

COGNITIVE DYSFUNCTION IN RELAPSING REMITTING AND SECONDARY PROGRESSIVE MULTIPLE SCLEROSIS AND RELATIONSHIP WITH MRI MARKERS

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Background: Relationship between type of multiple sclerosis (MS), cognitive dysfunction (CD) and it dependant on MRI parameters, number of brain lesions and atrophy, are described.

The aim: To compare relapsing-remitting (RR) MS to secondary-progressive (SP) MS with respect to CD and investigate relationship with MRI markers and type of MS.

Methods: The study in Vilnius University hospital "Santariskiu klinikos" involved MS patients: 43 RR (mean age $33,65 \pm 9,24$) and 45 SP ($47,82 \pm 7,72$). Cognitive tests battery was applied, linear MRI parameters and MRI T2 lesions were calculated.

Results: Comparison RRMS and SPMS has shown differences with respect to all applied cognitive tests ($p < 0,05$), except DSF test. Comparison with respect to linear MRT markers did not differ only in bifrontal index ($1,86 \pm 0,23$ (RR) VS $1,86 \pm 0,22$ (SP); $p = 0,978$).

CD the best predictive ability was demonstrated by RAVLT4 (area under receiver operator curve = 0,884; $p < 0,001$) and DSST (area under receiver operator curve = 0,873; $p < 0,001$) and MRT bicaudalus index (area under receiver operator curve = 0,864; $p < 0,001$).

CD tests correlated with MRT markers (max between DSST and bicaudalus index: $r = -0,570$ ($p < 0,001$)), number of lesions (max with TMTA: $r = 0,339$ ($p < 0,001$)).

Conclusions: CD in MS is related to linear MRT markers, number of lesions and type of MS, however in SPMS the alterations are expressed more. Slowing in verbal learning and speed of psychomotor reactions are the mostly affected domains; RAVLT4 and DSST are most prominent when distinguishing RRMS and SPMS.