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A multisite, naturalistic, observational study of transcranial magnetic stimulation for patients with pharmacoresistant major depressive disorder: durability of benefit over a 1-year follow-up period

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Abstract

Objective: Transcranial magnetic stimulation (TMS) is an effective and safe acute treatment for patients not benefiting from antidepressant pharmacotherapy. Few studies have examined its longer term durability. This study assessed the long-term effectiveness of TMS in naturalistic clinical practice settings following acute treatment.

Method: Adult patients with a primary diagnosis of unipolar, nonpsychotic major depressive disorder (DSM-IV clinical criteria), who did not benefit from antidepressant medication, received TMS treatment in 42 clinical practices. Two hundred fifty-seven patients completed a course of acute TMS treatment and consented to follow-up over 52 weeks. Assessments were obtained at 3, 6, 9, and 12 months. The study was conducted between March 2010 and August 2012.

Results: Compared with pre-TMS baseline, there was a statistically significant reduction in mean total scores on the Clinical Global Impressions-Severity of Illness scale (primary outcome), 9-Item Patient Health Questionnaire, and Inventory of Depressive Symptoms-Self Report (IDS-SR) at the end of acute treatment (all P < .0001), which was sustained throughout follow-up (all P < .0001). The proportion of patients who achieved remission at the conclusion of acute treatment remained similar at conclusion of the long-term follow-up. Among 120 patients who met IDS-SR response or remission criteria at the end of acute treatment, 75 (62.5%) continued to meet response criteria throughout long-term follow-up. After the first month, when the majority of acute TMS tapering was completed, 93 patients (36.2%) received reintroduction of TMS. In this group, the mean (SD) number of TMS treatment days was 16.2 (21.1).

Conclusions: TMS demonstrates a statistically and clinically meaningful durability of acute benefit over 12 months of follow-up. This was observed under a pragmatic regimen of continuation antidepressant medication and access to TMS retreatment for symptom recurrence.

Trial registration: ClinicalTrials.gov identifier: NCT01114477.

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