



Repetitive transcranial magnetic stimulation (rTMS) in the treatment of obsessive-compulsive disorder (OCD) and Tourette's syndrome (TS).

Mantovani A¹, Lisanby SH, Pieraccini F, Ulivelli M, Castrogiovanni P, Rossi S.

Author information

Abstract

There is evidence that motor and premotor cortex are hyperexcitable in obsessive-compulsive disorder (OCD) and Tourette's syndrome (TS). We tested whether low-frequency repetitive transcranial magnetic stimulation (rTMS) could normalize overactive motor cortical regions and thereby improve symptoms. Subjects with OCD or TS were treated with active rTMS to the supplementary motor area (SMA) for 10 daily sessions at 1 Hz, 100% of motor threshold, 1200 stimuli/day. Suggestions of clinical improvement were apparent as early as the first week of rTMS. At the second week of treatment, statistically significant reductions were seen in the YBOCS, YGTSS, CGI, HARS, HDRS, SAD, BDI, SCL-90, and SASS. Symptoms improvement was correlated with a significant increase of the right resting motor threshold and was stable at 3 months follow-up. Slow rTMS to SMA resulted in a significant clinical improvement and a normalization of the right hemisphere hyperexcitability, thereby restoring hemispheric symmetry in motor threshold.

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- 1-Hz low frequency repetitive transcranial magnetic stimulation in children with Tourette's syndrome.
(PMID:21256925)

[Kwon HJ](#), [Lim WS](#), [Lim MH](#), [Lee SJ](#), [Hyun JK](#), [Chae JH](#), [Paik KC](#)

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Abstract

The aim of the current study was to assess the efficacy of repetitive transcranial magnetic stimulation (rTMS) over the supplementary motor area (SMA) of the cortex to children with Tourette's syndrome (TS), if rTMS over the SMA had positive effects on ameliorating tics. We designed a pilot open label 12 weeks cohort study to assess the efficacy of rTMS with TS at specific regions. We administered rTMS over SMA with slow frequency to children with TS. We examined 10 male children (mean age 11.2 ± 2.0 years) diagnosed with TS according to the Diagnostic and Statistical Manual of Mental Disorders version IV and Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version. Children with TS were treated with active rTMS to the SMA for 10 daily sessions (1 Hz, 100% of motor threshold, and 1200 stimuli/day). All subjects completed the study with no side effects and no worsening of ADHD or depressive and anxiety symptoms. Tic symptoms improved significantly over the 12 weeks of the study. Statistically significant reductions were seen in the Yale Global Tourette's Syndrome Severity Scale (YGTSS) and Clinical Global Impression (CGI). Low-frequency rTMS over the SMA appears to be effective in children with TS. Further studies using repetitive transcranial magnetic stimulation in TS are warranted, using blinded, balanced, and parallel designs. rTMS over the SMA to

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