

## The impact of Deep Brain Stimulation on the sexual function of patients with Parkinson 's disease

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Background: Deep Brain Stimulation (DBS) of the subthalamic nucleus (STN) is useful in the treatment of advanced Parkinson 's disease (PD). Despite having well-established benefits over the motor complications, few studies addressing the impact of DBS on nonmotor dimensions such as sexual function have been conducted. This study aims to determine the effect of DBS-STN on the sexual function of patients with Parkinson 's disease and to establish predictive factors for sexual function decline after surgery. Methods: 21 consecutive patients with PD submitted to DBS-STN were compared to 19 PD patients eligible for DBS-STN. Variables and measures include sexual function evaluation (FSFI and IIEF), severity of depressive symptoms (BDI-II) and quality of life (PDQ-39). The primary outcomes are the development of sexual dysfunction in women (FSFI score  $\leq 26.5$ ) and erectile dysfunction in men (IIEF - Erectile Function domain score  $\leq 25$ ). Univariate and multivariate regression analysis was performed to outline risk factors for developing sexual function deterioration and to calculate the relative risk for each of them. Results: Erectile dysfunction was present in 83,3% of males and sexual dysfunction in 77,8% of females submitted to DBS-STN, which did not differ statistically from the non-surgically treated group. Emotional well-being PDQ-39 score was significantly higher in women with sexual dysfunction ( $p=.017$ ) and lower in men with erectile dysfunction ( $p=.043$ ). Female sexual dysfunction was associated with higher prevalence of cardiovascular diseases ( $p=.012$ ). Age showed to be an independent predictive factor for developing erectile dysfunction in men ( $RR=1,259$ ;  $p=.025$ ) and sexual dysfunction in women ( $RR=1,304$ ;  $p=.039$ ), regardless of being submitted to DBS-STN. Conclusions: Sexual function in both genders of patients with Parkinson 's disease does not seem to be influenced by DBS-STN itself, but by the patients' clinical and personal features. Key-words: Parkinson 's disease; Deep Brain Stimulation; Sexual dysfunction; Erectile dysfunction.