## COCHRANE CAM FIELD

# COMMENTARY ON THE COCHRANE REVIEW OF ACUPUNCTURE FOR DEPRESSION

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**Background:** There is interest from the community in the use of self-help and complementary therapies for depression. This review examined the currently available evidence supporting the use of acupuncture to treat depression.

**Objectives:** To examine the effectiveness and adverse effects of acupuncture in the treatment for depression.

Search Strategy: The following databases were searched: CCDAN-CTR, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE (1966 to Dec 2008), EMBASE (1980 to Dec 2008), PSYCINFO (1874 to Dec 2008), the Database of Abstracts of Reviews of Effectiveness (DARE), CINAHL (1980 to Dec 2008), Wan Fang database (to Dec 2008). The following terms were used: depression, depressive disorder, dysthymic disorder and acupuncture.

**Selection Criteria:** Inclusion criteria included all published and unpublished randomized controlled trials comparing acupuncture with sham acupuncture, no treatment, pharmacological treatment, other structured psychotherapies (cognitive behavioral therapy, psychotherapy or counseling), or standard care. The follow-

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ing modes of treatment were included: acupuncture, electro acupuncture, or laser acupuncture. The participants included adult men and women with depression defined by clinical state description, or diagnosed by the Diagnostic and Statistical Manual (*DSM-IV*), Research Diagnostic Criteria (RDC), International Classification of Disease (ICD) or the Criteria for Classification and Diagnosis of Mental Diseases CCMD-3-R.

**Data Collection and Analysis:** Meta-analyses were performed using relative risk for dichotomous outcomes and standard mean differences for continuous outcomes, with 95% confidence intervals. Primary outcomes were reduction in the severity of depression, measured by self-rating scales, or by clinician rated scales and an improvement in depression defined as remission versus no remission.

Main Results: This review is an update and now contains data from 30 studies. Following recent searches, 23 new studies have been added and a further 11 trials were excluded (due to suboptimal doses of medication, no clinical outcomes, insufficient reporting). Thirty trials with 2,812 participants are included in the meta-analysis. There was a high risk of bias in the majority of trials. There was insufficient evidence of a consistent beneficial effect from acupuncture compared with a wait list control or sham acupuncture control. Two trials found acupuncture may have an additive benefit when combined with medication compared with medication alone. A subgroup of participants with depression as a comorbidity experienced a reduction in depression with manual acupuncture compared with SSRIs (RR 1.66, 95%CI 1.03, 2.68) (three trials, 94 participants). The majority of trials compared manual and electro acupuncture with medication and found no effect between groups.

**Authors' Conclusions:** We found insufficient evidence to recommend the use of acupuncture for people with depression. The results are limited by the high risk of bias in the majority of trials meeting inclusion criteria.

## COMMENTARY ON COCHRANE REVIEW

In the excellent Cochrane Review, Smith and colleagues provide the most comprehensive analysis of the evidence of acupuncture for depression to date, and in addition analyze the key factors that limit making evidence-based clinical recommendations. Despite the increased number of clinical trials conducted in this area. compared to the previously published Cochrane review, 1 evidence of the efficacy of acupuncture for depression remains insufficient, primarily, the authors conclude, because of the heterogeneity inherent in most of the existing trials. In addition, they point out, risk of bias and inadequate reporting continue to be a challenge in acupuncture studies.

A critical evaluation of the results and conclusions derived from this meta-analysis indicates the data is still insufficient not only to confirm but also to refute the potential clinical application of acupuncture for depression. Therefore, the question remains as to whether acupuncture may play a role in the management of this most prevalent condition, with a huge personal and socioeconomic cost to society. A closer look at a couple of important areas highlighted by this review may help suggest strategies for moving forward.

# THE PLACEBO EFFECT IN DEPRESSION

Depression is a complex, multifactorial, and recurrent condition, and although we

have made great advances in understanding the etiopathogenesis of this disorder, we have just barely begun to uncover the alterations in neural functioning that lead to depression.<sup>2</sup> Depression presents a number of key challenges to research in general, not only acupuncture. As noted by the authors of the review, the placebo response in Major Depression Disorder (MDD) is large regardless of the intervention.3 Also noted by the reviewers are the meta-analysis findings of Kirsch and colleagues:4 the difference in efficacy between antidepressants and placebo increased based on severity, but was relatively small even for severely depressed patients. These findings were supported by a different meta-analysis published in JAMA in 2010.<sup>5</sup>

