EDITOR'S CHOICE

Systematic review

People with lumbar disc herniation and associated radiculopathy benefit more from microdiscectomy than advice in the short term, although there is no difference in the long term

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Commentary on: **Hahne AJ**, Ford JJ, McMeeken JM. Conservative management of lumbar disc herniation with associated radiculopathy: a systematic review. *Spine* 2010;**35**:E488–504.

Context

Lumbar intervertebral disc herniation with radiculopathy (LDHR) is one of the most common clinical entities seen by spine practitioners. Good clinical outcomes have been reported for both surgical and non-operative treatment of lumbar disc herniation with radiculopathy. In the absence of *cauda equina* syndrome, initial treatment is non-operative, with approximately 50–60% of patients reporting satisfactory symptomatic improvement after conservative care.[1 2] Costs associated with treatment (surgical or conservative) can be high.[3] Surgery and injections, as invasive procedures, carry with them a significant risk profile. Moreover, injections are the primary driver of non-operative treatment-related costs.[3] In an era of cost-containment, effective, cost-efficient treatments must be prioritised. It is into this milieu that Hahne and colleagues venture with the present study. The goal of the current study was to determine the clinical efficacy and associated complications of conservative (non-invasive) treatment of patients with radicular symptoms clearly documented to be secondary to lumbar disc herniation.

Methods

The authors conducted a systematic review of English-language literature utilising 10 databases. The databases (including Medline, CINHAL and EMBASE) were searched using keywords related to LDHR, taking care to avoid use of treatment-specific terms to limit potential bias. Citations and reference lists from selected articles were also reviewed. Studies were included if they involved adult patients with documented leg pain (with or without

back pain), where at least 75% of patients had a lumbar disc herniation confirmed through imaging (CT or MRI). Acceptable interventions included anything which did not involve penetration through deep skin layers. Studies were excluded if >25% of patients underwent surgical intervention or had symptoms more likely attributable to bony or ligamentous stenosis, or if all treatment groups received injections or surgery. Only studies reporting data on treatment efficacy (functional status, pain, global measures) or treatment-related adverse events were included.

After screening and selection, reviewers assessed the methodological value and clinical relevance of articles based on previously established criteria. All selected papers commented on the reliability and validity of the outcomes measures reported. Data were extracted and underwent statistical analysis. Meta-analysis was used when at least two trials included sufficiently homogenous patients, interventions, outcomes measures and follow-up. Effect sizes and 95% CIs were reported for all other studies. Evidence was rated as strong, moderate, limited, conflicting or no evidence.

Findings

After screening 6080 articles, 18 trials (1671 patients) were included. Only two studies qualified for meta-analysis. These evaluated the effect of advice versus microdiscectomy, and found strong evidence in favour of surgery for improved pain and function in the short term, but also found strong evidence that there was no difference in long-term outcomes. The remaining evidence comes largely from single studies. They found moderate evidence that stabilisation exercises were more effective than no treatment; moderate evidence favouring manipulation over sham manipulation; moderate evidence that there was no difference between laser, mechanical traction and ultrasound and that the addition of mechanical traction to a programme including electrotherapy and medication may improve outcomes. They report limited evidence of any benefits of medication, traction, physical therapy or corset use alone. Adverse events were most common with traction therapy.

Commentary

Prior attempts to coalesce the literature to determine efficacy of conservative management of LDHR have been unsuccessful in documenting any single treatment which is efficacious. This is largely due to the heterogeneous population of patients, variable means of diagnosis or confirmation of herniation and variety of non-operative treatments evaluated. Even the SPORT trial left the classification of 'conservative care' deliberately vague.[2] Similarly, this review failed to find any overwhelmingly convincing data supporting any single conservative treatment modality over another. The limitations of this study are primarily the limitations of the trials reviewed. Because of the strict search criteria, only a small number of trials were included for analysis, and only two of those were homogenous enough to permit pooled data reporting through meta-analysis. There was a high degree of variability in types of intervention (and comparison), outcomes measured and duration of follow-up. Rather than viewing this as a shortcoming of the present review, it should be regarded as a strength; the authors set specific inclusion criteria to limit evaluation to a select group of patients – those with LDHR. It is important to point out that this review included only non-invasive treatments and did not evaluate the role of epidural injections or nerve root blocks.

What is clear from this study is that while no single intervention provides significant improvement, a multimodal approach including a combination of medication, therapy and injections is likely the best and most effective treatment. Studies have demonstrated that while surgery may provide faster relief of symptoms, particularly in those patients with more severe symptoms, operative and conservative treatments have similar long-term outcomes.[1 4] While it is doubtful that the results of the current study will have any major impact on the clinical practice of spine-care physicians, it highlights the need for well-designed, prospective, randomised, controlled trials evaluating the efficacy of non-operative treatments for LDHR.

Competing interests None.

References

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