Utility of the Symbol Digits Modalities Test Compared with the Mini-Mental State Examination and a Standardized Cognitive Screen

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Background: It is estimated that 50% to 70% of multiple sclerosis (MS) patients experience cognitive dysfunction. The presence of symptoms is often difficult to detect clinically without the use of objective testing. The Mini-Mental State Examination (MMSE) is often used in the clinical setting as such a screening measure, although it is well known that it does not evaluate the most common cognitive concerns in the MS patient population. The oral version of the Symbol Digits Modalities Test (SDMT) has been demonstrated to be highly sensitive to MS-specific cognitive dysfunction and therefore reliable in the detection of MS-related cognitive deficits. The SDMT can be administered and scored by a trained technician in approximately 5 minutes.

Objectives: This study assessed the effectiveness of a quick, reliable, and replicable screening battery in the detection of cognitive dysfunction in MS patients.

Methods: Twenty-nine individuals with a diagnosis of MS from the Neurology Center of Fairfax (21 female, 8 male; mean age, 43.03 years) were administered a standardized Cognitive Screening Battery evaluating simple attention, verbal learning, recall, recognition, information processing speed, executive function, mental status, and mood. To make the battery more sensitive to MS, we added the oral version of the SDMT (mean battery completion time, 29 min).

Results: Sixty-six percent of patients performed in the “impaired” range on one or more measures of the cognitive screen, and 41% of patients performed in the “impaired” range on the SDMT. Only 7% of patients performed in the “impaired” range on the MMSE.

Conclusions: The results of this pilot study reveal that the Cognitive Screening Battery detected cognitive dysfunction in 66% of MS patients, the SDMT detected cognitive dysfunction in 41% of MS patients, and the MMSE detected cognitive dysfunction in 7% of MS patients. The SDMT as a screen for MS-related cognitive impairment is more sensitive to MS-specific cognitive deficit than administering the MMSE alone. Given the length of time needed to complete the cognitive screen, many clinicians in the medical setting will still find the MMSE more efficient. It is recommended that in these settings, clinicians add the SDMT to the MMSE when evaluating MS patients in order to maximize the information obtained from the screening tools.

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