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Can bilateral subthalamic deep brain stimulation reserve working abilities in Parkinson's disease?

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Objectives: There is a debate on the potential advantageous effects of bilateral subthalamic deep brain stimulation (DBS) in the treatment of Parkinson's disease with early fluctuations. Our investigation aimed to evaluate if DBS therapy was able to preserve the working capabilities.

Materials & methods: We reviewed the data of 40 young (<60 year-old) PD patients who underwent DBS implantation at University of Pécs and had an at least 2 years follow-up. Patients were categorized into two groups based on their working capabilities at time of surgery: 'Active job' group (n = 20) and 'No job' group (n = 20). Baseline characteristics were comparable. Severity of motor symptoms (UPDRS-3), quality of life (EQ-5D) and presence of active job were evaluated preoperatively and 2 years postoperatively.

Results: Although similar (approximately 50%) improvement was achieved in the severity of motor and major non-motor symptoms in both groups, the postoperative quality of life was significantly better in the 'Active job' group (0.687 vs. 0.587, medians, $p < 0.05$). Majority (80%) of 'Active job' group members were able to preserve their job 2 years after the operation. However, only a minimal portion (5%) of the 'No job' group members was able to return to the world of active employees ($p < 0.01$).

Conclusions: Although our study has several limitations, our results suggest that in patients with active job the appropriately 'early' usage of DBS might help preserve working abilities in a two-year time-frame and gain higher improvement in quality of life.

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High frequency repetitive transcranial magnetic stimulation can improve depression in Parkinson's disease

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Background: There are inconsistent data on the efficacy of bilateral repetitive transcranial magnetic stimulation (rTMS) over the motor cortex on depression associated with Parkinson's disease (PD). Therefore, we conducted a randomized, double-blind, placebo-controlled study to evaluate this hypothesis.

Methods: Forty-six patients with PD and mild-moderate depression randomly assigned to active (n = 23) and sham (n = 23) rTMS. Two patient in the sham group did not complete the protocol because of reasons unrelated to the study. High frequency rTMS was applied over the primary motor cortex bilaterally for 10 days. An investigator blinded to the treatment performed three video-taped examinations on each patient: before stimulation (baseline), 1 day (short term), and 30 days after treatment session ended (long-term effect). Primary endpoint was the changes in depression while secondary endpoints included health-related quality of life scales and Movement Disorders Society Unified Parkinson's Disease Rating Scale (MDS-UPDRS).

Results: In the actively-treated group not only the severity of depression (from 17 to 7 points, Montgomery-Asberg Depression Rating Scale, median values, $p < 0.001$) improved, but also the health-related quality of life (from 25.4 to 9.6 points, PDQ-39 summary index, median values, $p < 0.001$). Besides, we could also demonstrate an improvement in MDS-UPDRS Motor Examination. In the sham-treated group none of the examined tests and scales improved significantly after sham stimulation.

Conclusions: Our results demonstrate the beneficial effects of high frequency rTMS over the motor cortex on depression and health-related quality of life in PD. However, this result should be confirmed in patients with severe depression by further clinical trials.

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In vivo-morphology of ocular changes in patients with Parkinson's disease

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Background: Parkinson's disease (PD) is known to produce alterations in dopaminergic neurons in human retina. Recent reports showed a decrease in retinal thickness and selective retinal layers.

Objective: To investigate macular and optic nerve (ON) morphology in PD comparing the eyes on the "more" or "less" affected sides and healthy controls using optical coherence tomography (OCT).