Spinal manipulative therapy in the management of cervicogenic headache
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CRD summary
This review concluded that spinal manipulative therapy might be effective in reducing headache intensity, headache duration, medication intake and, to a lesser extent, the frequency of headaches. This conclusion was based on a flawed synthesis of two studies and so may not be reliable.

Authors' objectives
To assess the effectiveness of spinal manipulative therapy in cervicogenic headache.

Searching
MEDLINE, EMBASE, AMED, MANTIS, CINAHL and the Cochrane Library were searched (dates not reported); the search terms were given. The search was not restricted by language of publication.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion in the review.

Specific interventions included in the review
Studies evaluating spinal manipulative therapy were eligible for inclusion. The studies included in the review compared manipulative therapy with alternative therapies including one or more of the following: exercise, laser therapy, deep friction massage and no treatment.

Participants included in the review
Studies including patients with cervicogenic headache, diagnosed according to the Classification of Headache Disorders of the International Headache Society or the diagnostic criteria of Sjaastad et al., were eligible for inclusion in the review.

Outcomes assessed in the review
Studies measuring headache intensity, frequency and/or duration were eligible for inclusion in the review.

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
The methodological quality of the included trials was assessed according to published criteria (the PEDro scale).

Data extraction
Two reviewers independently extracted the data. Data on key study characteristics and results were extracted.

Methods of synthesis
How were the studies combined?
The results of the studies were defined as positive, neutral or negative in relation to the effect of spinal manipulation, and were discussed in a narrative synthesis.

How were differences between studies investigated?
The authors did not formally address study heterogeneity, but did discuss some key differences between the studies in their paper.

**Results of the review**

Two RCTs (n=253) were included in the review.

One RCT scored 8 out of 10 points on the PEDro quality assessment scale, while the second scored 7 out of 10.

Both RCTs reported positive findings for spinal manipulation in terms of headache intensity and duration and medication intake. One RCT also reported a positive finding for headache frequency.

**Authors' conclusions**

Spinal manipulative therapy might be effective in reducing headache intensity, headache duration, medication intake and headache frequency.

**CRD commentary**

The review question was supported by an appropriate set of inclusion criteria. The search for relevant literature covered several electronic databases and was not restricted by language. However, no other sources appeared to have been searched and the search dates were not reported. Therefore, potentially relevant studies might have been missed. Attempts were made to assess the validity of the included studies and to minimise error and bias in the data extraction by using two independent reviewers. However, no such procedures were reported for the selection and quality assessment of the research literature. The synthesis of the included studies was based on a very basic 'vote count' for each outcome, which does not take into account how the outcome was measured or the size or clinical relevance of any potential effect. On this basis, the authors' conclusion that spinal manipulative therapy might be effective for cervicogenic headache appear overly positive.

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

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

Research: The authors stated that a greater number of well-designed RCTs are required to confirm or refute the effectiveness of spinal manipulation in the management of cervicogenic headache.

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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.