Oral opioid analgesics vs spinal steroid injections in the treatment of low back pain syndromes
Nampiaparampil DE, Nampiaparampil GM, Nampiaparampil RG

CRD summary
This review found that opioid therapy and percutaneous spinal steroid injections were both helpful for low back pain and disability but high drop-out rates precluded conclusions about opioid therapy for chronic low back pain. The cautious conclusion reflects problems with the evidence but its reliability is limited by a lack of detail on review methods and study quality.

Authors' objectives
To evaluate outcomes and adverse effects of oral opioid analgesics and spinal steroid injections in the treatment of low back pain syndromes.

Searching
Ten databases including MEDLINE, EMBASE and clinical trials registries were searched without language restrictions to September 2009. Search terms were reported. Pharmaceutical companies were contacted. Reference lists, specific journals and authors’ publications were searched.

Study selection
Randomised controlled trials (open-label or blind) of oral, sublingual or transdermal opioid analgesics or epidural steroid injections or steroid injections into the spinal canal, facet joint, sacroiliac joint or medial branch blocks were eligible for inclusion. Participants had to be aged over 18 with non-neoplastic chronic lower back pain or lumbar radiculopathy. Studies of patients with chronic pain after spinal surgery and studies that focused on partial or synthetic opioid analgesics were included. Primary outcomes were: pain relief measured with a visual analogue scale; functional benefit measured with the Roland-Morris questionnaire or Oswestry Disability Index; quality of life measured with Short-Form 36-item questionnaire; and mortality. Secondary outcome measures were other pain relief or functional benefit measures, psychological and quality of life measures and adverse events including aberrant opioid behaviours and procedural complications.

Interventions in the included randomised trials included tramadol, fixed-dose oxycodeone, titrated dose oxycodone with sustained release morphine sulphate, methylprednisolone, prednisolone, bupivacaine, triamcinolone, betamethasone, procaine, dexamethasone, prilocaine and lidocaine. Comparators were placebo, physical therapy or another treatment. Patients presented with various conditions. Outcomes were measured at one week, between one week and one month, between one and three months, between three and six months and at more than six months.

One reviewer assessed titles and abstracts and a second reviewer checked 10% of these. It appeared that papers were selected by two reviewers independently and disagreements resolved by discussion or involvement of a third reviewer.

Assessment of study quality
Study quality was assessed using an instrument from the Agency for Healthcare Research and Quality with a maximum of 10 points. Scores of 8 to 10 were considered high quality and 6 to 7 were moderate quality. It was unclear how many reviewers performed the assessment.

Data extraction
Mean differences (MD) were calculated for outcomes measured on the same continuous scale and odds ratios (OR) were calculated for adverse events, each with 95% confidence intervals.

The number of reviewers involved in data extraction was not reported.

Methods of synthesis
Some studies appeared to have been pooled but details of the meta-analysis methods were not reported. Other results
were presented as a narrative synthesis grouped by intervention and outcome.

Results of the review

Eighteen studies were included (2,345 participants). Eight studies were judged high quality and 10 were moderate quality.

Opioid therapy (three studies): All studies reported on pain. One high quality and one moderate quality study found statistically significant improvements in pain scores for opioid therapy compared with control with mean differences in visual analogue scores of 15.5 (p<0.001) and 7.9 (p=0.015). These two studies also reported significant improvements in the Roland-Morris Disability Questionnaire score for opioid therapy. Significant improvements were seen in other pain and quality of life measures (reported in the papers). All studies reported adverse events relating to opioid use; the most commonly reported events were headache, drowsiness, nausea and constipation. Up to 28% of patients withdrew from the trial early because of an adverse event.

Spinal steroid injections (15 studies): Eight high- and moderate-quality studies reported on pain. A combined analysis of three high-quality studies found a greater reduction in pain score with steroid injections at one month or less (MD 7.18, 95% CI 2.21 to 12.1) but there no significant differences between groups at longer follow-up times. A similar result was seen for three moderate quality studies at one month or less but the difference was larger (MD 18.9, 95% CI 14.7 to 23.2). For function, a combined analysis of two high quality studies found a greater improvement in the Oswestry Disability Index score with steroid injections at one month or less (MD 3.53, 95% CI 0.48 to 6.57). Three studies reported adverse events, the most common events were headaches related to dural puncture or other causes but there was no significant difference in rates between steroid injections and controls.

Authors' conclusions

Opioid therapy and percutaneous spinal delivery of steroids were both helpful for low back pain and disability. High drop-out rates due to poor pain relief precluded conclusions about opioid therapy for chronic low back pain.

CRD commentary

This review had clear and reproducible inclusion criteria. The search covered several sources, included efforts to obtain unpublished research and was not limited by language which reduced the risk of missing relevant studies. Details of the review methods were not reported clearly. It seemed that two reviewers independently selected studies but it was unclear whether the same methods to minimise error and bias were used during data extraction and quality assessment. Evidence quality was assessed and a total score was calculated but neither these nor details of individual quality items were reported so the quality of the evidence could not be verified. Some of the reported results seemed to be pooled but no details of meta-analysis methods were reported.

The review conclusion is cautious and reflects problems with the evidence but its reliability is limited by a lack of detail on review methods and study quality.

Implications of the review for practice and research

Practice: The authors did not make any recommendations for practice.

Research: The authors stated that more data were needed about long-term opioid therapy for chronic low back pain syndromes.

Funding

Not stated.

Bibliographic details


PubMedID

22037559
Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.