

Appraisal

Critically appraised paper: Comprehensive non-surgical treatment leads to improved walking ability in people with lumbar spinal stenosis

Synopsis

Summary of: Ammendolia C, Côté P, Southerst D, Schneider M, Budgell B, Bombardier C, Hawker G, Rampersaud YR. Comprehensive non-surgical treatment versus self-directed care to improve walking ability in lumbar spinal stenosis: A randomized trial. *Arch Phys Med Rehabil*. 2018;99:2408–2419.

Question: Does a comprehensive non-surgical training program improve the walking ability, compared with a self-directed approach, of people with lumbar spinal stenosis? **Design:** Assessor-blinded, pragmatic, randomised controlled trial. **Setting:** Academic hospital outpatient clinic in Canada. **Participants:** Eligible participants were recruited from local hospitals, community clinics, and local newspaper advertisements. Inclusion criteria were being aged ≥ 50 years, symptoms of neurogenic claudication for at least 3 months, imaging-confirmed spinal canal narrowing, ability to walk without assistance for at least 20 m and < 30 minutes, ability to perform mild-moderate exercise, and unlikely surgical candidates within the next 12 months. Exclusion criteria were: previous back surgery; cardiovascular disease or osteoarthritis of lower extremities impacting walking ability; and psychiatric disorders. Randomisation of 104 study participants allocated 51 to the comprehensive training program and 53 to the self-directed program. **Interventions:** The comprehensive training program consisted of training sessions of 15 to 20 minutes, twice per week for 6 weeks, plus a booster session 4 weeks later, instructed by licenced chiropractors. Sessions included one-on-one education on self-management strategies, a standardised set of 18 exercises aimed at improving back and lower extremity fitness and facilitating lumbar flexion (and incorporated in a home program), manual therapy aimed at decreasing pain, improving lumbar flexibility and facilitating

lumbar inter-segmental flexion. The comprehensive training program was supported by a workbook, pedometer and instructional video. The self-directed program comprised the workbook, video and pedometer, and a single 15 to 30-minute session with an independent licenced chiropractor who briefly explained the structure of the 6-week program and reviewed workbook material. **Outcome measures:** The primary outcome was the proportion of participants achieving at least 30% improvement on the self-paced walk test at 6 months. Numerous self-reported questionnaires on symptoms, function and depression were secondary outcomes. **Results:** Ninety (87%) participants completed the primary outcome at 6 months. More people improved their walking ability with comprehensive training (82%) than with the self-directed program (63%) at 6 months (adjusted relative risk 1.3, 95% CI 1.0 to 1.7), and at 12 months (81% versus 59%, respectively) (1.4, 95% CI 1.1 to 1.8). The comprehensive training program significantly improved walking distance compared with the self-directed program at 6 months (MD 421 m, 95% CI 181 to 661) and 12 months (MD 473 m, 95% CI 204 to 742). **Conclusion:** Comprehensive non-surgical training showed clinically important and sustained improvements in walking distance compared with self-directed training in people with neurogenic claudication due to lumbar spinal stenosis.

Provenance: Invited. Not peer reviewed.

Britt Elin Øiestad

Department of Physiotherapy, Oslo Metropolitan University, Norway

Commentary

The financial burden of lumbar spinal stenosis will increase in coming years in line with the increasing proportion of elderly people. There is currently very little evidence-based knowledge of non-surgical treatment options for patients with lumbar spinal stenosis, and this study is a welcome addition to the limited amount of evidence.

Limited walking distance is a dominant symptom of people with lumbar spinal stenosis. Although this study's results showed that more people improved their walking ability with the comprehensive training compared with self-directed care, there were marginal differences between treatment groups in other more traditional outcomes such as back and leg pain, and pain-related disability in activities of daily life (measured by Oswestry Disability Index and Zürich Claudication Questionnaire). In light of the very extensive home program (up to 30 minutes of cycling plus 30 minutes of exercises performed twice daily over 6 weeks and then once daily) that was in addition to 12 visits to the chiropractor, it must be questioned whether the average patient with spinal stenosis (often aged > 70 years) would be able to carry out such a training program. The

training program offered to the comprehensive training group would possibly be most relevant for the youngest and/or most motivated patients.

The study included patients who were judged to be not yet eligible for surgery over the next year. The tendency for patients in the comprehensive training group to have a lower frequency of surgery for spinal stenosis at 12 months was an interesting finding. It would be very interesting to follow the patients over a longer time-frame to see if this trend continued and whether this could provide cost benefits in the long term.

Provenance: Invited. Not peer reviewed.

Kjersti Storheim

Research and Communication Unit for Musculoskeletal Health (FORMI), Oslo University Hospital; and the Norwegian Musculoskeletal Research Network, Norway