Memory and attention in non-demented patients with Parkinson’s disease

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Background

Patients with Parkinson’s disease (PD) have a high risk of developing Parkinson’s disease dementia (PDD). PDD is characterized by an accentuated decline in mental speed and executive functions and comparatively little deficits in short-term memory. The aim of this study was to find out, whether PD patients not suffering from dementia may show these impairments in a smaller extent.

Methods

We determined the neuropsychological profile of PD patients not suffering from dementia (MMSE score between 27 and 30). In a multicentric study, the cognitive performance of PD patients was examined by means of the computer-based Memory and Attention Test (MAT). By means of the MAT, selective attention as well as working and short-term memory for verbal, figural and episodic material are assessed. The findings in the PD patients were compared with those of an age-, sex- and education-matched control group by means of unpaired Student’s t-tests.

Patients

The study was conducted in 40 non-demented PD patients (22 men, 18 women) at ages between 48 and 85 years (mean ± SD: 70.4 ± 8.2 years). The stage of PD according to the Hoehn and Yahr scale was between 1 and 3 (mean ± SD: 2.3 ± 0.7). MMSE scores was between 27 and 30. Duration of PD ranged between six months and 16 years (mean ± SD: 5.7 ± 4.0 years).

Cognitive impairments

Neuropsychological testing revealed a mild impairment of episodic working (p<0.05) and a substantial impairment of selective attention, which increased with task complexity (p<0.001). There were no significant impairments of the other memory domains studied.

Conclusion

In these non-demented PD patients we observed a decline of selective attention, which increased with task complexity, and a decrease of episodic working memory. Both of these capacities are dependent on mental processing speed. Thus, mental slowing may have caused the deficits.

Disclosure

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