

Serum lipids fractions and executive functioning in Parkinson's disease: a possible sex-effect. Findings from the PACOS study

*Antonina Luca*¹, R. Monastero², C.E. Cicero¹, R. Baschi², G. Mostile¹, G. Donzuso¹, M. Davi², L. Di Giorgi², M. Caccamo², M. Zappia¹, A. Nicoletti¹

¹Department of Surgical and Medical Sciences Advanced Technologies "G.F. Ingrassia", University of Catania, Catania, Italy

²Department of Experimental Biomedicine and Clinical Neuroscience (BioNeC), University of Palermo, Palermo, Italy

Background: The association between dyslipidemia and cognitive performance in Parkinson's disease (PD) patients has not been properly investigated.

Aims: Aims of the present study were: 1) to evaluate the presence of possible associations between mild cognitive impairment (PD-MCI) and lipids levels; 2) to evaluate possible correlations between scores obtained at tests assessing executive functioning and serum lipids; 3) to explore sex-specific contribute of these lipid fractions on cognition.

Methods: Patients from the PACOS cohort, who underwent a complete serum lipid profile measures (total cholesterol-TC, low-density lipoprotein cholesterol-LDL, high-density lipoprotein cholesterol-HDL and triglycerides-TG) were selected. PD-MCI was diagnosed according to MDS-level II criteria. Executive functioning was assessed with the Frontal Assessment Battery (FAB) and the Raven's Colored Progressive Matrices (RCPM).

Results: Three hundred forty-eight PD patients (148 women; age 66.5±9.5 years; disease duration 3.9±4.9 years) were enrolled. Women presented significantly higher TC, LDL and HLD than men. In the whole sample, any association between lipid profile measures, MCI, FAB and RCPM was found. Among woman, at univariate analysis, a positive association between pathological TG and pathological FAB score was found (OR 3.4; 95%CI 1.29-9.03; p-value 0.013). In women, a statistically significant negative correlation was found between FAB score and triglyceride serum levels ($r = -0.226$; p-value:0.005). Differently, among men, a statistically significant negative association between pathological TC and pathological FAB score (OR 0.4;95%CI 0.17-0.84; p-value 0.018) and between pathological LDL and pathological FAB score (OR 0.4;95%CI 0.18-0.90; p-value 0.027) were found.

Conclusions: Our data suggest a sex-specific different role of lipids in executive functioning.

References

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