(P06) CEREBELLAR DYSFUNCTION IS ASSOCIATED WITH NEUROCOGNITIVE IMPAIRMENT IN MULTIPLE SCLEROSIS PATIENTS

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Objective: To examine the utility of the Functional System Scores (FSS) of the Expanded Disability Status Scale (EDSS) in predicting neurocognitive functioning in multiple sclerosis (MS).

Background: Cognitive impairment occurs in over half of MS patients. Previous research has linked global EDSS ratings to cognition in MS; however, little is known about the utility of specific EDSS FSS for predicting cognitive status.

Design/Methods: Patients (N = 63) enrolled in a multicenter longitudinal monitoring program were given the Automated Neuropsychological Assessment Metrics (ANAM), a computerized neuropsychological battery. Participants were rated on the EDSS, which is derived in part from FSS. Participants were 69% male; 58% African-American and 42% Caucasian; aged 47.21 years on average (SD = 8.58 years); and 68.3% had relapsing-remitting, 9% had primary progressive, and 20.9% had secondary progressive MS. Correlations and linear regressions were conducted examining the relationship between age, race, education, and EDSS FSS (Cerebral and Cerebellar) with ANAM tests (Simple Reaction Time [SRT], Procedural Reaction Time [PRT], Code Substitution [CODSUB], and Code Substitution-Delay [CODSUB-D]).

Results: There was a significant relationship between EDSS-Cerebellar and SRT, PRT, CODSUB, and CODSUB-D and a significant relationship between EDSS-Cerebral and SRT, CODSUB, and CODSUB-D. Linear regression analysis performed controlling for age, education, and race showed that greater impairment on EDSS-Cerebellar predicted poorer performance on CODSUB (P = .049). Other FSS scores examined in this model did not predict neurocognitive functioning.

Conclusions/Relevance: Scores on EDSS FSS that assess mental and cerebellar functions were associated with neurocognitive performance. The specific association between cerebellar function and measures of scanning and processing speed (paired associate learning of symbol-number pairs) is consistent with the previously identified role of the cerebellum in learning and memory. However, the contribution of visual-motor deficits should also be examined in future studies. The implications of these findings for the management of MS patients with neurocognitive impairment require further study.

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