



Title: Efficacy of Repetitive Transcranial Magnetic Stimulation for Major Depression Improved by Proper Coil Positioning and Patient Selection: Presented at CPA

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"Efficacy of Repetitive Transcranial Magnetic Stimulation for Major Depression Improved by Proper Coil Positioning and Patient Selection: Presented at CPA"

By Thomas S. May VANCOUVER -- September 9, 2008 -- Repetitive transcranial magnetic stimulation (TMS) is a safe, noninvasive treatment that can be as effective as electroconvulsive therapy (ECT) in many patients with major depression, according to research presented here at the 58th Annual Meeting of the Canadian Psychiatric Association (CPA) "TMS does not have any of the cognitive side effects or risks associated with ECT," said investigator Gary Hasey, MD, Department of Psychiatry and Behavioural Neurosciences, McMaster University, Hamilton, Ontario. "Our challenge is to determine how this treatment can be fully exploited, by determining which persons have the type of depression that can respond to TMS, and where the highly focussed magnetic coil is to be placed to get optimal antidepressant effect." To investigate these issues, Dr. Hasey and colleagues performed a series of studies in which the efficacy of repetitive TMS was evaluated in 87 patients with medication-resistant major depressive disorder (MDD). All patients were taken off all psychotropic medications for 10 days. They were then started on treatment with a selective serotonin reuptake inhibitor and were randomised to receive 1 of 4 treatments for 2 weeks: high-frequency repetitive TMS over the left dorsolateral prefrontal cortex (DLPFC); low-frequency repetitive TMS over the right DLPFC; bilateral repetitive TMS (high and low frequency repetitive TMS); or sham repetitive TMS. Efficacy of treatments was evaluated using the Hamilton Depression Scale. Analysis of the results showed a trend toward greater efficacy of repetitive TMS compared with sham repetitive TMS, but the difference between groups was not statistically significant ($P = .07$).

However, a subanalysis of the data revealed that, depending on coil positioning, repetitive TMS was highly effective in patients with high nocturnal melatonin excretion, who demonstrated significant improvements in symptoms when the magnetic coil was positioned 6.5 to 7.1 cm from the midline ($P = .007$).

Based on these results, the researchers concluded that the therapeutic efficacy of repetitive TMS may be substantially increased through optimal coil positioning and through the use of biological screening techniques to identify potential repetitive TMS responders.

"We believe that the effectiveness of TMS has been understated in the past," said Dr. Hasey. "With proper attention to patient selection and TMS technique, [repetitive TMS] will likely become an effective and routinely used clinical intervention for major depression."

[Presentation title: Transcranial Magnetic Stimulation for Major Depression: Does It Really Work? Abstract PS1F]

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