

Behavioural effects of bilateral subthalamic stimulation in advanced Parkinson disease: A systematic review

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Introduction: The long-lasting beneficial effects of subthalamic nucleus (STN) deep brain stimulation (DBS) on motor function have now largely been acknowledged. Whereas behavioural side-effects have been demonstrated in certain case reports and small case series, some authors have not observed any behavioural complications at all. The extent to which these complications occur has not yet been established. The aim of the present study was to systematically analyze behavioural complications of bilateral STN DBS.

Materials & Methods: A structured Medline search was conducted using previously described methods. Studies were selected according to specific in- and exclusion criteria. Data on patients, surgical technique, outcome and complications were collected and pooled.

Results: In total 1398 patients who underwent bilateral STN DBS were included. The total cumulative follow-up period was 1480 patient-years. The majority of the patients presented with a behavioural complication. Cognitive problems were seen in 41%, depression in 8%, and (hypo)mania in 4% of the patients. Anxiety disorders were observed in less than 2%, and personality changes, hypersexuality, apathy, anxiety, and aggressiveness were observed in less than 0.5% of the group studied.

Conclusion: Data from the present review show that the most prominent behavioural effects were complications were cognitive and affective alterations. Caregivers should be aware of the extent of these behavioural changes and should carefully inform their patients before surgery.