

## THERAPEUTIC EFFECT OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION ON MOTOR FUNCTION AND MOTOR EVOKED POTENTIALS IN PARKINSON'S DISEASE

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**Objective:** To inquire into the time effect of low-frequency repetitive transcranial magnetic stimulation (rTMS) on the excitability of motor cortex in Parkinson's disease (PD) patients.

**Methods:** 38 patients with PD were included in this study. For seven consecutive days, we applied 1 800 stimuli at 100% RMT intensity and 0.5 Hz frequency over the M1<sub>Hand</sub> contralateral to the (more) affected side once a day. The unified Parkinson's disease rating scale (UPDRS), ballistictask, walking test and the motor evoked potentials were assessed for each patient before rTMS and 20 min, 1 week, and 1 month after the 7th session.

**Results:** ANOVA for repeated measurements revealed a significant time effect for the global UPDRS and its motor section, rigidity and bradykinesia subscores, and the timed motor tasks during the course of the study ( $P < 0.001$ ). The PD patients clinical motor function was improved to the highest level within one week after the 7th intervention. The therapeutic effect of low frequency rTMS lasted one month. Whereas, no significant changes were observed in the tremor subscore ( $P = 0.130$ ). The effective ratio of bradykinesia subscores is 31.71%, which was assessed 20 min after the 7th intervention. There was also a significant time effect for the CSP duration ( $P < 0.001$ ), while no significant changes were found for the RMT, MEP120, and CMCT.

**Conclusion:** A 7-day course of rTMS results in statistically significant long-term improvement of the motor functions in PD patients, which is paralleled by the changes in the excitability of the motor cortex.