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Sway analysis in patients affected by Parkinson disease with and without self-reported neuropsychiatric symptoms

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Introduction: Neuropsychiatric symptoms (NPS) are the most common non motor features in Parkinson disease (PD) [1]. Previous studies suggested that PD patients have abnormal postural sway, incresing with disease progression [2] and correlated with dysfunctional cognition [3].

Objectives: To assess balance in PD patients with and without self-reported NPS in comparison with de novo PD patients by means a short sway test.

Methods: Patients were assessed with MDS-UPDRS and classified as having (NPS+) or not (NPS-) NPS based on the clinical opinion and according to an arbitrary cut-off, namely the sum of the first six elements of MDS-UPDRS part IA ≥ 3. To extract the sway features, a standing phase of five seconds with BTS Gait Lab system was performed. Clinical and demographical data were analysed. The One-way ANOVA Test with post-hoc Bonferroni correction was chosen to perform the statistical analysis trough the software SPSS.

Results: Twenty-five patients were classified as PD NPS+, whereas 25 patients as PD NPS-. In addition, 25 de novo PD patients were chosen to be a control group. As expected, regarding clinical and demographical data, ANOVA test with post hoc analysis showed differences in disease duration, Hoehn and Yahr scale, daily LEDD dose, part 3 and 4 of MDS-UPDRS in de novo PD patients as compared with both NPS+ and NPS-, whereas NPS+ and NPS- were comparable, except for total and part 1 and 2 of MDS-UPDRS. Sway parameters, namely longitudinal oscillation range, mean radius, equivalent radius, path lenght and mean velocity, resulted significantly different in NPS+ vs de novo PD patients.

Conclusions: A short sway test proves that PD NPS+ patients display higher postural instability parameters with consequent increased risk of falling. Screening for NPS may aid to identify a PD subpopulation at increased risk of instability and therefore suitable for an early rehabilitation process.

References:

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