



"Research & Training to Improve Clinical Care"

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Short Name: Transcranial Magnetic Stimulation in the Treatment of Chronic Widespread Pain

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Abstract:

Chronic Widespread Pain (CWP) is a disorder that affects about 4-13% of the general population and causes much suffering and disability and has significant economic impact. Fibromyalgia (FM) patients lie at the more severe end of the CWP syndrome and comprise about 20% of the CWP population. Although some treatments, such as antidepressant treatments, may lessen symptoms, there is a need for improved treatments for this disorder. Most randomized, controlled treatment trials have been unable to demonstrate a sustained positive effect. Chronic pain is associated with both depression and altered brain processing of sensory signals. In functional imaging studies, chronic pain and major depression involve several common neuroanatomical sites, which can be affected by transcranial magnetic stimulation (TMS). With TMS, an electrical current is passed through an electromagnetic coil placed on the scalp. A brief, rapidly changing magnetic field is created and induces a small electrical current within the underlying cortex. Controlled studies of repetitive TMS have shown antidepressant effects in patients with major depression. Recently, we found that TMS was more effective than sham, not only in decreasing depressive symptoms in depressed patients, but also more effective in reducing pain in these patients. TMS has been used in chronic pain and FM patients with success, but these studies have been small and/or uncontrolled. We propose to study 44 women with CWP who will be randomized into one of two conditions: 1) TMS at 120% of the estimated prefrontal cortex threshold intensity with high frequency (10 Hz with 4 second trains) to the left dorsolateral prefrontal cortex and 2) Sham stimulation. Each subject will be given 15 sessions with 75 trains per session over a period of three weeks. Blind assessment of pain and depression will take place before the 1st TMS session, after the 5th, the 10th, and 15th TMS sessions and 1 week after the 15th TMS session. We hypothesize that the TMS stimulations will be significantly more efficacious in reducing pain than the sham stimulations, in a second phase of the study, we will assess the subjects in a naturalistic follow-up 1 month and 3 months after the last TMS session. Non-responders to sham at the end of the 3 month period will be offered 15 TMS sessions. Ultimately, if TMS is shown efficacious in pain reduction, TMS could be an alternative treatment for patients with CWP.

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