

Factors affecting cognitive impairment in Japanese patients with multiple sclerosis

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Objective: Quality of life (QOL) could be affected by cultural and educational backgrounds, and might differ among ethnicities and countries. This study aimed to evaluate the associations of cognitive impairments with QOL, fatigue, or depression in Japanese patients with multiple sclerosis (MS).

Methods: The Brief International Cognitive Assessment for MS (BICAMS), which is composed of 3 batteries, namely the Symbol Digit Modalities Test (SDMT) for cognitive processing speed, the second edition of the California Verbal Learning Test (CVLT2) for auditory/verbal learning and memory, and the revised Brief Visuospatial Memory Test (BVMTR), was performed in 184 Japanese patients with MS. Health-related QOL, fatigue, and depression were evaluated using the Functional Assessment of MS (FAMS), Beck Depression Inventory Second Edition (BDI-II), and Fatigue Severity Scale (FSS), respectively.

Result: The patients' raw scores (mean \pm standard deviation) were as follows: SDMT, 53.0 ± 15.5 ; CVLT2, 49.8 ± 13.3 ; BVMTR, 25.6 ± 7.7 in BICAMS; Mobility, 18.4 ± 7.1 ; Symptoms, 20.2 ± 5.8 ; Emotional well-being, 19.6 ± 6.7 ; General contentment, 16.0 ± 5.9 ; Thinking/fatigue, 21.0 ± 8.8 ; Family/social well-being, 17.5 ± 5.9 ; Total FAMS score, 112.8 ± 31.1 ; Additional concerns, 38.4 ± 7.9 in FAMS; BDI-II, 15.4 ± 10.6 ; and FSS, 37.6 ± 13.5 . Regression analysis of BICAMS on FAMS revealed that the SDMT score in the BICAMS positively correlated with Mobility, Symptoms, Emotional well-being, total scores, or Additional concerns of FAMS even after controlling for EDSS, age at examination, and years of education. The SDMT and CVLT2 scores negatively correlated with BDI-II in the regression analysis, but no correlation was found between the BVMTR and BDI-II scores. Similarly, no correlations were found between the BICAMS and FSS subscale scores.

Conclusion: Cognitive function, especially information-processing speed evaluated with the SDMT, could be closely related with QOL and depression in Japanese patients with MS.