
Cost-effectiveness of acupuncture care as an adjunct to exercise-based physical therapy for osteoarthritis of the knee

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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 adding acupuncture to an intervention of advice and exercise for people with osteoarthritis of the knee. The authors concluded that a package of advice and exercise with the addition of acupuncture was cost-effective. The methods were good, and they and the results were presented in full. Considering the scope of the study and the limitations presented by the authors, their conclusions appear to be valid.

Type of economic evaluation

Cost-utility analysis

Study objective

The objective was to assess the cost-effectiveness of adding acupuncture to an intervention of advice and exercise for people with osteoarthritis of the knee.

Interventions

The six-week interventions were advice and exercise; and advice, exercise, and true acupuncture. Advice, exercise, and non-penetrative acupuncture was assessed in the clinical trial, but was not included in the economic evaluation, as it was an exploratory intervention and not applicable to clinical practice.

Location/setting

UK/primary care.

Methods

Analytical approach:

The effectiveness and resource use evidence was from a clinical trial. The time horizon was one year. The authors reported that the perspective was that of the UK NHS.

Effectiveness data:

The clinical and effectiveness evidence was from a clinical trial (Foster, et al. 2007, see 'Other Publications of Related Interest' below for bibliographic details). Patients were recruited to the trial between November 2003 and October 2005, and followed-up for one year. There were 1,061 eligible patients, and 352 were randomly allocated to the groups; advice and exercise (n=116), advice, exercise, and acupuncture (n=117), and advice, exercise, and non-penetrative acupuncture (n=119). The primary clinical outcome was the change from baseline to six months, in the score on the pain subscale of the Western Ontario and McMaster Universities Osteoarthritis Index. Multiple imputation was used for incomplete data.

Monetary benefit and utility valuations:

The utility estimates were derived using the European Quality of life (EQ-5D) questionnaire, administered at baseline, six weeks, six months, and one year. These responses were converted into utility values, using estimates from a large sample of the UK population.

Measure of benefit:

The measure of benefit was quality-adjusted life-years (QALYs) gained. These were calculated for the year, using area-under-the-curve analysis, adjusting for baseline utility, using multiple regression.

Cost data:

The direct costs to the NHS included those of consultations with primary care practitioners, hospital consultant visits, treatment sessions, contacts with other health care providers, and prescription medications. The number and content of treatment sessions were from standard forms completed by the therapists. All other health care resource use was collected from patient-completed postal questionnaires, which included over-the-counter medication use. Multiple imputation was used for incomplete data. The unit costs were from a compendium of UK health care costs, NHS reference costs, and the British National Formulary. The price year was 2004 to 2005 and the costs were in UK pounds sterling (£).

Analysis of uncertainty:

The uncertainty was assessed, using 5,000 bootstrapped replications of the mean QALY and cost differences, with the data pairs plotted on the cost-utility plane. The results were presented in a cost-effectiveness acceptability curve. Several other sensitivity analyses were performed, including the exploration of the impact of missing data by conducting a complete-case analysis, and the inclusion of non-NHS health care resources.

Results

The average NHS cost per patient was £229.14 (SD 179.35) with advice and exercise, compared with £313.95 (SD 164.74) with true acupuncture. Acupuncture had an additional cost of £84.81 (95% CI 41.12 to 128.51) per patient. The additional QALYs gained per patient with acupuncture, compared with advice and exercise alone, were 0.022 (95% CI -0.03 to 0.07).

With the addition of acupuncture, compared with advice and exercise alone, the additional cost per QALY gained was £3,889. The addition of acupuncture was cost-effective, at a willingness-to-pay threshold of £20,000 per QALY gained, in 77% of simulations.

Authors' conclusions

The authors concluded that a package of advice and exercise with the addition of true acupuncture was cost-effective.

CRD commentary

Interventions:

The interventions were clearly reported.

Effectiveness/benefits:

The effectiveness data were from one randomised controlled trial. The full details of this trial were reported elsewhere, and all the main details were given in this paper, including the sample sizes, follow-up period, and main outcome measures. Well-conducted randomised controlled trials are considered to be the gold standard for comparing health interventions, and the results of this trial can be considered to be internally valid.

Costs:

The perspective was explicitly reported. Hospitalisation costs should have been included, for this NHS perspective, but the authors reported that patients were very unlikely to require hospitalisation, during the follow-up period, and data on hospitalisations were not collected. The methods used to collect the resource use data were reported, as were the sources for the unit costs. The price year, time horizon, and currency were reported.

Analysis and results:

The costs and outcomes were appropriately synthesised in an incremental cost-utility ratio. The uncertainty in the results was appropriately tested in statistical and sensitivity analyses. The authors appropriately reported that further evidence was required because the economic benefits of acupuncture could not be attributed to the penetrating nature of true acupuncture as non-penetrative acupuncture was just as effective. Other limitations, reported by the authors, included the fact the study relied on people to recall their health care, which could have introduced bias.

Concluding remarks:

The methods were good, and they and the results were presented in full. Considering the scope of the study and the limitations presented by the authors, their conclusions appear to be valid.

Funding

Support received from Arthritis Research UK, Support for Science, and the Department of Health, UK.

Bibliographic details

Whitehurst DG, Bryan S, Hay EM, Thomas E, Young J, Foster NE. Cost-effectiveness of acupuncture care as an adjunct to exercise-based physical therapy for osteoarthritis of the knee. *Physical Therapy* 2011; 91(5): 630-641

PubMedID

21415230

DOI

10.2522/ptj.20100239

Original Paper URL

<http://ptjournal.apta.org/content/91/5/630.abstract>

Other publications of related interest

Foster NE, Thomas E, Barlas P, et al. Acupuncture as an adjunct to exercise based physiotherapy for osteoarthritis of the knee: randomised controlled trial. *BMJ* 2007; 335: 436-440.

Indexing Status

Subject indexing assigned by NLM

MeSH

Acupuncture Therapy /economics /methods; Combined Modality Therapy; Cost-Benefit Analysis; Exercise Therapy /economics /methods; Female; Great Britain; Humans; Male; Middle Aged; Osteoarthritis, Knee /economics /therapy; Quality-Adjusted Life Years; Treatment Outcome

AccessionNumber

22011001386

Date bibliographic record published

21/09/2011

Date abstract record published

30/11/2011