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## **Acupuncture for Acute Low Back Pain: A Systematic Review**

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### **ABSTRACT**

#### ***Objectives***

*Although acupuncture has been frequently used for acute nonspecific low back pain (LBP), relevant systematic reviews indicate sparse and inconclusive evidence. This systematic review aimed at critically evaluating the evidence for/against acupuncture for acute LBP.*

#### ***Methods***

*We searched Medline, Central, Embase, 2 Chinese databases, relevant journals, and trial registries for the randomized-controlled trials of acupuncture that involved needling for acute/subacute LBP. Risk of bias was assessed using the assessment tool from the Cochrane Back Review Group and the adequacy of acupuncture intervention was evaluated by 2 independent reviewers. The studies according to the control types were combined using a random-effects model.*

#### ***Results***

*A total of 11 randomized-controlled trials (n=1139) were included. Compared with nonsteroidal anti-inflammatory drugs, acupuncture may more effectively improve symptoms of acute LBP (5 studies; risk ratio, 1.11; 95% confidence interval: 1.06, 1.16). For pain, there exists inconsistent evidence that acupuncture is more effective than medication. Compared with sham acupuncture, acupuncture may more effectively relieve pain (2 studies; mean difference, -9.38; 95% confidence interval: -17.00, -1.76) but not function/disability. Acupuncture appears to be associated with few side effects but the evidence is limited.*

#### ***Discussion***

*The current evidence is encouraging in that acupuncture may be more effective than medication for symptom improvement or relieve pain better than sham acupuncture in acute LBP. The present findings should be confirmed by future studies that overcome the methodological limitations of the studies evaluated in our review.*

## ANALYSIS

Reviewed by Dr. Ceara Higgins DC (Research Review Service)

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### **Background Information**

Acupuncture has been used for hundreds of years to treat pain and is one of the most sought after forms of complementary and alternative medicine for patients who are suffering from low back pain.

Currently, clinical practice guidelines support the use of nonsteroidal anti-inflammatory drugs (NSAIDs) and muscle relaxants for acute low back pain. Most of the evidence for the use of acupuncture for acute low back pain is clinical. This review aimed to critically evaluate the current evidence for acupuncture as a treatment for acute low back pain as compared to sham acupuncture and other active interventions.

## PERTINENT RESULTS

Eleven studies met the inclusion criteria for this review. With some overlap (i.e. some studies used more than one technique), 8 of these used manual acupuncture, 2 used western medical acupuncture and modern wrist-ankle acupuncture, 2 used electroacupuncture, 1 used both electroacupuncture and manual acupuncture, and 2 did not report their treatment method.

Controls for the reviewed studies included conventional medicine (NSAIDs) in 7 studies, sham acupuncture in 3 studies, acupuncture and conventional medicine and conventional medicine alone in 1 study, and acupuncture and conventional medicine compared to conventional medicine alone in 1 study.

### **Acupuncture compared to conventional medicine**

In studies comparing acupuncture to conventional medicine, a more significant overall improvement was seen in the groups receiving acupuncture in 5 of the 7 studies. This improvement was noted immediately after the end of the study sessions in all studies and in a one month follow up in one study. When the studies that had shown a high risk of bias were removed from the meta-analysis, acupuncture still showed superior reduction in pain.

### **Acupuncture compared to sham acupuncture**

In studies comparing acupuncture to sham acupuncture, 2 studies showed significantly better pain relief following one session of acupuncture than following one session of sham acupuncture. Both of these studies had a low risk of bias. When a longer course of acupuncture compared to an equal number of sessions of sham acupuncture was used (3 to 12 sessions) with patients suffering from subacute low back pain no differences on pain intensity were found between groups. Further, in 3 studies, all with a low risk of bias, no differences were found in patients' function/disability when given acupuncture versus

sham acupuncture. Finally, in 1 study where analgesic use was taken into account, it was found that patients in the acupuncture group used significantly fewer analgesic tablets than those in the sham acupuncture group.

**EDITOR'S NOTE:** *It is important to remember that in many studies, 'sham' acupuncture involves actual needle insertion (similar to the comparison treatment group) at locations slightly different than those dictated by Traditional Chinese Medicine (or some other system of acupuncture). In many cases, this 'real' versus 'sham' acupuncture comparison reveals that they are both effective, often leading to the conclusion that real acupuncture is 'no better than sham' (with a negative connotation). The fact that this type of sham treatment often elicits real treatment effects calls into question the relevance of specific needle location according to some. I disagree, and feel it suggests the effects of acupuncture are general, systemic/non-specific, and not dependent on particular placement of the needles. We need more unbiased research on this important topic.*

### **Acupuncture plus medication compared to medication alone**

In 2 studies which combined acupuncture and medication use compared to medication use on its own, the combination of acupuncture and medication showed greater reductions in pain intensity and significantly better outcomes in improved function and decreased disability than the use of medication alone. However, one of the 2 studies showed a high risk of bias.

### **Adverse Events**

Very few adverse events were reported across the range of studies. Three patients reported feeling tired during acupuncture treatments and 3 patients reported mild hypodermal bleeding after acupuncture treatment while 16 patients from the medication groups reported gastrointestinal problems at one week. Twelve patients from the medication groups reported gastrointestinal problems at 2 weeks.

## **CLINICAL APPLICATION & CONCLUSIONS**

This review suggests that acupuncture may have a slight advantage over NSAIDs for improving the symptoms in patients with acute low back pain. As well, the combination of acupuncture and medication may be more beneficial to patients than the use of medication alone. However, the evidence shows only a small effect.

As the side effects associated with acupuncture are rare and generally minor when compared to those associated with continued NSAID use, it may still be worthy of consideration as a useful treatment modality for those with acute low back pain. Further studies with better outlined treatment plans and outcome measures are needed.

## **STUDY METHODS**

To be included in this review, studies had to utilize manual acupuncture, ear acupuncture, Korean hand acupuncture, warm needling, or electroacupuncture compared to placebo or sham interventions and/or NSAIDs. Outcome measures included pain intensity scales, patient-reported or observed overall improvement, back pain specific rating scales, disability, physical examination findings, analgesic use, quality of life related to health status, and adverse reactions to treatment.

## STUDY STRENGTHS / WEAKNESSES

### **Strengths**

- All studies included in this review were assessed for bias using the risk of bias assessment tool from the 2009 updated methods guidelines for systematic reviews from the Cochrane Back Review Group (CBRG).
- The authors also made an effort to find all studies regardless of language. Including studies in Chinese greatly expanded the number of possible articles (many reviews only include papers published in English).

### **Weaknesses**

- The studies included in this review tended to include small sample groups and demonstrate poor methodological quality overall.
- Despite the authors' comprehensive search of the literature very few studies were found that addressed acupuncture as a treatment for acute low back pain.
- Finally, although the authors evaluated all found articles for possible bias, even those studies rated as having a high risk of bias were included in the review.

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