Spinal manipulation and exercise was better than ultrasound and exercise for patients with chronic low back pain

Synopsis


**Question:** What are the short-and long-term effects of spinal manipulation in patients with chronic low back pain?

**Design:** Randomised controlled trial.

**Setting:** Outpatient physiotherapy department in UK.

**Participants:** 120 people, aged 18–55, with non-specific low back pain of greater than 3 months duration. Participants were excluded if they had a history of prior treatment including manipulation, chiropractic, osteopathy, and ultrasound, or were receiving disability benefit as a result of LBP.

**Interventions:** Both groups were given a written set of exercises, chosen by the physiotherapist for each individual. In addition, one group received high velocity thrust manipulation in side-lying (on average four sessions) and the other group received therapeutic ultrasound (1 MHz, continuous pattern, on average six sessions).

**Outcomes:** Pain intensity (measured on a visual analogue scale, 0–100 mm), functional disability (Oswestry questionnaire, 0–100%), lumbar movements (modified Schober’s test), and muscle endurance (measured by surface electromyography) were measured before treatment, at the end of treatment program, and 6 months after randomisation.

**Results:** Participants in the manipulation/exercise group demonstrated a significantly greater reduction in pain intensity (mean between-group difference 16.4, 95% CI 6.1 to 26.8) and functional disability (mean between-group difference 7.8, 95% CI 2.4 to 13.2), as well as improved lumbar flexion (mean between-group difference 9.4 mm, 95% CI 5.5 to 13.4) and extension (mean between-group difference 3.4 mm, 95% CI 1.0 to 5.8) \( (p < 0.01 \text{ in all instances}). \) After six months the manipulation/exercise group still demonstrated greater benefit than those in the ultrasound/exercise group for pain \( (\text{mean between-group difference 15.1, 95\% CI \ 7.55 \ to \ 22.64}) \) and disability \( (\text{mean between-group difference 5.2, 95\% CI \ 2.63 \ to \ 7.81}) \).

Data for Month 6 are provided by the author because numbers reported in Table 3 in the published paper are incorrect. **Conclusion:** Manipulation and exercise showed greater improvement compared to ultrasound and exercise for participants with chronic low back pain, both at the end of treatment and at six months follow-up.

Commentary

In spite of a large number of pathological conditions being capable of causing low back pain (LBP), a definitive diagnosis is not possible in up to 85% of cases. As a result there is considerable uncertainty in the treatment of this group of patients. Recently, several high quality trials have shown that single physiotherapy treatments (as distinct from combination therapy) may have no benefit over the natural history in patients with acute non-specific LBP. Furthermore, a number of studies have shown little or no difference between various physiotherapy treatments for acute, sub-acute, or chronic cases. Mohseni-Bandpei et al have undertaken this randomised controlled trial comparing manipulation and exercise with ultrasound and exercise for chronic low back patients. The reason for choosing these modalities was that several studies have suggested that manipulation is superior to other treatments for acute LBP, but its efficacy for chronic low back pain is still controversial. Ultrasound on the other hand is still one of the most commonly used modalities in UK for treatment of LBP patients. In the present study it was found that both groups improved, but with a significant difference in favour of the manipulation/exercise group. The findings of the study are intriguing as they are in clear contrast to the conclusions of a recent systematic review (Assendelft et al 2003) which concludes that spinal manipulative therapy is only one of several options of only modest effectiveness for people with low back pain, and truly effective therapy for such patients remains elusive. On the other hand, combination therapy involving manipulation and exercise has been demonstrated to be superior to single interventions (UK BEAM 2004). Clinically, multimodal treatment makes a lot of sense, considering that long-lasting LBP often is multifactorial.

The exercises used in combination with spinal manipulation or ultrasound are not described in detail in this paper, which could have been very informative. However the exercises were prescribed in writing and chosen appropriately by the treating therapist, according to the individual’s condition. This is in line with recommendations for exercises in chronic back pain patients (Hayden et al 2005).

**References**


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