameters.

Authors’ conclusions
The authors concluded that lidocaine 5% medicated plaster was a cost-effective alternative to gabapentin for PHN patients.

CRD commentary
Interventions:
The interventions were clearly reported, and were appropriately selected as they represented the current practice in the authors' setting.

Effectiveness/benefits:
The systematic review of the literature should have ensured that the most relevant and recent evidence was used to populate the model. The use of a Delphi panel to validate these estimates and to estimate the model parameters, which were not available from published studies, is subject to both strengths and limitations. However, the extensive use of sensitivity analyses should have overcome any uncertainty arising from these parameters. The details of the estimates, including their standard errors, were fully reported.

Costs:
The costs appeared to reflect the perspective stated. The unit costs and resource quantities were reported separately and were subjected to extensive sensitivity analysis, which should enhance their generalisability to other settings. Adjustments for the price year and discounting, in the sensitivity analyses, were reported.

Analysis and results:
The authors conducted an appropriate incremental analysis and the full results were presented. The issue of uncertainty was extensively addressed by means of sensitivity analyses. The methods and data used throughout the evaluation were clearly reported, including a diagram of the model. The authors discussed a number of limitations to their analysis including the use of estimates from non-randomised studies and the reliance on a Delphi panel for key data.

Concluding remarks:
The methods used throughout the study were clearly reported and appear to have been valid. The conclusions reached by the authors seem to be appropriate.
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