Randomized trial of a brief physiotherapy intervention compared with usual physiotherapy for neck pain patients: cost-effectiveness analysis


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 brief physiotherapy compared with usual physiotherapy management, in patients with neck pain of musculoskeletal origin. The authors suggested that the brief intervention was a cost-effective alternative to the usual physiotherapy for neck pain. Overall, the analysis was performed satisfactorily and the results were reported in detail. The authors’ conclusions are robust and appropriate.

Type of economic evaluation
Cost-utility analysis

Study objective
The objective was to assess the cost-effectiveness of brief physiotherapy versus usual physiotherapy management in patients with neck pain of musculoskeletal origin.

Interventions
This study compared brief physiotherapy administrated by physiotherapists, with routine physiotherapy management. The brief management was based on cognitive behavioural principles and comprised one session, but could be extended to up to three sessions.

Location/setting
UK/community.

Methods
Analytical approach:
This economic evaluation was based on a single randomised controlled trial (RCT) and had a time horizon of one year. A subgroup analysis on patients’ preference was conducted to assess its impact on the outcomes. The authors did not report the study perspective.

Effectiveness data:
The RCT included patients aged over 18 years, with neck pain of musculoskeletal origin and lasting at least two weeks. A sample of 268 patients was enrolled, with 129 in the usual physiotherapy group and 139 in the brief intervention group. Questionnaires were completed by 78% of the usual group and 81% of the brief group at three- and 12-month follow-ups. The baseline characteristics of the two groups appeared to be different, but confounding due to these baseline differences was minimised using statistical adjustments.

Monetary benefit and utility valuations:
The utility valuations were obtained at baseline, and the third and twelfth months, from the sample of patients enrolled in the RCT, using the European Quality of life (EQ-5D) questionnaire.

Measure of benefit:
The summary benefit measure was quality-adjusted life-years (QALY) and discounting was not required, given the short time horizon. A secondary outcome measure was the Northwick Park Questionnaire (NPQ), which measured the level of neck pain and resulting disability.
Cost data:
National Health Service (NHS) costs, patient costs and productivity costs were reported, but only UK NHS costs were analysed. These included the costs of the general practitioner, physiotherapist, hospital specialist, and other out-patient visits. The resource use was derived from data obtained from patients in the RCT using their diaries and case record forms, which were sent as postal questionnaires. The unit costs were based on data from UK national sources (e.g. British National Formulary, Department of Health, and National Statistics). All costs were expressed in UK pounds sterling (£) at 2002 prices and discounting was not relevant and was not applied.

Analysis of uncertainty:
A bootstrapping approach was used to obtain the 95% confidence interval (CI) for the differential costs and QALYs. Cost-effectiveness acceptability was presented to reflect the uncertainty in the incremental cost-effectiveness ratios. Statistical methods were applied to adjust for censored data and differences in the patient baseline characteristics.

Results
The total costs of treatment were £152 in the usual group and £84 in the brief group, with an incremental cost for the brief group of -£68 (95% CI: −103 to −35).

The additional QALYs over one year were 0.707 in the usual group and 0.706 in the brief group with a difference of -0.001 (95% CI: -0.030 to 0.028). The area under the curve using the NPQ score over one year was 10.2 in the usual group and 10.9 in the brief group with a difference of 0.686 (95% CI: -0.255 to 1.665).

The incremental cost-effectiveness ratio with usual care over the brief intervention was £68,000 per QALY.

The sensitivity analysis showed that usual care was only 50% likely to be cost-effective at a willingness to pay of £20,000 or more for an extra QALY. For the subgroup with a preference for brief intervention, this was the dominant strategy, as it generated higher QALYs at lower costs.

Authors’ conclusions
The authors suggested that the brief intervention was a cost-effective alternative to usual physiotherapy for neck pain.

CRD commentary
Interventions:
The treatments were reported clearly and the intervention was appropriately compared with usual practice.

Effectiveness/benefits:
The use of a RCT to derive the clinical data ensures the high quality of the clinical estimates because well-conducted RCTs are generally considered the gold standard when comparing health interventions. The primary measure of benefit was QALYs. The authors suggested that the EQ-5D utilities might not be adequately sensitive for the health changes observed, but these QALY results were supported by the clinical outcomes. The approach used to derive the QALYs was described.

Costs:
No study perspective was stated, but it was clear that the NHS costs were used in the cost-utility analysis. The resource and cost estimates were relevant to the population and setting and a breakdown of the cost items was given. The sources were described in detail and the price year was reported.

Analysis and results:
The synthesis of the costs and benefits was appropriately performed and clearly presented. A bootstrapping simulation was conducted to address the uncertainty around the costs and QALYs. The adjustment of baseline characteristics, using statistical methods, enhanced the accuracy of the estimates.

Concluding remarks:
Overall, the analysis was performed satisfactorily and the results were reported in detail. The authors’ conclusions are robust and appropriate.
Funding
Funded by the Northern and Yorkshire R&D Executive and Trent Region NHS Executive.

Bibliographic details

PubMedID
16673682

Original Paper URL
http://journals.cambridge.org/download.php?file=%2FTHC%2FTHC22_01%2FS0266462306050859a.pdf&amp;code=ba27af0d5433ac743395fd739ff44a29

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Indexing Status
Subject indexing assigned by NLM

MeSH
Cost-Benefit Analysis; England; Humans; Neck Pain /therapy; Physical Therapy Modalities /economics; State Medicine

AccessionNumber
22006008085

Date bibliographic record published
03/02/2009

Date abstract record published
29/07/2009