

MEETING ABSTRACT

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# Cognitive dysfunction in non-demented patients with Parkinson's disease

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## Background

Parkinson's disease (PD) is a common degenerative disorder, with clear evidence of cognitive impairment, mostly of executive and visuospatial functions [1-4]. The aim of the present study was to evaluate the neuropsychological (nps) profile in a sample of Greek non-demented PD patients.

## Materials and methods

One hundred and thirty-nine non-demented PD patients (82♂/57♀; age:62.3 ± 9.2, education:11.0 ± 3.7, disease's duration:12.2 ± 7.3), diagnosed between 1990-2000 according to explicit and generally accepted criteria based on neurological clinical examination, and 139 well-matched healthy controls (HC; 82♂/57♀; age:62.4 ± 9.2, education:11.0 ± 3.5) were included in the study. Both groups underwent a comprehensive series of neuropsychological tests, covered the cognitive domains of attention, learning and memory, language and academic skills, perceptual, constructional and visuomotor dexterities, verbal and visual reasoning, and executive functions. Patients did not show motor disabilities severe enough to interfere with nps performance.

## Results

Statistical analysis was applied and the alpha level was set at 0.1% because of multiple comparisons. PD patients showed significantly worse performance ( $p < .001$ ) compared to HC on most of the administered nps tests. When effect sizes (Cohen's  $d$ ) were calculated, the magnitude of mean difference between HC and PD was

small to medium ( $0.5 \leq d \leq 0.8$ ) on tests of language and academic skills, verbal and visual reasoning, except for the large effect size in the Picture Completion WAIS subtest ( $d = 0.8$ ). On tests of attention, memory, perceptual, constructional and visuomotor dexterities, as well as executive functions, Cohen's  $d$  values corresponded to medium-large and large effect sizes ( $1.2 \leq d \leq 0.8$ ). Disease's duration wasn't significantly associated ( $p$  n.s.) with patients' nps performance. Within PD group with less than 10 years of disease's duration, a substantial proportion of patients (>50%) still scored less than the 5th %ile of HC performance on some tests of memory and executive functions. Age at onset was significantly associated ( $p < .001$ ) with specific measures of memory and executive functions, with patients developing the disease in older age revealing worse performance.

## Conclusions

Neuropsychological dysfunction is present in patients with Parkinson's disease even in early stages and in absence of severe motor impairments. Most affected cognitive domains are emerged those of executive functions, visuo-perceptual and constructional dexterities, verbal and visual memory, as well as attention.

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