

PARKINSON DISEASE

Deep brain stimulation does not affect cognitive functions in Parkinson disease

Deep brain stimulation (DBS) does not increase the rate of cognitive decline in patients with Parkinson disease (PD), an Italian study suggests. Roberta Zangaglia and colleagues of the Mondino Institute of Neurology, Italy, performed neurological evaluations over a 3-year period and found that DBS could result in a worsening of verbal fluency. Cognitive functions, by contrast, seemed only to be transiently affected.

The short-term and long-term benefits of DBS on motor symptoms in advanced PD are widely recognized, report Zangaglia *et al.*, and are generally believed to be worth the risks associated with invasive surgery. PD is not just a motor disorder, however; it is also characterized by cognitive changes, and evidence of the effects of DBS on cognitive processes is sparse and conflicting. The effects of DBS on cognitive function are important

to establish, because deleterious changes in mental processes can have dramatic consequences for the quality of life of patients with PD.

“...electrical stimulation of the subthalamic nucleus ... is comparatively safe from a cognitive perspective”

Neurological examination 1 month after surgery revealed that patients with PD had impaired cognition and difficulty communicating orally. This incapacity of the patients to express themselves satisfactorily when speaking was also evident at the end of the study 3 years later, a predicament that was not apparent in patients with PD who had declined surgery. Impaired cognition, however,

seems to be a transient consequence of DBS, and could be a consequence of the surgical procedure: logical executive functions in patients with PD who had opted for surgery were normal 1 year later, and continued to be normal at the end of the study.

Although DBS seems to result in a worsening of verbal fluency, Zangaglia *et al.* conclude that electrical stimulation of the subthalamic nucleus, as a means of controlling motor disturbances in PD, is comparatively safe from a cognitive perspective. This information will be helpful to patients with PD when considering surgery.

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Original article Zangaglia, R. *et al.* Deep brain stimulation and cognitive functions in Parkinson's disease: a three-year controlled study. *Mov. Disord.* doi:10.1002/mds.22603