

Title: Treatment of Anxiety Symptoms in Patients Receiving rTMS for Treatment Resistant Depression.

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Abstract:

Background: Repetitive Transcranial Magnetic Stimulation (rTMS) is FDA-approved for treatment resistant depression (TRD) and has garnered attention as a possible treatment option for other psychiatric disorders, including anxiety. Anxious depression is associated with poorer antidepressant treatment outcomes than non-anxious depression (Fava et al. 2008). While there may be a role for rTMS in treatment of comorbid anxiety for patients with TRD, there is currently a lack of robust studies or standardized protocols for the treatment of anxiety with rTMS. **Method:** This retrospective analysis examined the effects of left-sided Dorsolateral Prefrontal Cortex (DLPFC) rTMS on comorbid anxiety symptoms of 77 patients with TRD at an outpatient neuromodulation clinic. Response rates (> 50% symptom reduction) and remission rates over an average of 32.9 treatments (SD = 9.2) were defined based on the 7-item Generalized Anxiety Disorder Scale (GAD-7) (score < 5) and the 17-item Hamilton Rating Scale for Depression (HAM-D17) Anxiety Subscale (score < 7). The reliable change index (RCI) and clinically significant change (CSC) measures were calculated to assess clinically meaningful changes in symptoms. **Results:** Seventy-seven patients (39% male, 61% female) with mean age of 45.3 years (SD = 16.7), had a baseline mean depression score of 17.5 (SD = 9.5) on the HAM-D17 and 17.5 (SD = 4.2) on the Patient Health Questionnaire-9 (PHQ-9). The baseline mean anxiety score was 11.2 (SD = 5.2) on the GAD-7 and 5.5 (SD = 2.2) on the HAM-D17 Anxiety Subscale. Patients had previously been treated unsuccessfully with an average of eight antidepressant trials (SD = 3.25). Fifty-three patients with clinically significant anxiety ratings at baseline were included in analysis of response (41.5% for GAD-7; 50% for the HDRS17 anxiety subscale), remission (22.6% for GAD-7; 83.3% for the HDS17), reliable change (45.3% for GAD-7; 54.2% for HAMD-17 anxiety subscale), and clinically significant change (41.5% for GAD-7 ; 37.5% for HAMD-17 anxiety subscale), showing relatively robust and consistent improvement in all anxiety measurements. **Conclusion:** These data show a reduction in anxiety symptoms from DLPFC rTMS in patients with TRD. Our results highlight the potential for left sided rTMS in treating comorbid anxiety and a variety of clinically useful measures to understand anxiety symptom reduction.