

Comparison study of advanced therapies on sleep disorders in Parkinson's disease

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Introduction: Sleep disorders are a very common non-motor symptom in advanced Parkinson's disease (PD), with significant negative impact on patients and caregivers' quality of life [1]. Advanced Stage Therapies (AST) for PD could have beneficial effects on sleep disorders [2, 3]. However, the impact of AST on sleep disorders is still matter of debate, especially considering a long-term follow-up.

Objective: To evaluate long-term impact of AST for PD on sleep disorders and daytime sleepiness.

Methods: Sixty-six PD patients at the time of evaluation for AST (T0) underwent an extensive neurological and neuropsychological assessment, including subjective evaluation of sleep nocturnal symptoms and daytime sleepiness through the Parkinson's Disease Sleep Scale (PDSS-2) and the Epworth Sleepiness Scale (ESS). After the assessment, twenty-four patients underwent Deep Brain Stimulation (DBS), twenty-six Levodopa-Carbidopa intestinal gel (LCIG) infusion, and sixteen continued Best Medical Treatment (BMT). Sleep assessment was repeated at 36 months (T1) for all patients.

Results: A significant reduction in the PDSS-2 and ESS scores was observed at T1 in the DBS group (PDSS-2: 24.13 ± 10.69 vs 18.37 ± 9.85 ; $p=0.034$; ESS: 9.38 ± 4.30 vs 6.58 ± 3.83 ; $p<0.001$), and for the ESS score in the LCIG group (9.08 ± 5.29 vs 6.38 ± 5.00 ; $p=0.046$). No significant differences were observed for BMT group in both PDSS-2 and ESS scores. After correction for multiple comparisons, the PDSS-2 score significantly improved in the DBS group compared to BMT ($p=0.049$); better scores were found for LCIG group compared to BMT, albeit without reaching the statistical significance ($p=0.109$). No significant differences were observed between DBS and LCIG groups for both questionnaires.

Conclusions: Our study supports previous findings on efficacy of AST on sleep disturbances in PD [2,3]. In particular, the efficacy of LCIG on daytime sleepiness was outlined. Moreover, the beneficial impact of DBS on sleep quality was confirmed, even after 36 months from surgery.

References

- [1] Chahine et al., 2017. Sleep Med Rev: 35: 33-50.
- [2] Jost et al., 2021. J Parkinsons Dis: 11 (1): 323-335.
- [3] Zibetti et al., 2017. J Neurol: 264 (6): 1085-1090.