

Lee J-H, Choi, T-Y, et al. Acupuncture for Acute Low Back Pain. A Systematic Review. Clin J Pain 2013;29(2):172-185.

Design: Meta-analysis of randomized clinical trials

PICOS:

- **Patient population:** acute or subacute low back pain of less than 12 weeks duration
 - o Trials with predominant sciatica were excluded
- **Intervention:** Needle acupuncture, including manual acupuncture, ear acupuncture, warm needling, and electroacupuncture
 - o Trials of acupuncture-related techniques without needling (auricular seed, laser, moxibustion, magnetic devices) were excluded
- **Comparison intervention:** placebo or sham acupuncture such as superficial or nonpenetrating needling, standard care, or no pain relief controls were accepted
 - o Trials with comparison groups of herbal medicine were excluded
- **Outcomes:** Pain intensity (VAS or numerical rating scale), global assessment, back-specific function (Roland-Morris, Oswestry), disability (activities of daily living, work absenteeism)
 - o Secondary outcomes could include physical exams, SF-36, analgesic use, and adverse events
 - o Outcome timing divided into three groups:; short-term (up to 4 weeks), intermediate term (close to 6 months), and long term (close to 12 months)
- **Study types:** Randomized controlled trials only

Study search and selection:

- Databases included Cochrane Central Register, MEDLINE and EMBASE
 - o Chinese databases and Korean databases were also searched
- Two authors independently reviewed articles for inclusion and risk of bias
 - o In addition, two authors who were experts in acupuncture extracted details of the performance of acupuncture using a standardized checklist for acupuncture interventions
 - o Adequacy of acupuncture was rated by these two authors in two ways: how they would treat the patients in the study (could not assess, treat similarly or differently), and their degree of confidence in whether acupuncture was appropriately done (0%= no confidence, 100%= complete confidence)
- Risk of bias was assessed using the Cochrane Risk of Bias tool (randomization, allocation concealment, blinding of assessor and patient, etc)

Results:

- 11 trials with 1139 patients were selected
 - o 8 were conducted in China, 1 in Japan, 1 in Norway, and 1 in the UK

- 8 of the 11 used manual acupuncture; 4 based their approach on Traditional Chinese Medicine (TCM); 2 used modern western acupuncture or wrist-ankle acupuncture
- In 7 of the studies, the authors rated the treatments as similar or exactly the same as they would have given; for the other 4, they would have treated differently
- In 7 trials, the control group received NSAIDs, and in 3 trials, the control group received sham or nonpenetrating acupuncture
- Among all 11 trials included in the review, 5 trials were rated as having a low risk of bias, and 6 as having a high risk of bias
- Among the 7 studies of acupuncture vs. medication, 5 reported outcomes in terms of overall improvement; of these, only 2 had a low risk of bias
 - For immediate overall improvement, these 2 studies showed that acupuncture was 1.14 times as likely (95% confidence interval from 0.99 to 1.30) than medication to result in improvement
 - 2 studies compared acupuncture plus medication with medication alone, both reporting that the group receiving acupuncture had better pain relief and better function, but both studies had a high risk of bias
- 3 studies compared acupuncture with sham acupuncture; all 3 had a low risk of bias
 - For the outcome of pain VAS immediately after the end of a session, acupuncture was better than sham acupuncture by 9.38 points on a 100 point scale
 - When the outcome was pain VAS after 3 to 12 sessions of treatment, there was no group difference in terms of pain intensity
 - No significant differences were found between acupuncture and sham acupuncture on function or disability
 - One study reported that the acupuncture group used significantly fewer analgesic tablets than the sham acupuncture group
- Only mild adverse effects of acupuncture were reported in the included studies, but NSAIDs were reported to cause gastrointestinal problems in some patients

Authors' conclusions:

- Despite an extensive literature search, only 11 studies of acupuncture for acute back pain were obtained
- The findings suggest that acupuncture may be more effective than NSAIDs in producing global improvement, but the effect, if any, is small
- While real acupuncture may be more effective than sham acupuncture for immediate pain relief, functional differences were not shown
- It is questionable that acupuncture is clinically useful; the potential of acupuncture is present, but further investigation is needed to show whether there are findings of clinical importance
- There is evidence (Pham 2005) that articles published in languages other than English have an important impact on the effects of complementary and

alternative medicine; 73% of the included studies were Chinese and this may have an effect on the overall evidence

- It is possible that acupuncture is a choice for patients who cannot tolerate NSAIDs due to gastrointestinal side effects

Comments:

- Pham 2005 did, as the authors say, report that studies of conventional medicine (medication, surgery) do not show more positive publication bias than do English language studies, but that for studies of complementary and alternative medicine (acupuncture, herbs, etc), there is evidence that positive studies are preferentially published
- In addition to Pham, there is other evidence (Vickers 1998) that studies published in China, Japan, Hong Kong, and Taiwan are uniformly favorable for acupuncture
- Tang 1999 reported on RCTs of Traditional Chinese Medicine, showing a highly asymmetrical funnel plot, suggesting that there is publication bias in favor of TCM in the literature
- The authors are very cautious in concluding that acupuncture has not been shown to have important clinical effects on pain and function; they could also have added a discussion of the likely impact of publication bias on their findings
- Publication bias is not addressed in the Cochrane risk of bias tool, which only looks at risks of bias for individual RCTs; thus, even though there may have been some studies with low risk of bias in the included studies, they may still overrepresent the effectiveness of acupuncture
- Even though there is a high risk of bias in favor of acupuncture in the included studies, the net benefit of acupuncture was not clinically very important

Assessment: High quality meta-analysis which supports good evidence that the clinical benefit of acupuncture in the setting of acute low back pain is likely to be small, but that it may be an option for patients who cannot tolerate NSAIDs.

References:

Pham B, Klassen TP, et al. Language of publication restrictions in systematic reviews gave different results depending on whether the intervention was conventional or complementary J Clin Epidemiol 2005;58:769-776.

Tang J-L, Zhan S-Y, Ernst E. Review of randomised controlled trials of traditional Chinese medicine. *BMJ* 1999;319:160-1

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