Systematic review of diagnostic utility of facet (zygapophysial) joint injections in chronic spinal pain: an update
Sehgal N, Dunbar EE, Shah RV, Colson J

CRD summary
This review concluded that local anaesthetic blocks of facet joints were reproducible, accurate and safe. The results presented did not appear to provide data on the reproducibility of facet joint blocks and the only data provided on accuracy related to false-positive rates, which seemed very high. The conclusions are therefore not supported by the data presented.

Authors' objectives
To evaluate the utility of facet joint block injections for the diagnosis of chronic spinal pain.

Searching
PubMed, EMBASE and CINAHL were searched from October 2004 to December 2006. In addition, the references of systematic and narrative reviews were screened for additional studies. The search terms were reported. The studies identified by these update searches were added to those identified by the previous review, which had been published in 2005 (see Other Publications of Related Interest).

Study selection
Study designs of evaluations included in the review
Prospective and retrospective studies were eligible for inclusion. Case reports and reviews were excluded. The included studies were randomised controlled trials and prospective and retrospective studies.

Specific interventions included in the review
Studies that assessed diagnostic facet joint procedures that involved fluoroscopically/image-guided injections and controlled for false-positive responses (used comparative control or placebo control blocks) were eligible for inclusion. Studies that described injection techniques or ultrasound-guided infections were excluded, as were papers on therapeutic facet joint procedures.

Reference standard test against which the new test was compared
The reference standard for the diagnosis of zygapophysial facet joint pain was at least 50% pain relief for duration of the anaesthetic effect.

Participants included in the review
Studies of patients with spinal pain of greater than 3 months’ duration were eligible for inclusion. Anatomical/cadaver studies were excluded.

Outcomes assessed in the review
No inclusion criteria relating to the outcomes were reported. The outcomes reported in the review were the prevalence of facet joint pain as a source of chronic spinal pain and false-positive rates.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Two clinical reviewers assessed the studies for methodological quality using the AHRQ (Agency for Healthcare Research and Quality) criteria for diagnostic studies and the QUADAS (Quality Assessment of Diagnostic Accuracy Studies) criteria. Studies had to fulfil at least 3 of the 5 AHRQ criteria and 7 of the 14 QUADAS criteria to be included in the review. The results of the quality assessment were reported as scores.
Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
There were no details of the methods used to synthesise the results and a narrative synthesis was presented. The results of the individual studies were summarised.

How were differences between studies investigated?
Differences between the studies were not formally investigated. The results of the individual studies were grouped according to region of the back assessed.

Results of the review
Two studies were identified by the current searches. These were added to the 37 studies identified for the previous review, giving a total of 39 included studies (total number of participants unclear).

Cervical region (8 studies, 1,002 patients).
Prevalence of facet joint pain was reported in 7 studies and ranged from 36 to 67%. The false-positive rate, which was reported in 5 studies, ranged from 27 to 63%. AHRQ scores ranged from 3 to 4 out of 5; QUADAS scores ranged from 7 to 13 out of 14.

Thoracic region (3 studies, 183 patients).
Prevalence of facet joint pain ranged from 34 to 48%. The false-positive rate ranged from 42 to 58%. All studies scored 3 out of 5 on the AHRQ criteria; QUADAS scores ranged from 9 to 11 out of 14.

Lumbar region (15 studies, 2,572 patients).
Prevalence of facet joint pain ranged from 14 to 52%. The false-positive rate, which was reported in 13 studies, ranged from 17 to 50%. AHRQ scores ranged from 3 to 4 out of 5 and 1 study appeared to score 1 out of 4; QUADAS scores ranged from 7 to 12 out of 14.

One study reported a case of transient paraplegia after a cervical facet joint injection. Another reported a vasovagal episode and a short duration procedure-related discomfort. Seven other studies reported other complications with infection and bleeding.

Authors’ conclusions
Controlled, comparative, local anaesthetic blocks of facet joints are reproducible, accurate and safe.

CRD commentary
This review addressed a focused question that was supported by defined inclusion criteria. The literature search was limited to three databases over a 2-year period but, given that this was an update of a previous review, the date restrictions were appropriate. No attempts were made to locate unpublished studies so the review may be subject to publication bias. A detailed quality assessment was conducted, but the results of this were expressed as summary quality scores with no discussion of the individual quality items. The validity of the primary studies therefore remains unclear.

Some details of a sample of the included studies were reported in the tables, but these did not provide sufficient information on the primary studies for the reader to judge their similarity and clinical relevance, and for some studies no details were provided; this makes it very difficult to interpret the results of the review. A narrative synthesis was
presented but this was confusing and did not appear to address all of the included studies. Given the types of studies included it might have been more appropriate to conduct some form of statistical analysis; however, given the very limited details provided on the included studies it is difficult to assess this. The results presented did not appear to provide data on the reproducibility of facet joint blocks and the only data provided on accuracy related to false-positive rates, which appeared very high. The authors’ conclusions are therefore not supported by the data presented, and the lack of data relating to the included studies makes the results of the review almost impossible to interpret.

Implications of the review for practice and research
The authors did not state any implications for practice or further research.

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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.