CONTINUOUS PASSIVE MOTION FOLLOWING TOTAL KNEE ARTHROPLASTY IN PEOPLE WITH ARTHRITIS

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Cochrane Database of Systematic Reviews, Issue 08, 2011 (Status in this issue: NEW SEARCH FOR STUDIES AND CONTENT UPDATED (CONCLUSIONS CHANGED))

DOI: 10.1002/14651858.CD004260.pub2

This review should be cited as: Harvey Lisa A, Brosseau Lucie, Herbert Robert D. Continuous passive motion following total knee arthroplasty in people with arthritis. Cochrane Database of Systematic Reviews. In: *The Cochrane Library,* Issue 08, Art. No. CD004260. DOI: 10.1002/14651858.CD004260.pub2

A B S T R A C T

Background

Total knee arthroplasty is a common intervention for patients with arthritis. Post-surgical rehabilitation often includes continuous passive motion. However, it is not clear whether continuous passive motion is effective.

Objective

To evaluate the effectiveness of continuous passive motion following total knee arthroplasty in people with arthritis.

Criteria for considering studies for this review

We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library 2009, Issue 3), MEDLINE (January 1966 to January 2009), EMBASE (January 1980 to January 2009), CINAHL (January 1982 to January 2009), AMED (January 1985 to January 2009) and PEDro (to January 2009).

Selection criteria

Randomised controlled trials in which the experimental group received continuous passive motion, and both the experimental and control groups received similar postoperative care and therapy following total knee arthoplasty in people with arthritis.

Data collection and analysis

Two reviewers independently selected trials for inclusion. Data were then extracted and the quality of trials assessed. The primary outcomes were active knee flexion range of motion, passive knee flexion range of motion, active knee extension range of motion, passive knee extension range of motion, length of hospital stay, function and incidence of manipulation under anaesthesia. The secondary outcomes were pain, swelling and quadriceps strength. Effects were estimated as weighted mean differences or standardised mean differences with 95% confidence intervals (CI). Meta-analyses were performed using random-effects models for continuous variables.

Main results

Twenty randomised controlled trials of 1335 participants met the inclusion criteria. There is high-quality evidence that continuous passive motion increases passive knee flexion range of motion (mean difference 2 degrees, 95% CI 0 to 5) and active knee flexion range of motion (mean difference 3 degrees, 95% CI 0 to 6). These effects are too small to be clinically worthwhile. There is low-quality evidence that continuous passive motion has no effect on length of hospital stay (mean difference -0.3 days; 95% CI -0.9 to 0.2) but reduces the need for manipulation under anaesthesia (relative risk 0.15; 95% CI 0.03 to 0.70).

Authors' conclusions

The effects of continuous passive motion on knee range of motion are too small to justify its use. There is weak evidence that continuous passive motion reduces the subsequent need for manipulation under anaesthesia.