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The impact of deep brain stimulation on social and occupational functioning in people with Parkinson disease

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Introduction: Deep brain stimulation of the subthalamic nucleus (STN-DBS) is an established treatment for motor symptoms of advanced Parkinson disease (PD). Nevertheless, the effects of STN-DBS on social/occupational functioning and patients’ satisfaction for the procedure are still matter of debate. Therefore, the selection and follow-up of patients are still challenging.

Objective: Our primary aim was to explore STN-DBS impact on social/occupational functioning of PD patients. The secondary aim was to evaluate the relationship between patients’ social/occupational functioning and specific clinical and psychological variables.

Methods: Twelve advanced PD patients (mean age: 59.3 ± 9.8 years) treated with STN-DBS were submitted to an extensive neurological and neuropsychological assessment before (V0) and approximately one year after neurosurgery (V1; mean follow-up duration: 20.3 ± 6.5 months). We administered the “Questionario del Funzionamento Sociale” (QFS), concerning the social functioning, and a semistructured interview aimed to investigate satisfaction for STN-DBS, social and familiar relationship, hobbies and occupational status. Descriptive statistics and Spearman correlations were employed.

Results: Our patients showed a good social functioning (QFS-G V0: 61.92 ± 7.62 ; V1: 61.58 ± 6.81 ; range: 16-80; $p=0.84$). Patients’ satisfaction about STN-DBS was highlighted (8.67 ± 0.98 ; range: 0- 10). Satisfaction for occupational status and familiar relationship was high (7.50 ± 2.35 and 7.83 ± 1.27 respectively; range 0-10). A significant inverse correlation was found between satisfaction for STN-DBS (Item 1 of the interview) and UPDRS III score ($r=-0.605$; $p<0.05$). Satisfaction for hobbies (Item 6 of the interview) and domestic activities (Item 8 of the interview) were significantly and inversely correlated with apathy score at V1 ($r=-0.652$ and -0.603 respectively; $p<0.05$).

Conclusions: Our pilot study showed a good level of satisfaction and social/occupational functioning in PD patients who underwent STN-DBS in a short term follow-up, pending confirmation in other cohorts with larger sample size.