Long-term effect of repetitive transcranial magnetic stimulation on motor function recovery after acute ischemic stroke.

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Abstract:

Abstract OBJECTIVE: Although there is evidence for short term benefits of rTMS in stroke, longer term effects have not been reported. The aim of the study was to evaluate the effect of two different frequencies of rTMS on motor recovery and on cortical excitability up to 1 year post-treatment. METHODS: Forty-eight patients with acute ischemic stroke were randomly classified into three groups. The first two groups received real rTMS over motor cortex (3 and 10 Hz respectively) of the affected hemisphere and the third group received sham stimulation of the same site, daily for five consecutive days. Disability was assessed before, after fifth sessions, and then after 1, 2, 3 and 12 months. Cortical excitability was assessed for both hemispheres before and after the second and fifth sessions. RESULTS: A significant 'rTMS x time' interaction was obtained indicating that real and sham rTMS had different effects on rating scales. This was because real rTMS produced greater improvement than sham that was evident even at one year follow-up. These improvements were associated with changes in cortical excitability over the period of treatment. CONCLUSION: These results confirm that real rTMS over motor cortex can enhance and maintain recovery and may be a useful add on therapy in treatment of acute stroke patients.

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