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Evidence for surgery in degenerative lumbar spine disorders



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A B S T R A C T

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Sciatica

We aimed to evaluate the available evidence on the effectiveness of surgical interventions for a number of conditions resulting in low back pain (LBP) or spine-related irradiating leg pain. We searched the Cochrane databases and PubMed up to June 2013. We included systematic reviews and randomised controlled trials (RCTs) on degenerative disc disease (DDD), herniated disc, spondylolisthesis and spinal stenosis due to degenerative osteoarthritis. We included comparisons between surgery and conservative care and between different techniques. The quality of the systematic reviews was evaluated using assessment of multiple systematic reviews (AMSTAR). Twenty systematic reviews were included which covered the following diagnoses: disc herniation ($n = 9$), spondylolisthesis ($n = 2$), spinal stenosis ($n = 3$), DDD ($n = 4$) and combinations ($n = 2$). For most of the comparisons, no significant and/or clinically relevant differences between interventions were

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identified. In general, surgery is only indicated for relief of leg pain in clear indications such as disc herniation, spondylolisthesis or spinal stenosis.

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Introduction

The burden of low back pain (LBP) on patients and society is substantial and it ranks first as the disease with most years lived with disability [2] (see also chapter 1 in this edition). LBP has an estimated point prevalence of 10.2% [3] and a lifetime prevalence of up to 84% [4]. More than 80% of those who suffer from LBP seek medical attention [3]. Most episodes are temporary and resolve without treatment in about 25–58% of patients, even when specific causes, such as herniated discs, are present [6]. LBP is associated with high direct costs of health-care utilisation and indirect costs due to lost productivity [7]. While conservative therapy, including a wait-and-see policy, is the first step in the management of LBP, in the case of persistent pain and a clearly identified pain source, targeted injections or surgical intervention may be indicated.

The objective of this overview was to evaluate the available evidence from systematic reviews on the effectiveness of surgical interventions for a number of conditions, including degenerative disc disease (DDD), disc herniation, spondylolisthesis and spinal stenosis resulting in LBP or low back-related irradiating leg pain and/or paraesthesias. A secondary objective was to determine if the evidence was up to date.

Existing evidence for surgical interventions

We searched Cochrane databases and PubMed up to June 2013 to identify the available evidence on the effectiveness of surgical interventions for degenerative low back disorders. Systematic reviews and randomised controlled trials (RCTs) were included. We included studies on DDD, herniated disc, spondylolisthesis and spinal stenosis due to degenerative osteoarthritis. We included comparisons of surgery versus conservative care and of different surgical techniques compared to each other (see [Methods box](#)).

Box 1 Methods

Search

Databases: CDSR, DARE, Pubmed (reviews); CENTRAL, Pubmed (RCTs)

Search strategy: sensitive (variations on search strings), specific on study type (Shojania [1] and Pubmed search filters), available on request.

Search date: June 2013. Citation tracking of older reviews.

Study types: Systematic reviews (comprehensive search, RoB assessment) and RCTs (valid randomisation, English, available).

Disorders: lumbar disc herniation with radiculopathy, lumbar spondylolisthesis, lumbar spinal stenosis or degenerative lumbar disc disease.

Interventions: Conservative interventions versus surgery or Surgery versus surgery

Publication dates: from 2001 (reviews), from 2010 or since last included review (RCTs).

Analysis

Risk of bias: Amstar (Quality appraisal of Reviews) [5].

Outcomes: Subjective outcome data (pain, functional status, recovery, physiological/objective data (e.g., success of fusion according to clinician)).

Analysis: Not pooled, descriptive from presented meta-analyses, complemented with descriptive results from RCTs.

Clinical relevance: Ostelo: [8] 15 for 100mm Visual Analogue Scale, 5 for the Roland Disability Questionnaire and 10 for the ODI.

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