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Cognitive decline in patients with Parkinson's disease and GBA mutation: preliminary results of a longitudinal neuropsychological study

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Introduction: Mutations of glucocerebrosidase (GBA) are associated with an increased incidence of Parkinson's disease (PD) [1]. Moreover, studies showed that PD patients with GBA mutation (mPD) present a more severe cognitive decline compared to PD patients without GBA mutation (iPD) [2]. However, neuropsychological profile of mPD patients have been poorly defined: only three studies evaluated patients with an extensive neuropsychological assessment, and only two studies included a control group of iPD.

Aim: Profiling and follow-up of cognitive performance of mPD compared to iPD.

Methods: 5 mPD and 5 iPD patients underwent a neurological and a II level cognitive assessment at baseline (T0) and after one year (T1). The data were analysed retrospectively, using non-parametric analyses; mPD and iPD (i) with dementia and psychosis at T0, (ii) without cognitive follow-up, and (iii) with neurological comorbidities were excluded. At T0, mPD and iPD were matched for all the clinical-demographic variables, but they differed in Digit Span Backward performance (p=0.045).

Results: Analysis of variance between T0 e T1 showed significant different performances in mPD and iPD in Digit Span Backward (p=0.010), Rey Auditory Verbal Learning Test-Delayed Recall (p=0.017), and Unknown Face Recognition (p=0.014). Specifically, post-hoc analysis for these tests showed a Group effect with worse performance for mPD. Notably, in the mPD group two patients remained cognitively unimpaired (CU), two changed from single domain MCI (sdMCI) to multi-domain MCI (mdMCI), while 1 from CU became mdMCI. Instead, all iPD remained CU. Considering emotional symptomatology, mPD and iPD differed in GDS and PAS, particularly mPD compared to iPD group showed more anxiety-depressive symptoms.

Conclusions: Preliminary results showed higher cognitive decline in mPD compared to iPD at one-year follow-up, particularly in working memory, verbal long-term memory and visual-perceptual abilities. Although preliminary, these data support the relevance to cognitively evaluate mPD to better understand the profile associated with the type of GBA mutation and to better organize the treatment process.

Bibliography:

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