Clinical and cost effectiveness of booklet based vestibular rehabilitation for chronic dizziness in primary care: single blind, parallel group, pragmatic, randomised controlled trial


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 cost-effectiveness of booklet-based vestibular rehabilitation with and without telephone support for chronic dizziness that was not attributable to non-vestibular causes and that could be aggravated by head movements. The authors concluded that booklet-based vestibular rehabilitation was simple and highly cost-effective with and without telephone support from the perspective of the NHS. The analysis used a valid methodological framework and the authors’ conclusions appear robust.

Type of economic evaluation
Cost-effectiveness analysis, cost-utility analysis

Study objective
The study examined the cost-effectiveness of booklet-based vestibular rehabilitation with and without telephone support for chronic dizziness not attributable to non-vestibular causes and that could be aggravated by head movements.

Interventions
Three interventions were considered: routine medical care, booklet-based vestibular rehabilitation only and booklet-based vestibular rehabilitation with telephone support.

Patients in the booklet group received self management booklets that provided comprehensive advice on undertaking vestibular rehabilitation exercises at home daily for up to 12 weeks and using cognitive behavioural techniques to promote positive beliefs and treatment adherence.

Patients in the booklet and telephone (combined) group were offered up to three brief sessions of structured support from a vestibular therapist.

Location/setting
UK/Primary care

Methods
Analytical approach:
The analysis was based on a single study with a one-year time horizon. The authors stated that the analysis took the perspective of the UK National Health Service (NHS).

Effectiveness data:
The clinical analysis was based on a single-blind parallel-group pragmatic randomised controlled trial that was carried out at 35 general practices across southern England between October 2008 and January 2011. Allocation of patients to study groups was based on an independent randomisation service. Within each randomisation block of nine patients, those randomised to receive telephone support were further allocated to one of the three available therapists. Patients and therapists could not be blinded to treatment allocation but researchers who assessed outcomes remained blinded over the study period. A total of 5,223 patients were contacted and 337 participated: 276 patients completed the follow-up questionnaire at 12 weeks and 263 completed the questionnaire at one year. There were 112 patients (mean age 58.2
years; 25% men) in the routine care group, 113 patients (mean age 60.5 years; 35% men) in the booklet group and 112 patients (mean age 59.5 years; 27% men) in the combined group. Some characteristics of patient groups differed at baseline and were taken into account in the statistical analyses. Vertigo symptoms were the primary endpoint of the analysis and were assessed by means of self-completion questionnaire packs (vertigo symptom-scale short form) at 12 weeks and one year.

Monetary benefit and utility valuations:
Utility valuations were taken from the clinical trial using the EuroQol EQ-5D instrument. These were also evaluated at 12 weeks and one year.

Measure of benefit:
Quality-adjusted life-years (QALYs) and point change on Vertigo symptom scale – Short form were used as the summary benefit measures.

Cost data:
The economic analysis included the costs of general practitioner (GP) home visits and in surgery, telephone conversations with GP, practice nurse time, counsellor, other outpatient visits, accident and emergency (A&E) contacts, visits to other health care professionals (audiologists, physiotherapists and private doctors), in-patient stay, medicines, telephone conversation with study therapists, booklet materials and transport cost. Quantities of resources used were based on data from the clinical trial. Costs were taken from typical NHS sources such as Personal Social Services Research Unit, British National Formulary, NHS reference costs and the Department of Transport. Booklet cost was taken from the clinical trial. Costs were in UK pounds sterling (£) and were also reported in Euros (€) and United States dollars ($). Costs referred to 2009/2010 prices.

Analysis of uncertainty:
Sensitivity analyses were carried out to adjust for differences in baseline measures and increase the number of participants for analysis by replacing missing data using multiple imputation. Bootstrapping was used to estimate costs, QALYs and to present cost-effectiveness acceptability curves.

Results
At one-year follow-up, QALYs, point change on vertigo symptom scale and total costs were 0.80, 3.2 and £35 with routine care, 0.83, 4.2 and £31 with booklet only and 0.85, 4.5 and £60 with the combined treatment. Incremental analysis showed that booklet only dominated routine care, which was simultaneously more expensive and less effective for both benefit measures. The incremental cost per QALY gained with the combined treatment over booklet alone was £1,363. The incremental cost per point change on vertigo symptom scale was £129.

The cost-effectiveness acceptability curves showed that both the booklet only and the combined interventions were likely to be cost-effective. At low willingness-to-pay thresholds, booklet only was the most cost-effective strategy and for values above £1,200 per QALY the combined intervention was the approach most likely to be the preferred approach.

Authors' conclusions
The authors concluded that booklet-based vestibular rehabilitation was simple and highly cost-effective with and without telephone support from the perspective of the NHS.

CRD commentary
Interventions:
The rationale for selection of the comparators was clear and it appeared that interventions were selected appropriately. There was an appropriate description of the comparators.

Effectiveness/benefits:
The clinical side of the study was carried out satisfactorily as it was based on a well-conducted clinical trial. Methodological details and other information on patient samples were clear. The analysis was based on the intention-to-treat principle to analyse the efficacy of the interventions. Analysis of covariance was used to control for baseline
symptom scores. Power calculations were performed in the preliminary phase of the study. Various statistical approaches were carried out to consider variability in data and missing data. Characteristics of patients groups were reported. Details of the flow of patients through the trial period were clearly presented. The clinical endpoints appeared appropriate to the study question.

Both benefit measures were valid to capture the impact of the disease on patients' health. QALYs were relevant in this specific patient population. Utility values were obtained from the same sample of patients used for clinical outcomes using a validated instrument.

Costs:
Cost categories and sources reflected the perspective of the NHS. Resource use was collected alongside the clinical trial which suggested accurate collection of data. Unit costs were presented for all items but quantities of resource use were only partially reported. Typical UK sources of costs were used. Costs were treated stochastically in the bootstrap analysis. The price year was reported and this enabled reflection exercises.

Analysis and results:
The study results were presented clearly. Costs and benefits were synthesised using an appropriate incremental approach, which allowed inferior strategies to be excluded. A comprehensive probabilistic approach was used to deal with the issue of uncertainty. The methods and results of this analysis and the other sensitivity analyses were reported clearly. The authors acknowledged some limitations of the study such as the low uptake rate, difficulty in blinding participants to intervention groups and the relatively short time horizon of the analysis. Study results should be considered UK-specific and cannot be transferred to other settings.

Concluding remarks:
The analysis used a valid methodological framework and the authors’ conclusions appear robust.

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