Do lumbar stabilising exercises reduce pain and disability in patients with recurrent low back pain?

Synopsis


Question: Does a graded exercise program emphasising lumbar stabilising exercises reduce pain and disability at 12 months, compared with a walking program, for patients with recurrent low back pain? Design: Randomised controlled trial. Setting: A single private physiotherapy clinic in Sweden. Participants: 71 patients with recurrent mechanical low back pain (> 8 weeks duration, with at least 1 pain-free period during the past year) and without leg pain were allocated to one of two groups, using a concealed allocation process. The groups were comparable at baseline with respect to age, sex, proportion of participants who had sought care for back pain, and pain duration (approximately 10 years). Interventions: The graded exercise program and the walking program were both 8 weeks' duration. The exercise program was individually supervised by a physiotherapist weekly for 45 minutes. In the walking program, patients met with a physiotherapist for 45 minutes in week 1 and again in week 8. The exercise program consisted primarily of stabilising exercises for the lumbar spine, commencing with re-learning activation of the transversus abdominis and multifidus muscles, with assistance of a pressure biofeedback cuff. Exercises were progressed according to clinical judgement, pain levels, and movement control and quality. Progression entailed incorporation of muscle activation in upright positions and during functional activities. Continued implementation of the exercises in daily life was encouraged. The reference group were instructed to walk for 30 minutes daily at the fastest pace that did not aggravate pain. Walking compliance was monitored with a self-completed daily diary. Outcomes: The primary outcomes were perceived pain and disability at 12 months, measured by self-completed questionnaires returned by post. Disability was measured with the Oswestry Disability Questionnaire (scale 0–100, where 100 = maximum disability). Pain was measured with 100-mm visual analogue scale (where 100 = worst pain imaginable). Results: At 12 months 86% of patients were followed up. At this time there was no clinically-important difference between the groups with respect to median (IQR) change in pain: exercise group –12 (−34 to −3); walking group –12 (−22 to 0). For disability at 12 months, the between-group difference in median scores was 8 on the Oswestry score: exercise group –10 (−20 to −2); walking group –2 (−12 to 2). Conclusion: Lumbar stabilising exercises appear to have a similar effect on pain and disability for patients with recurrent low back pain as a daily walking program.

Commentary

This is a methodologically sound, randomised, controlled trial investigating the efficacy of stabilising exercises for back pain. The study showed a higher percentage of patients with a clinically important reduction of disability, but not pain, at 12-month follow-up. However, several issues need to be taken into account.

First, the differences regarding pain and disability were no longer clinically relevant at 36 months follow-up.

Second, it can be debated whether walking is a valid control treatment as it has been proven ineffective for chronic patients (Torstensen et al 1998). At best it can be regarded a minimal intervention. As such the results are in agreement with a recent meta-analysis showing that stabilising exercises are more effective than minimal interventions (Macedo et al 2009). It would have been more interesting to compare stabilising exercises to another active form of exercise, or home exercises focussing on patient-relevant activities (as walking might have minimal or no limitation). Based on the abovementioned meta-analysis it is hypothesised that the differences would have been negligible. One can also argue that the control treatment might be less appealing to the patients who were randomised to this treatment. Although the authors state that the level of expectation was equal for both treatments, this was measured before and not after randomisation.

Third, the baseline levels of pain and disability were rather low and patients were all working. Unfortunately the authors don’t provide a full explanation of why they included only working patients. This limits generalisation to primary care physiotherapy practices.

Fourth, although the stabilising treatment aims to alter motor control of the transversus abdominis and multifidus muscles, neither motor control changes nor their association with outcome were assessed.

The positive results of the stabilising exercises are probably caused by general effects of exercise, such as improved self-efficacy (which indeed did occur) or reduced catastrophising (Smeets et al 2006).

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References