P103

Short and long-term motor outcome of STN-DBS in Parkinson's disease: focus on sex differences

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Introduction: Deep Brain Stimulation of the Subthalamic Nucleus (STN-DBS) is an established treatment for Parkinson's disease (PD) with motor fluctuations and dyskinesias but studies on the long-term outcome are still scarce [1]. Moreover, the possible effect of sex in determining STN-DBS outcome is not well known [2].

Objective: In this study we describe the long-term motor outcome of STN-DBS in a cohort of PD patients consecutively treated in our center, with a focus on the possible differences associated with sex.

Methods: We reviewed all patient charts from our electronic database and retrospectively collected demographical and clinical data at baseline and at three follow-up visits: 1 year (±2 months), 5 years (±12 months), 10 years (±24 months).

Results: 107 patients (71 men) were included in the study. We found a longlasting effect of DBS on motor complications despite a progressive worsening of motor performances in the ON medication condition. Women showed a trend towards worsening in bradykinesia already at 1-year follow-up and possible poorer scores in non-dopaminergic features at 10-years follow-up. Levodopa Equivalent Daily Dose (LEDD) was significantly reduced after surgery however, while in men remained significantly lower than baseline, in women LEDD returned at baseline values at 10-years follow-up. Men showed a sustained effect on dyskinesias but this benefit was less clear in women and the total electrical energy delivered by STN-DBS was consistently lower in women compared to men. The profile of adverse events did not appear to be influenced by sex.

Conclusions: Our data suggest that there are no major differences on the motor effect of STN-DBS between men and women. However, there may be some slight differences that should be specifically investigated in the future and may influence therapeutic decisions.

References

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