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Acupuncture in Chronic Spinal Pain: Progress in Tracking Outcomes

By Daniel Mazanec, MD

Although acupuncture has been practiced for more than 2,000 years and was endorsed by an NIH consensus conference more than a decade ago, its role in the management of spinal pain remains somewhat controversial. While numerous recent studies have uncovered multiple physiologic effects of acupuncture needling that may provide analgesia, clinical studies in patients with back pain using validated measures of symptoms and functional outcomes offer conflicting results. A recent analysis of clinical outcomes data from patients treated with medical acupuncture in Cleveland Clinic's Center for Spine Health demonstrates marked improvement in mood, global health and pain measures.

A Mix of Central and Peripheral Effects

Although acupuncture's precise mechanism of action remains uncertain, needling produces several potentially beneficial physiologic effects both centrally and peripherally. Central effects include activation of endogenous opioids (endorphins) and other neurotransmitters. Consistent with this finding is the observation that acupuncture effects can be reversed with the opioid antagonist naloxone. Studies using fMRI have demonstrated that acupuncture needling can deactivate limbic areas in the brain that are involved in central pain processing. Peripheral effects are also notable. Recently, release of adenosine, an anti-nociceptive local neuromodulator, was shown to increase after acupuncture in mice.

Clinical studies in patients with back pain have generally demonstrated that acupuncture needling is superior to treatment without needling. However, some studies comparing "real" acupuncture with nonspecific or "placebo" needling have found little difference.

Figure 1. Pain Level

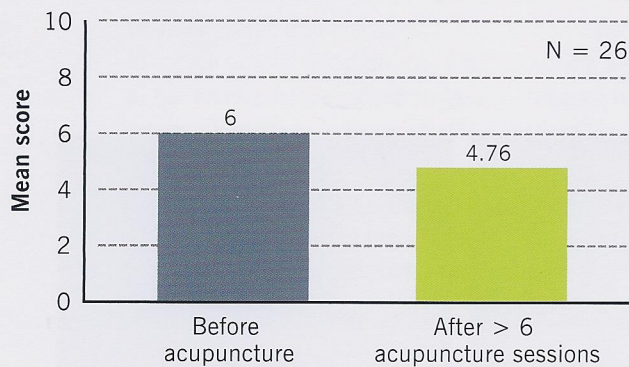


Figure 1. Regular assessment of spinal pain in patients completing more than six acupuncture sessions in 2011 (N = 26) showed an improvement in mean pain level (on a visual analogue scale from 1 to 10) that met the minimal criteria for a clinically important difference.

Figure 2. Regular assessment of mood in patients completing more than six acupuncture sessions in 2011 (N = 21) showed a decrease in mean distress/depression scores, from a level of mild depression (5.81) to the population baseline of minimal (3.23), on the nine-item depression module of the Patient Health Questionnaire (PHQ-9). Possible PHQ-9 scores range from 0 to 27.

Figure 3. Ongoing global assessment of health in patients completing more than six acupuncture sessions in 2011 (N = 24) showed an improvement of 0.13 within a range from 0 to 1.0 on the standardized EQ-5D instrument for health and quality-of-life assessment.

Figure 4. Among patients who completed more than six sessions of acupuncture in 2011, more than 65 percent reported improvement in mood (first column), more than 70 percent reported improvement in quality of life/global health (middle column) and more than 80 percent reported improvement in pain level (final column; PDQ = Pain Disability Questionnaire).

Our findings are of particular interest because many patients who are offered acupuncture have been unable to achieve adequate response to usual care.

Our Approach and Recent Outcomes

For selected patients in the Center for Spine Health, acupuncture is offered as an adjunct to comprehensive medical management for chronic spinal pain. Currently, all patients treated with acupuncture complete a regular progress assessment that measures global health, pain and mood using a set of validated instruments. Regular analysis of these prospectively collected data has found that patients who completed more than six acupuncture treatments in 2011 had clinically significant improvements in pain (Figure 1) with important gains in mood scores (Figure 2) and global health/quality-of-life scores (Figure 3) as well. Moreover, the benefit was widespread, as large majorities of patients who completed more than six acupuncture treatments showed some degree of improvement in all these measures (Figure 4).

These findings are of particular interest because many patients who are offered acupuncture have been unable to achieve adequate response to usual care. Improvement in mood scores with acupuncture has been observed in other chronic disease states, such as severe chronic obstructive pulmonary disease and headache. Ongoing assessment of clinical outcomes should allow us to better define the role of acupuncture in spinal pain management.

Figure 2. Distress/Depression

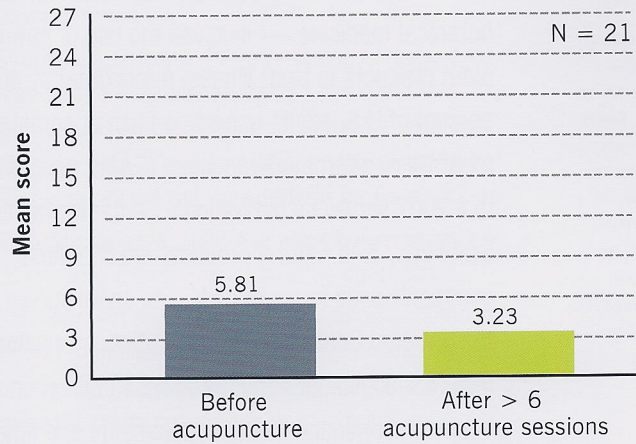


Figure 3. Global Assessment of Health (EQ-5D)

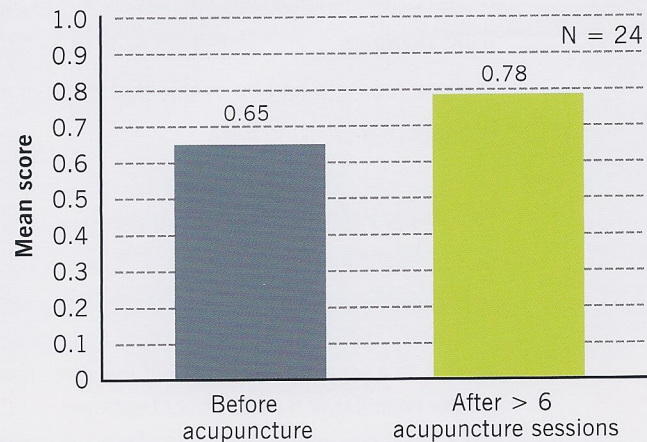


Figure 4. Proportional Breakdown of Acupuncture's Functional Effects

