

Clinical Findings and Future Low Back Pain Among Industrial Employees

Kääriä S¹, PT, MSc, Mälkiä E², PhD, Luukkonen R¹, PhD, Leino-Arjas P¹, MD, PhD

¹Finnish Institute of Occupational Health, Helsinki, Finland, Topeliuksenkatu 41 a A, FI-00250 Helsinki, Finland, tel. +358 30 4741, paivi.leino-arjas@ttl.fi

²University of Jyväskylä, Finland, Department of Health Sciences

BACKGROUND

Little is known about the relationships of findings in clinical tests related to the lower back in the normal working population with low back pain (LBP). We studied associations of several clinical tests with LBP, and whether the tests predict new reports of LBP.

METHODS

A sample of 902 employees in the metal industry was drawn in strata by age, gender, and occupational class. Follow-up surveys were made at 5 (n =748), 10 (n=654), and 28 (n=546) years from baseline. Data on local LBP (felt only in the lumbosacral area) and radiating LBP (with radiation to the buttocks, the thighs, or the toes) were collected by questionnaire and a 3-class variable (no pain, local LBP, radiating LBP) was compiled. Physiotherapists made a standardised assessment of the low back, including the forward flexion range, the straight-leg raise test, pain on palpation of the lumbar spinal muscles, and pain on palpation of the intervertebral spaces L3-S1. A sum score of pain on palpation of the intervertebral spaces was calculated and categorized as 0, 1-2, and ≥ 3 . Multinomial logistic regression analysis was used.

RESULTS

At baseline, 225 subjects reported radiating pain while the straight-leg raise test was positive in 13 subjects only. All tests were statistically significantly associated with radiating LBP. Associations with local LBP were lower. Among subjects with no radiating LBP at baseline, the baseline score of pain on palpation of the lumbar intervertebral spaces showed a graded association with radiating LBP at the 5-year follow-up (intermediate score vs. null: OR 2.5, 95% CI 1.4-4.5; high score: 3.7, 2.0-6.7, ORs adjusted for age, gender and occupational class). A high baseline score predicted radiating LBP also at the 10- and 28-year follow-ups (ORs 1.9; 1.0-3.6 and 2.1; 1.0-4.3, respectively). No other clinical tests predicted new reports of radiating LBP.

CONCLUSION

Palpation soreness at the lumbar intervertebral spaces at baseline was found to predict new reports of radiating LBP among the normal working population. Pain on palpation of the lumbar intervertebral spaces might arise from the local ligaments (e.g. supraspinal ligament, interspinal ligament, ligamentum flavum), facet joints, or degenerated lumbar intervertebral discs.