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Transcranial magnetic stimulation in the acute treatment of major depressive disorder: clinical response in an open-label extension trial

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Abstract

Background: This report describes the results of an open-label extension study of active transcranial magnetic stimulation (TMS) in medication-resistant patients with major depressive disorder who did not benefit from an initial course of therapy in a previously reported 6-week, randomized controlled study of active versus sham TMS.

Method: Patients with DSM-IV-defined major depressive disorder were actively enrolled in the study from February 2004 through September 2005 and treated with left prefrontal TMS administered 5 times per week at 10 pulses per second, at 120% of motor threshold, for a total of 3000 pulses/session. The primary outcome was the baseline to endpoint change score on the Montgomery-Asberg Depression Rating Scale (MADRS).

Results: In those patients who received sham in the preceding randomized controlled trial (N = 85), the mean reduction in MADRS scores after 6 weeks of open-label active TMS was -17.0 (95% CI = -14.0 to -19.9). Further, at 6 weeks, 36 (42.4%) of these patients achieved response on the MADRS, and 17 patients (20.0%) remitted (MADRS score < 10). For those patients who received and did not respond to active TMS in the preceding randomized controlled trial (N = 73), the mean reduction in MADRS scores was -12.5 (95% CI = -9.7 to -15.4), and response and remission rates were 26.0% and 11.0%, respectively, after 6 weeks of additional open-label TMS treatment.

Conclusions: This open-label study provides further evidence that TMS is a safe and effective treatment of major depressive disorder. Furthermore, continued active TMS provided additional benefit to some patients who failed to respond to 4 weeks of treatment, suggesting that longer courses of treatment may confer additional therapeutic benefit.

Trial registration: clinicaltrials.gov Identifier: NCT00104611.

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