Unilateral subthalamic nucleus deep brain stimulation improves sleep quality in Parkinson's disease.

BACKGROUND: Sleep disturbances are common in Parkinson's disease (PD). Bilateral subthalamic nucleus (STN) deep brain stimulation (DBS) is superior to best medical therapy in the treatment of motor symptoms in advanced PD, and observational studies suggest that bilateral STN DBS improves sleep in these patients as well. Unilateral STN DBS also improves motor function in PD, but its effects on sleep have not been extensively investigated.

METHODS: We report the effects of unilateral STN DBS on subjective sleep quality as measured by the Pittsburgh Sleep Quality Index (PSQI) in 53 consecutive PD patients. These subjects completed the PSQI prior to surgery and at 3 and 6 months post-operatively. The primary outcome measure was the change in the global PSQI at 6 months post-operatively versus the pre-operative baseline, measured with repeated measures analysis of variance (ANOVA).

RESULTS: Patients with PD who underwent unilateral STN DBS had a significant improvement in PSQI at 6 months post-operatively (baseline 9.30 ± 0.56 (mean ± SEM), 6 months: 7.93 ± 0.56, p = 0.013). Supplemental analyses showed that subjects selected for STN DBS placed on the right had worse baseline subjective sleep quality and more improvement in PSQI at 6 months compared to patients who received left STN DBS.

CONCLUSION: This prospective case series study provides evidence that unilateral STN DBS improves subjective sleep quality in patients with Parkinson's disease.
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PD at up to 6 months post-operatively as measured by the PSQI.