

Electroacupuncture in Treating Residual Insomnia Associated With Depression: Lessons Learned

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In this issue of *The Journal of Clinical Psychiatry*, Chung et al¹ present an interesting study on the efficacy of electroacupuncture for the treatment of chronic insomnia associated with depression. The authors found that, after 3 weeks of interventions, there was no difference between electroacupuncture and control interventions in subjective sleep efficacy, defined as percentage of time asleep over total time in bed. Furthermore, within each treatment group, there was essentially no change in objective sleep measures obtained via actigraphy, even though subjective sleep efficacy improved in all treatment arms.

The study by Chung and colleagues¹ is novel because it targets a challenging patient population, has 2 meticulously designed control interventions, and uses objective outcome measures. While some evidence supports acupuncture's effectiveness in treating insomnia²⁻⁵ and in treating depression,⁶⁻⁸ few studies have addressed acupuncture's efficacy in challenging situations where insomnia and depression coexist.⁹ Residual insomnia from depression is resistant to a variety of treatments including medications and therapy.^{10,11} The Chung et al¹ study offers a fresh, complementary approach to this challenging syndrome beyond medications and behavioral therapies. Furthermore, this unique study has 2 control interventions: placebo acupuncture, a procedure in which a nonpenetrating device¹² is placed at locations 1 inch away from the real acupuncture points, and minimal acupuncture, a procedure in which real acupuncture needles are inserted to standardized, off-meridian points and at shallow depth.¹³ While the placebo acupuncture controls for the placebo effect, the minimal acupuncture will help determine whether needle penetration is a critical factor for acupuncture's efficacy. Finally, in contrast to many human clinical studies of acupuncture where subjective measures are the main outcome, the Chung et al study¹ used objective outcome measures derived from actigraphy.¹⁴ These objective measures serve to validate the subjective measures and shed light on the efficacy and mechanisms of acupuncture. For example, in this short study, despite improvement in subjective sleep measures in the electroacupuncture and 2 control interventions, there is no significant change in the actigraphy measures, a finding that suggests a large, nonspecific effect.

Despite the strengths above, the Chung et al study¹ is not without limitations, both in research methodology and in treatment approach. From a methodological standpoint, the entire study uses a single acupuncturist. Despite standardized treatment protocols, the acupuncturist's skills and biases may still exert influence on clinical outcome.¹⁵⁻¹⁷ This provider bias may explain the difference between the positive pilot studies^{18,19} and the current study in which similar protocols are used, but the providers are different. In addition, the treatment protocol used by Chung et al¹ raises several concerns from the standpoint of traditional Chinese medicine (TCM). First, insomnia has many TCM etiologies, some of which, such as excess liver energy, would not call for an intense electroacupuncture protocol as used in this study.^{9,20,21} Instead, light, manual stimulation would be preferred. This fact may explain the trend of the worsened sleep-onset latency in the electroacupuncture group and the improved, decreased sleep-onset latency in the control groups where the intensity of needle stimulation is much lighter (Table 4 in Chung et al¹). Second, for chronic conditions, providers generally treat with acupuncture for 5-10 weeks.^{21,23} Three weeks appears inadequate for severe, chronic insomnia associated with depression. Third, the placebo acupuncture treatment may not be truly inert. The acupuncturist placed the placebo needles 1 inch away from the true points. However, 1 inch away from SP6 would get quite close to the kidney meridian (specifically KD7) and 1 inch away from PC6 would also get quite close to either the heart (HT 4) or the lung meridian (LU 7). It would have been better if the authors chose the same sham points for the placebo acupuncture as those for the minimal acupuncture, which have been previously validated.¹³ In conclusion, with a single acupuncture provider, short treatment duration, suboptimal treatment protocol, and a potentially active placebo, it is not surprising that Chung and colleagues' study¹ was negative, despite 2 previously positive pilots.

The next questions then become, What do we learn from this clinical trial? and Where do we go from here? As the authors accurately state, short-term electroacupuncture does not seem to work beyond placebo in treating residual insomnia from depression. However, this does not mean that acupuncture is ineffective for refractory insomnia associated with depression. In the much-needed future clinical trials, individualized acupuncture protocols provided at longer duration should be considered and administered by multiple providers. Actigraphy measures should be obtained prior to and after the interventions and their change compared to subjective measures, as done in this study. Finally, clinical studies of acupuncture in treating insomnia should include

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not only traditional placebo-controlled clinical trials but also comparative effectiveness studies²³ in which long-term, patient-reported outcomes and cost-effectiveness are examined.²⁴

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