Montreal Cognitive Assessment is superior to Standardized Mini-Mental Status Exam in detecting mild cognitive impairment in heart failure

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Introduction: The incidence and prevalence of mild cognitive impairment (MCI) in patients with heart failure (HF) preserved or reduced ejection fraction is largely unknown. This study compares the utility of Montreal Cognitive Assessment (MoCA) to the Mini-Mental Status Exam (MMSE) for diagnosing MCI in a HF population.

Methods: Participants were recruited from the Alberta HEART study at the Mazankowski Alberta Heart Institute in Edmonton and St. Mary's hospital in Camrose. This study enrolled 54 community dwelling adults; 34 with HF and 20 controls aged >50 years. Participants were assessed using both the MMSE and MoCA for MCI. In all participants, depression and dementia were ruled out using the DSM IV criteria. MCI was diagnosed using the European Consortium Criteria. Sensitivity and specificity analysis, positive and negative predictive values, likelihood ratios and Kappa statistic were calculated.

Result: The mean age was 72.8 (SD 8.4), 60.4% were females and 34% had underlying ischemic heart disease. Overall, two thirds of patients (22/33, 66%) with HF had MCI. In comparison to Consortium Criteria, the sensitivity and specificity of MoCA were 82% and 91% in identifying individuals with MCI, and MMSE were 9% and 91%, respectively. The positive and negative predictive values for MoCA were 95% and 71%, and for MMSE were 67% and 33%, respectively. Kappa statistics showed good agreement between MoCA and consortium criteria (kappa = 0.68) and a low agreement between MMSE and consortium criteria (kappa = 0.07).

Conclusion: Cognitive dysfunction is common in patients with HF. Overall, the MoCA is a better screening tool than MMSE for MCI in patients with heart failure.