P02-545

TREATMENT OF PRIMARY INSOMNIA: EFFECT OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION WITH AND WITHOUT FIELD MODULATION BASED ON THE NORMAL SLEEP EEG

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Background and objective: Aside from medications, no effective physical methods of treatment for insomnia have been reported. The purpose of this study is to evaluate the effect on primary insomnia of sleep electroencephalogram modulated repetitive transcranial-magnetic stimulation (SEM-rTMS) compared with the effect of routine repetitive transcranial magnetic stimulation (R-rTMS).
Methods: The 126 patients who volunteered for this study were diagnosed by DSM-IV criteria. Patients were divided randomly into an SEM-rTMS group (44 cases), an R-rTMS group (42 cases), and a sham therapy group (40 cases). Each case was treated for 10d with consecutive rTMS for 30 min once a day with both patient and therapist being blind to conditions. The Krakow sleep score, electroencephalogram, and blood pressure were recorded before treatment, after the 10d treatment, and 30 days after treatment.
Results: During therapy with rTMS, a portion of the patients felt sleepy and their EEG pattern showed signs of sleep. The efficiency of producing sleep signs in the SEM-rTMS group was 79.5% and in the R-rTMS group was 45.2%, with the former being significantly higher (c^2=9.4065, P=0.0022). At 30d after completion of therapy, the efficiency of sleep production in the SEM-rTMS group was still higher than in the R-rTMS group (c^2=16.7998, P=0.0000). No obvious side effects were observed in any of the three groups during the observation period.
Conclusion: SEM-rTMS therapy for insomnia appears to be more effective and more stable than routine rTMS therapy and appears to be a safe treatment for primary insomnia.

https://doi.org/10.1016/S0924-9338(11)72846-2 Published online by Cambridge University Press