Clearly, thousands if not millions of people believe to have benefited from antidepressant treatment, and physicians report significant clinical responses in their patients. Antidepressants are the most used type of prescription medication in adults (20-59);6 from 1997 to 2004, the total expenditures for antidepressants more than doubled from \$5.1 to \$12.1 billion in the United States alone.<sup>7</sup> As can be imagined, the Kirsch and JAMA reports came as a shock and stirred a great deal of controversy in both academic journals8 and the popular media and highlighted challenges in depression research: teasing apart the placebo effect, even in pharmacotherapy-based interventions is complex, especially in this patient population. Based on the evidence to date, it is inaccurate to assert that the effects of acupuncture in depression are indistinguishable from placebo effects;9 more research is clearly needed.

#### ACUPUNCTURE VERSUS SHAM

Several animal and human experimental studies indicate that acupuncture needling has demonstrable physiological effects, and that it may modify the neural functioning currently believed to be implicated in the pathophysiology of affective disorders. <sup>10-19</sup> In this review of clinical trials, however, the authors found no significant differences between the effect of acupuncture and the sham controls used. Common wisdom would indicate that these findings suggest the mechanisms underlying the therapeutic

effects of acupuncture are essentially placebo-related, and that any effects of either acupuncture or sham on depression are due to nonspecific factors. Furthermore, it could be argued that needle effects observed in basic science experiments are unrelated to therapeutic effects and may not be applicable to clinical research.<sup>20</sup> Nevertheless, a couple of small studies have found several physiological responses to be related to therapeutically relevant outcomes in humans,<sup>21,22</sup> indicating that more research is still needed.

Placebos by definition must be inert. It has been argued that many of the currently used acupuncture sham controls are not in fact inert,<sup>23</sup> and do not constitute a true placebo. Most acupuncture sham designs, especially the invasive needling shams used in these studies, assume that one or another needling parameter (ie, depth, placement, and stimulation) determines the clinical response to acupuncture. Little is known, however, about the role each of these needling components (ie, insertion depth, needle location, needle stimulation) may play on the therapeutic effect of acupuncture;<sup>20</sup> or whether this effect may vary as a result of the condition being treated. Not knowing the mechanisms by which these parameters may influence immediate and longer term physiological response to acupuncture, has handicapped our ability to design an effective sham.<sup>20</sup> It is possible that sham treatments used in these studies had some therapeutics effect and that significant differences between the groups would only be detected in much larger sample sizes or would only become evident in the long term, requiring a more substantial follow-up. Furthermore, acupuncture is a complex, interactive treatment intervention, and controlling for the specific effects of needling alone, may inadvertently ignore other nonneedling key components that are specific to acupuncture treatment, and which also need to be controlled (eg, palpation).<sup>20</sup>

### TREATMENT INTERVENTIONS

Verum acupuncture treatment interventions tested in these studies rarely reflect the way in which acupuncture is used to manage patients with depression in clinical practice, and therefore, treatments may have been therapeutically inadequate. In China, for example, where cost, availability, and integration into routine care facilitates access to acupuncture as a monotherapy for treating depression, acupuncture is performed every day; it often combines both electro and manual stimulation, and uses scalp and body points concurrently. Very few sham-controlled studies reviewed in this meta-analysis report this kind of frequency or intensity of treatment. Protocols must be informed by clinical practice; dose response, and optimal treatments need to be assessed.

In addition, acupuncture is one modality within a complete system of care. It is often used as an adjunctive therapy and as part of a whole care package tailored to the individual and that often includes the internal administration of herbal medicine. Moreover, through education patients are encouraged to make important life-style changes (ie, nutritional support, stress management, diet, and exercise) and become committed to their care. It is also common, especially in the West for depression patients to be under the care of a qualified mental healthcare professional while receiving acupuncture. Acupuncture may play a very specific role in managing depression as part of a comprehensive treatment strategy; pragmatic trials and Whole Systems Research<sup>24</sup> are needed to answer this question. The Cochrane review was designed to assess the specific effects of acupuncture; therefore, none of the trials included evaluated acupuncture as part of a whole package of care. Despite the limitations presented by these types of studies-they cannot pinpoint which specific part(s) of the total package of treatment is responsible for the effects-they may help inform the development of future explanatory trials and basic science studies.

## ACUPUNCTURE AUGMENTATION OF ANTIDEPRESSANTS

Despite the growing number of marketed antidepressants, between 19% and 34% of patients with MDD do not respond to

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