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Association Between Fatigue and Cognition of Multiple Sclerosis in Hong Kong

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Introduction

Multiple Sclerosis (MS) is one of the common neurological diseases characterized by chronic inflammatory demyelination in central nervous system. Cognitive impairment and fatigue are frequently reported in patients with demyelinating diseases.

Objectives

This cross-sectional study aims to examine the cognitive profile, the correlation of fatigue level and cognitive function and explore the predictors on the global cognition of patients with MS in Hong Kong.

Methodology

30 participants diagnosed with demyelinating diseases were recruited. A collection of comprehensive cognitive indices were adopted to assess different cognitive domains. Modified Fatigue Impact Scale (MFIS) and Kurtzke Expanded Disability Status Scale (EDSS) were used to evaluate the level of fatigue and physical disability respectively. To compare the cognitive ability between patients with high and low level of fatigue, the results of cognitive assessments were compared by independent t-test. Pearson correlation coefficient was used to evaluate the linear correlation between MFIS and The Hong Kong Version of Montreal Cognitive Assessment (HK-MoCA), and all cognitive measures respectively. Moreover, to explore the predictors of cognition, the predicting value of age, education in years, MFIS and EDSS towards HK-MoCA was calculated by stepwise approach linear regression analysis.

Result

Results indicated that 20% of the participants impaired in HK-MoCA. No statistical significant difference was found in cognitive tests between fatigue and non-fatigue MS. Only Trail making test (TMT) part B was moderately correlated with MFIS ($r=-0.406$, $p<0.05$). Linear regression analysis revealed that EDSS was a significant predictor to HK-MoCA score ($\beta=-1.192$, $p<0.01$). In summary, the study outlined the cognitive profile of MS cohort in Hong Kong and drew the conclusions that fatigue is correlated with the mental processing speed but not the global cognition; and neurological

disability is a moderate predictor to the cognitive performance in MS patients.