

Medication Reduction After DBS Placement in Parkinson's Disease

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OBJECTIVE:

Proportion of Parkinson's disease (PD) patients achieving the goal of at least 50% reduction in dopaminergic medications after deep brain stimulator (DBS) placement over a period of 3 years. Is the DBS effect being sustained over the long run and is it a disease-modifying therapy?

BACKGROUND:

Understanding the long term effects of DBS placement in PD patients and quantification of reduction of dopaminergic medications over a period.

DESIGN:

A retrospective review of a prospectively maintained database at our center of PD patients undergoing DBS surgery between 2002 and 2014. Of 174 cases, 137 have been reviewed (who followed atleast for 3 months). Each patient was followed for 3 years, post-DBS. Dopaminergic medications were converted to Levodopa Equivalent Dose (LED). 50% reduction in LED has been set and proportion of patients in whom the goal was achieved at 3 months, 1 year and 3 years post-DBS was noted. Statistical methods used were Paired Sample t-test and Group analysis.

RESULTS:

Mean LED, before surgery: 1251.54; post-DBS: at 3 months (629), 1year (749) and 3 years (900). Post-DBS, 50% dose reduction in % of patients: at 3 months (51%), 1 year (34%) and 3 years (25%). No difference in characteristics (age, age of onset of PD, duration of Levodopa treatment, number of years of PD prior to DBS placement) of the patient population in whom 50% dose reduction was possible compared to population in whom it was not.

CONCLUSION:

In at least one-fourth of the patients, we can decrease dopaminergic medications by 50%, even after 3 years. This study provides an indirect evidence that effect of DBS is sustained over the period. Additional studies are required to prove whether DBS surgery helps in disease modification.