Lumbar fusion did not differ from cognitive therapy plus exercise for reducing disability and pain in chronic low back pain


Clinical impact ratings GP/FP/Primary care ⋆⋆⋆⋆⋆⭐ stars Neurology ⋆⋆⋆⋆⋆⭐ stars

Q In patients with chronic low back pain (CLBP), is instrumented lumbar fusion (ILF) more effective than cognitive therapy plus exercise (CTE) for reducing CLBP related disability and pain?

**METHODS**

Design: randomised controlled trial.

Allocation: concealed.*

Blinding: outcome assessors.*

Follow up period: 1 year.

Setting: 4 hospitals in Norway.

Patients: 64 patients 25–60 years of age (mean age 43 y, 61% men) with CLBP that lasted >1 year who had Oswestry Disability Index (ODI) >30 at 100 points, and degeneration at L4-L5 and/or L5-S1 (spondylosis) on plain radiographs. Exclusion criteria included widespread myofascial pain, spinal stenosis with reduced walking distance and neurological signs, and recurrent disc herniation or lateral recess stenosis with clinical signs of radiculopathy.

Intervention: patients were allocated to ILF (n = 37) or CTE (n = 27). ILF consisted of posterolateral fusion with transpedicular screws of the L4–L5 segment and/or L5–S1 segment plus physiotherapy. Patients in the CTE group received a lecture explaining that ordinary physical activity would not harm the disc, and a recommendation to bend the back and use it. This recommendation was reinforced by 3 daily physical exercise sessions for 3 weeks.

Outcomes: CLBP related disability and pain (0–100% ODI), lower limb pain (0–100 visual analogue scale), and fear avoidance beliefs about physical activity and work (Waddel’s Fear Avoidance Belief Questionnaire).

Patient follow up: 95%.

*See glossary.

**MAIN RESULTS**

Analysis was by intention to treat. The groups did not differ for change from baseline in CLBP related disability and pain (table). Reduction from baseline in lower limb pain was greater in the ILF group than in the CTE group (table). Reduction in fear avoidance beliefs was greater in the CTE group than in the ILF group (table).

**CONCLUSIONS**

In patients with chronic low back pain (CLBP), instrumented lumbar fusion (ILF) did not differ from cognitive therapy plus exercise for reducing CLBP related disability and pain. However, ILF improved lower limb pain.

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### Commentary

The study by Brox et al tackles the most difficult and frustrating group of patients with CLBP — those who have had pain for longer than a year. A previous randomised controlled trial by the Swedish Lumbar Spine Study Group compared lumbar fusion with usual care in this group of patients and found lumbar fusion to be better.1 They also found that personality factors and low disc height predicted improvement after surgical treatment.2 The study by Brox et al compares fusion with an intensive non-surgical approach using fear avoidance therapy. Other researchers have shown that this form of physical therapy reduces disability in patients with elevated fear avoidance beliefs in the face of acute LBP,3 but until now, it has not been studied in CLBP. Exercise has been shown to be more effective than usual care for CLBP4 as has intensive multidisciplinary biopsychosocial rehabilitation with a functional restoration approach.5 The study by Brox et al is one of the few rigorous studies that have compared active treatments for CLBP. However, the level of intensity used in this study may not be achievable in physician practice settings. Based on this assumption, primary care physicians could consider the use of fear avoidance therapy and exercise for patients with assistance from physiotherapists, clinical psychologists, or other qualified personnel.

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