A multicentre European survey of advanced therapies (apomorphine and levodopa infusions and subthalamic nucleus deep brain stimulation) in Parkinson’s disease

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BACKGROUND:
• Intrajeunal levodopa infusion (IJLI), subcutaneous apomorphine infusion (APO) as well as deep brain stimulation of the subthalamic nucleus (DBS-STN) are established treatments for advanced Parkinson’s disease (PD) although there are considerable differences in cost of treatment.
• The Euroinf study¹ as well as studies with DBS² suggest wide variability in parameters affecting patient selection for these advanced therapies, as well as a variable outcome.

METHODS:
• Analysis of data registry collecting real life clinical variables in patients with advanced PD undergoing advanced therapies from a multicenter European network of the MDS non-motor PD study group.
• As part of clinical practice all had assessments of motor (Unified PD Rating Scale: UPDRS III and IV Scales for Outcomes in PD: SCOPA-motor and SCOPA-complications), non-motor symptoms (Non-Motor Symptoms Scale: NMSS) and quality of life outcomes (Quality of Life Questionnaire: PDQ-8) scores as well as demographic variables. Data collected at baseline and at 6 months FU
• Selection of patients for advanced therapies was based on established local pathways and clinician discretion. Adverse events if any were recorded in the registry noting any relation to therapy.
• Kruskal-Wallis equality-of- populations rank test was used with Benjamini-Hochberg correction for multiple comparisons.

RESULTS:
• There were no significant differences in age of patients selected for advanced therapies between the groups, although patients with DBS were slightly younger (see Table 1).
• Duration of PD before advanced treatment was significantly lower (p<0.0004) in DBS (10.7±4.9yrs) compared to APO (14.0±4.4 yrs), or IJLI (16±6.7yrs).
• Severity of PD (Hoehn and Yahr stage: HY) showed significantly more severe patients in the IJLI group, more moderate patients in the APO group and milder patients in the DBS group (p=0.001).
• Motor symptoms: All three therapies showed significant improvement on motor and motor complication scores measured by UPDRS III and IV or SCOPA-motor and SCOPA-comp. (see Table 2).
• Non-Motor Symptoms and Quality of life: The effect of all therapies at FU compared to baseline showed a significant improvement for all total scores as measured by NMSS and PDQ-8 and an improvement for all NMSS domains, most of which significant.

REFERENCES:

CONCLUSIONS:
• This first real life multicentre survey of APO infusion vs. IJLI vs. DBS-STN in advanced PD does not include comparative groups: while the age range of patients selected for advanced therapies was similar across all centres, it appears that DBS-STN group had milder motor PD compared to APO and IJLI therapies, the latter being performed in most severely affected patients.
• All 3 therapies lead to a significant improvement in Motor scores, NMSS-Total scores and Quality of life measures at 6 months follow up during the observational period.

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