Short-term effects of McKenzie vs. motor control approach for patients with chronic low back pain and a derangement classification

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Background

Motor control exercises (MCE) and mechanical diagnosis and therapy (MDT) have been recommended for treatment of chronic low back pain (CLBP). These approaches have never been compared in a randomised, blinded, controlled trial in a population of subjects reporting CLBP classified with a derangement syndrome.

Derangement syndrome is a cluster of symptoms primarily characterised by the centralisation phenomenon.

MCE are believed to work by improving trunk muscle recruitment. It is unclear if changes in trunk muscle recruitment are specific to MCE or can these changes occur with other exercise such as MDT.

Method

- **Design:** Randomized, blinded, controlled trial with a 2 month follow-up
- **Setting:** Physiotherapy department, Concord Repatriation General Hospital, Sydney, Australia
- **Participants:** 70 adults with more than 3 month history of CLBP and a derangement syndrome
- **Randomization:** Concealed allocation

Patients assessed (n=133) for patients with chronic low back pain and a derangement classification

Patients excluded (n=63)
- Trunk muscle thickness – Ultrasonography
- Global improvement, pain and function - questionnaires

Participants randomized (n=70)

- MDT (n=35)
- MCE (n=35)

Loss to follow-up (n=5)

Participants assessed (n=133) for centralisation/directional preference

Outcomes
- Trunk muscle thickness – Ultrasonography
- Global improvement, pain and function - questionnaires

Both approaches offer similar effects for muscle recruitment and clinical outcomes in a CLBP population classified with a derangement. Change in trunk muscle recruitment appears unrelated to motor control exercises in this group of patients. Between group differences for global improvement scores suggest a greater sense of clinical improvement when treated with MDT for this population; however, it is unclear if the same effect is present in the long-term.

Conclusion

As results for this cohort are similar for muscle recruitment, pain and function irrespective of whether patients receive MDT or motor control exercises, either approach could be recommended, although greater global improvements suggest MDT may be a preferable choice for the short term.

Implications

Statement of ethics

This clinical trial received ethical approval from the Sydney Local Health District Human Ethics Committee of Concord Repatriation General Hospital: HREC /10/CRGH/153

Clinical trial registration

Australian New Zealand Clinical Trials Registry, registration number CTRN12611000971932.

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