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Acupuncture for Chronic Pain? Clinical Wisdom Undecided Despite Over 4000 Years of Practice

While healers and practitioners have used acupuncture to relieve pain for millennia, modern clinical trials assessing the efficacy of this approach yield seemingly inconsistent and contradictory results.

For example, in multiple rigorous studies focusing on chronic lower back pain, acupuncture outperformed standard-of-care (eg, combination of drugs, physical therapy, and exercise); surprisingly, sham acupuncture and placebo controls similarly outperformed conventional treatment.[1,2] Zetetics sometimes discount this conundrum by dismissing the formidable psychosocial influence of both actual and sham acupuncture treatments.[3,4] Moreover, the "alternative" appellation of acupuncture further fuels skepticism among health care providers, as does controversy shrouding the genesis and specificity of the underlying neurobiological mechanisms. However, the effectiveness of acupuncture analgesia is more compelling than most clinicians appreciate. Recent findings demonstrate that acupuncture performs better than both placebos and other analgesic therapies.[5] Thus, the judicious use of acupuncture affords a low-risk and evidence-based treatment option for chronic pain—an undervalued prospect to practitioners and consumers.

NOT JUST MORE THAN A PLACEBO—MORE THAN A SUPER-PLACEBO

Acupuncture relieves pain more effectively than sham acupuncture. Recent meta-analytic studies[5,6] of individual patient data—the gold standard for systematic reviews—reported that real acupuncture offered an improvement, albeit modest,[4] over sham in clinical trials for chronic pain. While this result is statistically—but perhaps less clinically—significant, these data came from 17,922 patients and held consistent across 4 prevalent conditions: back and neck pain, osteoarthritis, chronic headache, and shoulder pain.[5]

Although critics may disparage this result by highlighting inconsistent control conditions in acupuncture protocols, different characteristics of acupuncture (or acupuncturists) made little difference to treatment outcomes.[6] Using the "right" control group in acupuncture studies constitutes a nuanced task because sham acupuncture differs from placebo pills or injections. Science can rarely resort to universal control conditions because each experiment requires a control group tailored to the specific research question. Subsequently, "simulated acupuncture" has grown to encompass a wide array of practices: from needles applied to acupuncture (and nonacupuncture) points to acupressure (pressure applied using fingers or toothpicks).[1] Still, neuroimaging studies further support a distinction between sham and veridical acupuncture: sham acupuncture appears to activate endogenous analgesia through expectation-mediated mechanisms commonly implicated in placebo analgesia, while veridical acupuncture triggers supplementary neurochemical pathways.[7]

All placebo controls are not equal. Systematic review of placebos in clinical trials for back pain suggests that sham acupuncture elicits greater placebo effects than other physical placebos (eg, sham surgery), which elicit greater placebo effects than pharmacological placebos (eg, saline injection).[3] This "super-placebo," moreover, provides patients with clinical benefits over and above standard medical care.[1,2] By outperforming sham acupuncture, therefore, veridical acupuncture lives up to a stricter benchmark than conventional medication.

WHY PHYSICIANS SHOULD AT LEAST CONSIDER ACUPUNCTURE

Approximately one-third of Americans suffer from chronic pain, debilitating affected individuals and families and costing the US economy more than half a trillion dollars annually.[8] Millions fail to find adequate relief through commonly prescribed medical interventions. Many of these treatment options, moreover, carry considerable financial costs or risk of side effects. Patients seeking relief through less expensive, less toxic, and more holistic approaches may turn to various forms of complementary and alternative medicine. And yet, such alternative interventions generally lack robust clinical evidence to support their efficacy and

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often extend beyond the purview of mainstream medicine. Consequently, many doctors hesitate to recommend such treatments, leaving patients to find care on their own.

Unlike most complementary and alternative medicine options, acupuncture has been clinically ascertained as safe and effective in the relief of chronic pain as a stand-alone or adjunct therapy. Despite potential side effects (eg, infection and local hematoma), the Joint Clinical Practice Guideline of the American College of Physicians and the American Pain Society recognizes acupuncture as a viable treatment for several forms of chronic pain; the Canadian and European guidelines echo the same sentiment. Regardless, in our experience, many a practitioner tends to equate the therapeutic benefits to "mere" placebo effects and thus relegates acupuncture to the fringes of clinical medicine.

Whether or not acupuncture operates largely via placebo mechanisms, research findings propose that real and sham acupuncture may outperform standard medical care. As such, the clinical outcomes are sound according to standards of evidence-based medicine, let alone patient experience. Pain is highly responsive to placebo treatments and contextual cues. Clinicians acknowledge that psychological factors and placebos diminish assay sensitivity for analgesics. Moreover, the dramatic role of placebos extends beyond the field of pain. For example, cumulative meta-analytic findings reveal that antidepressants—backbone drugs of modern psychiatry—are clinically comparable to placebos for the treatment of mild-to-moderate depression.[9] As well, other common drugs, including antihypertensives, antianginals, postinfarction beta-blockers, antihistamines, and nonsteroidal asthma prophylactics, frequently perform on par with placebos in well-designed trials.[10] Physicians should therefore entertain the full therapeutic spectrum of acupuncture—placebo and beyond—to foster pain regulation.

WHY TREAT ACUPUNCTURE DIFFERENTLY?

A predilection for pharmaceutical interventions often colors our valuation of nondrug treatments such as acupuncture. Many common pharmacotherapies propel their actions through poorly understood mechanisms; tenuous grasp of the actual underpinnings, however, scarcely dissuades clinical use. Why should we regard acupuncture differently? In practice, "clinical outcome" trumps "mechanism of action." Of course, we would like to research and understand whether the primary contribution is bottom-up pharmacological, top-down psychological, or otherwise (eg, neurohumoral mechanisms). But if patients benefit more from acupuncture than from other available treatments for, say, lower back pain, then we should consider prescribing acupuncture, regardless of the putative mechanism.

Despite formal endorsement from US and international clinical practice guidelines, our gross calculations show that only about 2% of chronic pain patients receive acupuncture. The underutilization of acupuncture likely stems from skepticism as well as pragmatic concerns. Even among doctors with positive attitudes toward acupuncture, lack of insurance coverage or availability may limit prescriptions. While public demand has ushered growing acceptance of acupuncture by medical insurance, wider coverage still lags from Medicaid, Medicare, and many conventional, health maintenance organization, preferred provider organization, or point-of-service plans.

CONCLUSION

Clearly, data alone are not enough to transform clinical attitudes toward acupuncture; time and advocacy would probably need to play their course. Unfortunately, prevailing biases frequently lead health care providers and insurance companies to underrate alternative treatments of demonstrated therapeutic value. Policymakers, smitten with cost-effectiveness, seek affordable and effective treatments and often regard acupuncture for pain as an expensive option (similar to psychotherapy for depression). And yet, findings show that the cost-effectiveness of acupuncture exceeds that of current standard of care.[11] Given the strength and tenor of the evidence supporting the virtues of acupuncture analgesia, clinicians ought to reconsider their potential trepidation and set aside any superstition that may shroud this topic. Whether or not acupuncture plays a substantial role in the future of health care, it would behoove us to apply to acupuncture the same tenets of evidence-based medicine we so avidly comply with, adhere to, and wholeheartedly espouse.

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