The Efficacy of Mobilisations with Movement Treatment on Musculoskeletal Pain: A Systematic Review and Meta-Analysis

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Purpose: To perform a quantitative systematic review and meta-analysis of the effectiveness of Mobilisation with Movement (MWM) techniques on clinically relevant outcomes for musculoskeletal conditions.

Relevance: The ability of MWM techniques to generate hypoalgesic effects, increase joint range of motion, and enhance muscle function has previously been reported. Despite several studies reporting the clinical effects of MWM, no systematic review has summarised the evidence for this technique's clinical efficacy.

Participants: Selected studies included participants with a diagnosis of a musculoskeletal condition who were treated with a MWM technique, and which included clinically relevant outcome measures.

Methods: Relevant studies published by October 2009 were identified across MEDLINE, CINAHL, WoS, Sport Discus, PEDro, and Cochrane Library databases without language restriction and from manual searching of reference lists. Non-randomised trials were included as there were very few randomised trials published on this emergent therapy. Two blinded reviewers independently assessed methodological quality using the modified Quality Index.

Analysis: Summary data was extracted and if studies were clinically homogeneous, then a meta-analysis was performed to provide an overall effect estimate for each comparison. Where possible, the Standardised Mean Difference with 95% confidence intervals (SMD; 95% CI) and Relative Risk (RR; 95% CI) were calculated on a random effects model.

Results: 38 studies were included, with designs ranging from randomised controlled trials to single case reports across a number of body regions. Pooled data from two studies (N=48) found the immediate effects of MWM for tennis elbow on pain free grip strength (SMD 1.28; 95% CI 0.84 – 1.73) and pressure pain threshold (SMD 0.49; 95% CI 0.08 – 0.90) were superior to control. One high quality RCT showed MWM in combination with exercise was superior to control at 6 weeks (Success RR 2.44; 95% CI 1.55 – 3.85) and superior to corticosteroid injection at 52 weeks (Success RR 1.38; 95% CI 1.16 – 1.66) for people with tennis elbow. For recurrent ankle sprains, pooled data (2 studies, 37 participants) found a positive immediate effect on ankle dorsiflexion compared with control (SMD 1.18; 95% CI 0.55 – 1.81). Cervical MWM (SNAG) was shown to be efficacious in managing cervicogenic head symptoms (headache, dizziness) in separate RCTs. Given the dearth of high quality studies, there is insufficient published evidence to support or refute the use of MWM in the shoulder, wrist/hand, spine (with the exception of cervicogenic head ache/symptoms (dizziness)), hip and knee.

Conclusions: Level 1b and 2a evidence suggest a positive outcome in the application of MWM to tennis elbow, recurrent ankle sprains and cervicogenic headache. Further studies are required that employ more rigorous methodology, greater participant numbers and a longer follow up timeframe, before conclusions can be drawn as to the efficacy of MWM in other musculoskeletal conditions.

Implications: MWM appears to improve outcomes of pain and function and may be incorporated into the overall treatment plan for patients presenting with tennis elbow, recurrent ankle sprains or cervicogenic headache. The clinical significance of MWM in other musculoskeletal conditions requires further investigation.

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