
Efficacy and cost-effectiveness of physiotherapy following glenohumeral joint distension for adhesive capsulitis: a randomized trial

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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

This study examined the cost-effectiveness of an active physiotherapy programme following arthrographic distension for adhesive capsulitis. The authors concluded that active physiotherapy provided no additional benefits in terms of pain, function, and quality of life, except for a greater active range of shoulder movement, and was not cost-effective over conventional care. The analysis was based on valid and transparently presented methods, which ensures the validity of the authors' conclusions.

Type of economic evaluation

Cost-effectiveness analysis

Study objective

The objective was to examine the cost-effectiveness of an active physiotherapy programme following arthrographic (joint radiography guided) distension for adhesive capsulitis.

Interventions

The intervention was the addition of active physiotherapy to conventional arthrographic distension. The goals of the physiotherapy were to maintain and increase glenohumeral joint range of active and passive motion by stretching the soft tissue structures adjacent to the glenohumeral joint; to improve strength; and to regain proprioception and normal shoulder and trunk biomechanics. Treatments were performed twice a week for two weeks, then once a week for four weeks (eight visits of 30 minutes each). The comparator was arthrographic distension alone, using corticosteroid and normal saline, guided by radiography, plus sham ultrasound and the application of a non-therapeutic gel (placebo).

Location/setting

Australia/out-patient.

Methods

Analytical approach:

The analysis was based on a single study with a six-month horizon. The authors stated that the perspective was societal.

Effectiveness data:

The clinical data came from a prospective, placebo, randomised controlled trial (RCT), in which the participants and assessors were blinded to the treatment allocation. The inclusion and exclusion criteria were reported. There were 156 participants, with 78 in each group. The mean age was 55 years in the physiotherapy group and 55.3 years in the placebo group, while the proportion of women was 65% in the physiotherapy group and 58.1% in the placebo group. The length of follow-up was 26 weeks, and 144 patients (74 in the physiotherapy group and 70 in the placebo group) completed the trial. The key clinical endpoint was the change in the Shoulder Pain and Disability Index (SPADI) score. The SPADI is a self-administered, shoulder-specific, fixed-item questionnaire.

Monetary benefit and utility valuations:

Not included.

Measure of benefit:

The health outcomes were not aggregated and no summary benefit measure was used. The primary endpoints were the

changes in SPADI score; active shoulder movements; perceived recovery; and health-related quality of life, which was assessed using the Short Form (SF-36) health survey and the Assessment of Quality of Life (AQoL) questionnaire.

Cost data:

The economic analysis included the following items: visits, drugs, tests, home assistance, work absence, time, travel, physiotherapy, and only those hospitalisations related to the disease. The data on resource use were the actual consumption of resources in the trial, recorded using monthly diaries. The costs came from published prices, such as Medicare Schedule fees, the average net earnings for the Australian population, and the age-specific average wages in Victoria. All costs were in Australian dollars (AUD). The price year was not explicitly stated. The means and 95% confidence intervals (CIs) for the difference in total costs were estimated using a generalised linear model with a gamma distribution and a log link with robust variance.

Analysis of uncertainty:

No sensitivity analysis was performed, but the total costs were presented as means and 95% CIs.

Results

After 26 weeks, the mean change in SPADI score was 42.4 (SD 22.8) in the placebo group and 40.0 (SD 21.8) in the physiotherapy group. This difference was not statistically significant. Non-significant results were also observed for the other clinical outcomes, except for improvements in active shoulder movement, which favoured the active physiotherapy group at six and 12 weeks (but not at 26 weeks). Participant- and rater-assessed treatment success favoured the physiotherapy group at all time points; pooled relative risk was 1.4 (95% CI 1.1 to 1.7).

The total monthly cost was AUD 336.8 (95% CI 210.6 to 463.0) in the physiotherapy group and AUD 314.0 (95% CI 158.5 to 469.5) in the control group. In general, the cost of the physiotherapy programme was partially offset by a reduction in other costs. The difference of AUD 22.8 (95% CI -177.5 to 223.1) was not statistically significant.

Authors' conclusions

The authors concluded that active physiotherapy provided no additional benefits in terms of pain, function, and quality of life, except for a greater active range of shoulder movement, and was not cost-effective over conventional care.

CRD commentary

Interventions:

The treatments compared were appropriate and justified given that the physiotherapy programme was compared with no additional treatment, which appeared to be the usual care in the authors' setting.

Effectiveness/benefits:

The clinical analysis was satisfactorily carried out. A RCT is considered to be a valid source of evidence due to its randomised and blinded design. Extensive information was reported on the randomisation procedure, the inclusion and exclusion criteria, the use of the intention-to-treat principle, the loss to follow-up, and power calculations, which enhances the transparency of the clinical analysis. At baseline, the study groups were comparable, which further ensures the validity of the clinical comparison. A clear description of the tools used to determine the impact of the interventions was provided. Several benefit measures were used and these were both disease-specific and general, but they were not combined with the costs and a cost-consequences analysis appears to have been carried out.

Costs:

The adoption of a broad perspective was a positive feature of the analysis. The selection of the data sources was appropriate. Statistical tests were appropriately used on the differences in costs between the groups. The data on the unit costs, resource quantities, and the price year were not reported, which limits the transparency of the analysis. The impact of each cost category on the total costs was clearly reported.

Analysis and results:

The costs and benefits were not synthesised, given the cost-consequences framework. The expected costs and benefits were reported in detail. The issue of uncertainty was investigated, using statistical tests around the mean outcomes, but no sensitivity analyses were conducted. The authors stated that, if the value of a reduction in the time with restricted

shoulder movements, along with greater perceived recovery, sustained for six months, was at least AUD 400, then the intervention could be cost-effective.

Concluding remarks:

The analysis was based on valid and transparently presented methods, which ensures the validity of the authors' conclusions.

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Bibliographic details

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Other publications of related interest

Ryans I, Montgomery A, Galway R, Kernohan W, McKane R. Randomized controlled trial of intra-articular triamcinolone and/or physiotherapy in shoulder capsulitis. *Rheumatology* 2005; 44: 529-535.

Van der Windt DA, Koes BW, Deville W, Boeke AJ, de Jong BA, Bouter LM. Effectiveness of corticosteroid injections versus physiotherapy for treatment of painful stiff shoulder in primary care: randomised trial. *BMJ* 1998; 317: 1292-1296.

Indexing Status

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MeSH

Adult; Australia; Bursitis /economics /physiopathology /rehabilitation; Cost-Benefit Analysis; Female; Humans; Male; Middle Aged; Pain Measurement; Physical Therapy Modalities /adverse effects /economics; Quality of Life; Range of Motion, Articular /physiology; Shoulder Dislocation /economics /physiopathology /rehabilitation; Single-Blind Method; Treatment Outcome

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