

## **rTMS May Be Effective in Patients With Treatment-Resistant Bipolar Depression**

November 04, 2009 | [Bipolar Disorder](#) [1], [Depression](#) [2], [Major Depressive Disorder](#) [3], [Transcranial Magnetic Stimulation](#) [4]  
By [Myra Partridge](#) [5]

Repetitive transcranial magnetic stimulation (rTMS) may be an effective therapy for treatment-resistant bipolar depression, according to the results of a recent pilot study led by Guohua Xia, MD, PhD, assistant clinical professor of psychiatry at the University of California, Davis.

Repetitive transcranial magnetic stimulation (rTMS) may be an effective therapy for treatment-resistant bipolar depression, according to the results of a recent pilot study led by Guohua Xia, MD, PhD, assistant clinical professor of psychiatry at the University of California, Davis.<sup>1</sup> Xia and colleagues undertook this study because rTMS has been shown to be effective in patients with major depressive disorder.<sup>2,3</sup> However, there have been few studies of rTMS for bipolar depression, he said.

The study included patients 18 years and older with treatment-resistant bipolar depression, defined as a lack of response to more than 2 previous therapies and a Hamilton Depression Rating Scale (HAM-D) score over 18. Patients were treated using 20 Hz rTMS on the left dorsal prefrontal cortex for a total of 15 days (5 consecutive days for 3 weeks). Throughout this period, the patients also continued taking their previously prescribed medications, which remained at the same dose. Of the 15 patients who participated in the study, the mean HAM-D score decreased from 29 at baseline to 11 after the treatment period. In 86% of patients, the HAM-D score decreased by at least 50%, and 57% of all patients reached remission. Three patients experienced tolerable focal pain, and this disappeared during the treatment period. No patients experienced seizure or manic symptoms. Xia said many of his patients were surprised and pleased by the results. "Those who responded were amazed," he said. "Many want to continue treatments." Based on the effects of this study, Xia plans to lead a larger study to examine the effects of rTMS for treatment-resistant bipolar depression.

### **References: References**

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## Augmentative repetitive navigated transcranial magnetic stimulation (rTMS) in drug-resistant bipolar depression.

[Dell'Osso B](#)<sup>1</sup>, [Mundo E](#), [D'Urso N](#), [Pozzoli S](#), [Buoli M](#), [Ciabatti M](#), [Rosanova M](#), [Massimini M](#), [Bellina V](#), [Mariotti M](#), [Altamura AC](#).

### ⊕ Author information

### Abstract

**OBJECTIVES:** The efficacy of transcranial magnetic stimulation (TMS) has been poorly investigated in bipolar depression. The present study aimed to assess the efficacy of low-frequency repetitive TMS (rTMS) of the right dorsolateral prefrontal cortex (DLPFC) combined with brain navigation in a sample of bipolar depressed subjects.

**METHODS:** Eleven subjects with bipolar I or bipolar II disorder and major depressive episode who did not respond to previous pharmacological treatment were treated with three weeks of open-label rTMS at 1 Hz, 110% of motor threshold, 300 stimuli/day.

**RESULTS:** All subjects completed the trial showing a statistically significant improvement on the 21-item Hamilton Depression Rating Scale (HAM-D), Montgomery-Asberg Depression Rating Scale, and Clinical Global Impression severity of illness scale (ANOVAs with repeated measures:  $F = 22.36$ ,  $p < 0.0001$ ;  $F = 12.66$ ,  $p < 0.0001$ ; and  $F = 10.41$ ,  $p < 0.0001$ , respectively). In addition, stimulation response, defined as an endpoint HAM-D score reduction of  $>$  or  $=50\%$  compared to baseline, was achieved by 6 out of 11 subjects, 4 of whom were considered remitters (HAM-D endpoint score  $<$  or  $= 8$ ). Partial response (endpoint HAM-D score reduction between 25% and 50%) was achieved by 3/11 patients. No manic/hypomanic activation was detected during the treatment according to Young Mania Rating Scale scores (ANOVAs with repeated measures:  $F = 0.62$ ,  $p = 0.61$ ). Side effects were slight and were limited to the first days of treatment.

**CONCLUSIONS:** Augmentative low-frequency rTMS of the right DLPFC combined with brain navigation was effective and well tolerated in a small sample of drug-resistant bipolar depressive patients, even though the lack of a sham controlled group limits confidence in the results.

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Publication types, MeSH terms





## Efficacy of high frequency (rapid) suprathreshold repetitive transcranial magnetic stimulation of right prefrontal cortex in bipolar mania: a randomized sham controlled study.

[Praharaj SK](#)<sup>1</sup>, [Ram D](#), [Arora M](#).

### Author information

### Abstract

**OBJECTIVE:** To examine the efficacy of adjunctive right prefrontal high-frequency suprathreshold rTMS treatment in bipolar affective disorder, mania patients as compared to sham stimulation.

**METHOD:** 41 right handed bipolar mania patients were randomized to receive daily sessions of active or sham rTMS (20 Hz, 110% of MT, 20 trains, 10 s intertrain interval) over the right dorsolateral prefrontal cortex for 10 days. Mania was rated using Young Mania Rating Scale (YMRS) and Clinical Global Impression (CGI) at baseline, and after 5th and 10th rTMS.

**RESULT:** For YMRS scores, repeated measures ANOVA showed a significant effect of treatment over time as shown by interaction effect ( $F=12.95$ ,  $df=1.51/58.94$ ,  $p<0.001$ , Greenhouse-Geisser corrected). For CGI-S, repeated measures ANOVA showed a significant interaction effect of treatment over time ( $F=5.34$ ,  $df=1.36/53.01$ ,  $p=0.016$ , Greenhouse-Geisser corrected).

**CONCLUSION:** High-frequency supra-threshold right prefrontal rTMS in bipolar, mania patients was well tolerated and found to be effective as add-on to standard pharmacotherapy.

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## Repetitive transcranial magnetic stimulation as an add-on therapy in the treatment of mania: a case series of eight patients.

Saba G<sup>1</sup>, Rocamora JF, Kalalou K, Benadhira R, Plaze M, Lipski H, Januel D.

### Author information

### Abstract

The aim of this study is to assess the efficacy of repetitive transcranial magnetic stimulation (rTMS) as an add-on therapy in the treatment of manic bipolar patients. Eight patients were enrolled in an open trial. They received fast rTMS (five trains of 15 s, 80% of the motor threshold, 10 Hz) over the right dorsolateral prefrontal cortex (DLPFC). They were evaluated using the Mania Assessment Scale (MAS) and the Clinical Global Impression (CGI) at baseline and at day 14. All patients were taking medication during the treatment trial. There was a significant improvement of manic symptoms at the end of the trial. No side effects were reported. The results show a significant improvement of mania when patients are treated with fast rTMS over the right DLPFC. However, these results have to be interpreted with caution since they derive from an open case series and all the subjects were taking psychotropic medication during rTMS treatment. Double-blind controlled studies with a sham comparison condition should be conducted to investigate the efficiency of this treatment in manic bipolar disorders.

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