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Neuromodulatory approach in paroxysmal neurological disorders

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Abstract

Background: Nowadays, neuro-modulation offers different devices and techniques in the treatment of neurological patients suffering from paroxysmal disorders, such as epilepsy and migraine. Among non-pharmacologic therapies, rTMS shows good results.
Material and methods: A longitudinal, double-blinded, rTMS-intervention study was conducted on 42 subjects with episodic migraine (with and without aura, 2-14 attacks per month). After a baseline follow-up for 1 month, subjects had 6 sessions of rTMS during 2 weeks and received multifocal rTMS or sham stimulation, with further 3-month assessment via questionnaires on headache frequency .
Results: After stimulation, the real rTMS group showed a reduction in the number of attacks – 7.5 ± 3.7 at baseline to 3.8 ± 2.7 attacks at 3 months' period ($p<0.05$) with an effect lasting at least three months. The number of attacks was also reduced in the placebo group (7.3 ± 3.6 to 4.4 ± 2.9) ($p>0.05$). There was a significant reduction in the intensity of attacks over 4-week therapy in the treatment group (6.7 ± 1.5 at baseline; 5.3 ± 2.5 at 4 weeks ($p<0.05$). The conducted questionnaires revealed a positive impact on quality of life and functional outcomes. There were no serious adverse events reported.
Conclusions: Our study showed evidence that the experimental rTMS protocol significantly reduced the frequency and intensity of migraine attacks compared to placebo treatment with no serious adverse events.
Key words: transcranial magnetic stimulation, multifocal, migraine.

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