EARLY COGNITIVE DYSFUNCTION IN MULTIPLE SYSTEM ATROPHY

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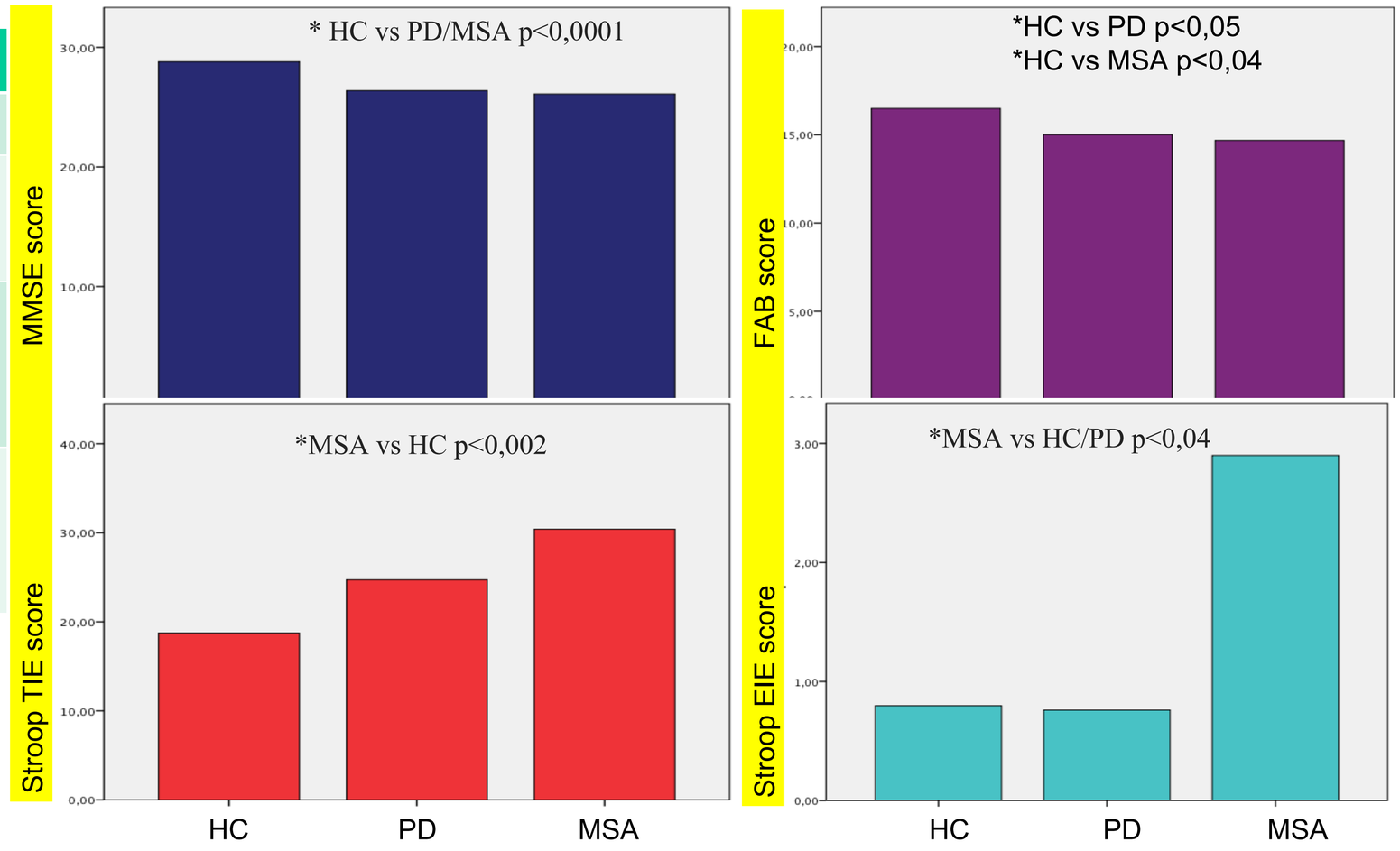
Objectives:
To characterize early cognitive features in Multiple System Atrophy (MSA) patients.

Materials and methods: We retrospectively reviewed charts comprehensive of neuropsychological evaluations performed in the early disease phase (disease duration less then 2 years from clinical onset at the moment of evaluation) of 27 patients (9 F, 18 M; mean age 65,7±8,2ys; education 6,2±2,9ys; UPDRS III 24,5±8,8) referring to the Movement Disorder Centre of Pisa and then followed-up for at least 5 years up to a diagnosis of probable MSA (confirmed by the clinical progression of motor and autonomic features, MRI and dopamine transporter imaging).
Twenty seven PD patients matched for age, education level and disease duration (8F, 19M; mean age 66,4±4,3ys; education 7,6±3,3ys; UPDRS III 15,6±6,8) and 27 healthy controls (HC) (9F, 18M; mean age 66,2±6,1ys; education 7,4±2,8ys) were also enrolled. The neuropsychological test battery was extensive, comprehensive of Mini Mental State Examination (MMSE), Frontal Assessment Battery (FAB), Digit Span test, Rey auditory verbal learning test, Rey figure test, Verbal Fluency, Colored Progressive Matrices 47, Stroop test. Statistical analysis was performed with ANOVA and Bonferroni correction (software program SPSS19).

Results: Group comparison showed a statistically significant difference in MMSE score between HC and both PD and MSA, with a score <26 in 9 PD (33%) and 12 MSA (44%) patients (Table). FAB corrected score was significantly higher in HC than in PD and MSA. Stroop Time Interference Effect score was higher in MSA compared to HC, whereas no statistically significant difference emerged between HC and PD patients and between PD and MSA. Stroop Error Interference Effect score was higher in MSA patients both compared to HC and PD patients.

	HC	PD	MSA
MMSE	28,8±1,6	26,4±1,5	26,1±2,2
FAB corrected score	16,5±2,1	15,0±2,5	14,7±1,5
Stroop Time Interference Effect (TIE) score	18,7±8,6	24,7±12,5	30,4±12,4
Stroop Error Interference Effect (EIE) score	0,8±1,9	0,8±1,7	2,9±4,4

HC=Healty Controls,
PD=Parkinson's Disease,
MSA=Multiple System Atrophy



Discussion:
Our results confirm previous data of a possible cognitive dysfunction in MSA patients (1, 2), detectable also in the early phase and with a prominent frontal-executive pattern similar to PD, as demonstrated by lower scores at FAB with respect to HC. Even though dementia is a rare condition in MSA patients, in some case attention deficit could be more severe than that observed in PD.
Conclusion: Further prospective studies are needed but our results support the importance to perform targeted neuropsychological evaluation in the diagnostic paradigm to detect early cognitive dysfunction in MSA patients.

Bibliography:
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