Efficacy of epidural steroids in low back pain and sciatica: a critical appraisal by a French Task Force of randomized trials

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Authors' objectives
To assess the efficacy of epidural steroid injections in the treatment of common low back pain and sciatica.

Searching
The authors searched the electronic database of MEDLINE (1966 to 1997) using the search terms: 'lumbosciatica', 'low back pain and sciatica', and 'epidural steroids'. The authors also checked the retrieved studies against a previous review on the topic by Koes et al., (see Other Publications of Related Interest no.1). Only one additional, more recent, study was retrieved.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs). Efficacy was evaluated at between 7 days and 3 to 20 months post start of treatment.

Specific interventions included in the review
One to three injections of epidural steroid including methylprednisolone (80 mg) with 8 to 18 ml of saline or 20 ml of bupivacaine 5 to 40 ml, or procaine; triamcinolone diacetonide (75 or 80 mg or 3 ml) alone or plus procaine, lignocaine, morphine or saline. Control groups received saline (2 to 50 ml), procaine (5 or 42 ml), bupivacaine (20 ml) and saline, interspinous injection, lignocaine (2 or 47 ml), morphine (8 mg), midazolam (3 mg). Injections administered at 7 days to 1 month intervals.

Participants included in the review
Patients diagnosed with common low back pain or sciatica. Time since diagnosis ranged from 1 week to several years. Age of patients not stated.

Outcomes assessed in the review
Pain, function, and return to work.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection, see Koes et al. (see Other Publications of Related Interest no.1).

Assessment of study quality
Trial data was evaluated using a 100-point grid based on four groups of items: study population; therapeutic intervention; evaluation method; and data presentation and analysis. Four authors independently performed the validity assessment after a grid item comprehension test based on two articles read in common.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Data were extracted for the categories of: diagnosis, treatment regimen, evaluated criteria, evaluation time point and results.

The studies were grouped into two categories for evaluation: those with results of effectiveness and those with results of
non-effectiveness.

**Methods of synthesis**

How were the studies combined?
The studies were grouped in a narrative synthesis with individual study details presented in tables.

How were differences between studies investigated?
Homogeneity of included studies was assessed as part of the validity assessment.

**Results of the review**

Thirteen RCTs were included in the review with 722 participants (357 received active treatment; 353 received control group treatment; and 20 participants not stated which arm they were assigned to).

Methodological quality scores ranged from 12 to 84 and were unrelated to the results of epidural steroid therapy. The number of studies with more than 20 patients per treatment group was higher in the two studies that found no evidence of efficacy.

Five trials demonstrated greater pain relief within the first month in the steroid group as compared to the control group. They did not assess pain relief after 1 month. In one study that evaluated the effect of the therapy on resumption of work, 91% of patients had returned to work after three months in the epidural steroid group versus 60% in the control group. No differences between the two treatment groups were noted in this study regarding subsequent surgical therapy.

Eight trials found no measurable benefits. Of these, four studies followed patients for > 3 months and three studies followed patients for 6-12 months. In one study that evaluated the effect of the therapy on return to work, after 3 months 33% of patients in the steroid group versus 44% in the control group had returned to work, however this result was not statistically significant. In two studies, no differences between the two treatment groups were noted regarding subsequent surgical therapy.

Obstacles to meaningful comparisons across studies included differences in the patient populations, steroid used, volume injected, and number of injections.

The differences across studies regarding the volume injected (2 to 50 ml) and injection route (sacral hiatus or lumbar approach) apparently had no influence on the results of epidural steroid therapy.

**Authors' conclusions**
The authors state that it cannot be determined in this review whether epidural steroids are effective in common low back pain and sciatica. None of the published studies used the injection modalities that are standard practice in France.

**CRD commentary**
The authors have stated their research question and some inclusion and exclusion criteria. The literature search was limited to only one database and English and French language publications. It is possible that additional relevant studies may have been missed. The authors do not report whom, or how many of the authors, performed the selection of studies or the data extraction. There is a comprehensive validity assessment of the included studies which was performed by all four of the authors.

The review is a narrative discussion with no statistical pooling organised around the finding of effectiveness or non-effectiveness of the included studies. Individual study data were summarised in a table. The results of original studies are given in general terms with very limited quantitative information and almost none derived from statistical analyses. Thus it is difficult to assess treatment effects. The methodological drawbacks between the included studies are discussed: differences between participants, symptom duration, diagnosis (low back pain alone or with sciatica) and history of back pain.
The authors' conclusions appear to follow from the results but these should be viewed with caution because of the methodological limitations in the process of the review.

**Implications of the review for practice and research**

Practice: The authors do not state any implications for practice.

Research: The authors state that a carefully-designed, randomised controlled study is needed.

**Bibliographic details**

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**Other publications of related interest**

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Subject indexing assigned by NLM

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**Record Status**
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