ACUPUNCTURE Today

BODYWORK

Acupuncture and Low Back Pain

ANALYSIS FINDS THERAPY EFFECTIVE FOR CHRONIC PAIN; QUALITY OF TRIALS IS LIMITED

Editorial Staff

According to the National Institutes of Health, up to 80 percent of the general population in the United States will suffer an episode of low back pain during their lifetimes.[1] After respiratory ailments, low back pain is the most frequent reason Americans visit a medical doctor for treatment. It is also, according to a widely publicized 2002 study, the most frequent reason that Americans visit a licensed acupuncturist for care.[2]

A new meta-analysis of acupuncture and the treatment of low back pain has recently been published in the *Annals of Internal Medicine*.[3] The review of approximately two dozen previously published studies has found that acupuncture is "significantly more effective" than sham acupuncture or no treatment in people with chronic back pain. However, the meta-analysis also questions the overall effectiveness of acupuncture compared to other traditional forms of care, and its ability to treat acute back pain remains uncertain because the number of studies available for review is, in the opinion of the analysts, "limited in quantity and quality."

In their analysis, a team of scientists from the United States and Great Britain conducted a search of seven computerized databases in the U.S. and Europe from their inception through August 2004. (One database was searched through February 2003). They also contacted experts in various countries, including the U.S., Great Britain, Germany, Italy, Sweden, Norway, and Japan, for randomized, controlled trials that compared needle acupuncture with sham acupuncture, no treatment, or other active therapies on patients with low back pain. The search produced 33 trials that met the investigators' criteria, including 23 recent trials that had not been included in previous analyses.[PB]

Eleven studies were excluded from the meta-analysis because their results could not be combined with the other studies accordingly. The remaining 22 trials were then grouped according to whether the pain being treated was acute or chronic, along with the style of acupuncture practiced and the other types of interventions used.

Data from the trials was extracted and analyzed based on the following outcomes: short-term effectiveness on pain, long-term effectiveness on pain, and short- and long-term effects on functional status and overall improvement. In addition, the quality of the trials was computed using two measurements: the Jadad quality score and the Cochrane Back Review Group quality score.

Results

Short-term effectiveness on pain. Acupuncture was found to be "statistically significantly more effective" than sham acupuncture, sham transcutaneous electrical nerve stimulation (TENS) and no

additional treatment. Compared to sham acupuncture, real acupuncture was 58 percent more effective in relieving pain, which the researchers equated to an improvement of 14.5 points on a 100-point visual analogue scale. Results comparing acupuncture to other active treatments were mixed, however. Acupuncture appeared more effective in three out of four studies using real TENS and two out of three studies comparing acupuncture and pain medications, but was less effective compared to massage, and "statistically significantly less effective" than spinal manipulation.

Long-term effectiveness on pain. Acupuncture was statistically significantly more effective than no additional treatment or sham TENS, and was an average of 61 percent more effective compared to sham acupuncture. Two studies found acupuncture to be more effective than TENS; one trial suggested that acupuncture was statistically significantly worse than massage.[PB]

Functional status and overall improvement. "For improving functioning," the researchers observed, "acupuncture was statistically significantly more effective than the no-additional-treatment control in the short term effects." They added, "For overall improvement, acupuncture was statistically significantly more effective than the sham controls and no-additional-treatment control in both the short- and long-term effects."

Study quality. Of the 22 trials included in the final meta-analysis, only eight met the requirements for being a study of "good quality" according to both the Jadad and Cochrane criteria. Three studies received a Jadad score of four; none of the studies obtained a maximum Jadad score of five. The highest Cochrane score given to any of the trials was a seven (out of 10).

The authors noted that each of the control interventions used in the trials had certain advantages and limitations that had to be considered in interpreting the results of their analysis. For example, the studies that used sham acupuncture as a control generally reported less benefits compared to studies that used no additional treatment as a control. The authors theorized that sham acupuncture needles "may unintentionally stimulate a physiologic response" that could produce "some specific analgesic effects," especially when the sham needles penetrate the skin. In fact, all of the sham-controlled studies included in the meta-analysis involved needles that penetrated the skin at non-specific points.

Paucity of High-Quality Trials Raises Questions About Acupuncture's Effectiveness

Based on the data presented in the randomized trials, the authors suggested that acupuncture "is an effective treatment for chronic low back pain," particularly in terms of providing short-term relief of chronic low back pain. They were quick to add, however, that the data "are sparse and inconclusive" for patients with acute low back pain, and they reported being "uncertain" about acupuncture's ability to provide long-term relief of back pain. The reason for the uncertainty? Because, in the view of the researchers, "longer-term follow-up data are limited in quantity and quality."[PB]

Despite the positive results presented in the meta-analysis, it appears that the main obstacle to the acceptance of acupuncture as a form of care for various types of low back pain remains a dearth of randomized, controlled trials that use large groups of patients and that measure the effects of acupuncture over a considerable length of time.

Fortunately, it appears that more high-quality studies that measure the effectiveness of acupuncture in the treatment of low back pain continue to be conducted, and that several have been, or are about to be, published in peer-reviewed journals. For example, the researchers alluded to two large randomized, controlled trials of acupuncture for chronic low back pain - one conducted in the United

Kingdom, the other in Germany - that were not included in the meta-analysis but have been presented at recent conferences. The main results of those trials appeared to correspond closely with the results derived from the meta-analysis.

As the authors stated in their conclusion:

> "More research is needed to evaluate acupuncture's effects on acute low back pain, and the evidence comparing acupuncture to other active treatments is inconclusive. Although current estimates of acupuncture's effects on chronic low back pain are statistically significant and clinically important, they are still somewhat preliminary, and the publication of several large ongoing trials will have a major effect on the evidence."

References

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JULY 2005