Association of obstructive sleep apnea with brain volummetry and cognition in de novo Parkinson's disease

Josef Mana

2024-07-29

Methods

Neuropsychological assessment

All patients (PD) and healthy controls (HC) were administered a battery of neuropsychological tests at enrollment to the study and a subsample of participants were administered the same tests at re-test four years after the enrollment. The battery included assessment of (i) declarative memory via Rey Auditory Verbal Learing Test (RAVLT) (Bezdicek et al. 2014; Frydrychová et al. 2018); (ii) attention via Trail Making Test, part A (TMT-A) (Bezdicek et al. 2012; Bezdicek, Stepankova, et al. 2017), and dot colour naming (PST-D) as well as naming colour of neutral words (PST-W) conditions from Prague Stroop Test (Bezdicek et al. 2015); (iii) executive function via Trail Making Test, part B (Bezdicek et al. 2012; Bezdicek, Stepankova, et al. 2017), and Prague Stroop Test, interference condition (i.e., naming colour of contrasting colour words, PST-C) (Bezdicek et al. 2015); and (iv) processing speed via Grooved Pegboard Test (GPT) (Kløve 1963). The patients were further examined using tests from the standard International Parkinson and Movement Disorder Society (MDS) neuropsychological battery at Level II for mild cognitive impairment in Parkinson's disease (PD-MCI) (Litvan et al. 2012; Bezdicek, Sulc, et al. 2017). The Czech normative calculator established by Bezdicek, Sulc, et al. (2017) was used to assign PD-MCI diagnosis to each PD patient separately at enrollment and retest. Finally, all participants were yearly administered Montreal cognitive assessment (MoCA) (Kopecek et al. 2017; Nasreddine et al. 2005) for cognitive screening.

Statistical analysis

All demographic variables were described by their mean and standard deviation if continuous and frequency if nominal separately for HC OSA-, HC OSA+, PD OSA-, and PD OSA+ groups of participants.

Cortical thickness

4 Fíla

Subcortical volummetry

Cognitive variables

Results

Sample description

Cortical thickness

4 Fíla

Subcortical volummetry

Cognitive variables

Appendix

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