

Cognitive functioning after acute cardiac events: the role of mental fatigue

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Introduction: Fatigue is common concomitant of coronary artery disease (CAD) and predicts a poor clinical outcome. Although the mechanism for this is not known, it is hypothesized that fatigue may reflect adverse changes in cognitive function that are crucial for recovery. However, the relationship between mental fatigue and cognitive function of CAD patients remains to be identified [1].

Aim: To test the association between executive aspects of cognition and mental fatigue in a large cohort of individuals undergoing CAD rehabilitation after acute coronary events.

Method: A 5 year study included 722 CAD patients two weeks after acute myocardial infarction or unstable angina; 529 (73%) men and 193 (27%) women; mean age of 58 years (SD=9). Patients were evaluated for socio-demographic characteristics, left ventricular ejection fraction (LVEF), New York Heart Association (NYHA) functional class. The Multidimensional Fatigue Inventory (MFI-20) was used to assess mental fatigue and reduced motivation. Digit Span Test, Digit Symbol Test, Trail Making Test A and B were used to assess cognitive functioning. Participants were considered cognitively impaired or markedly fatigued if they fell below the 25 th percentile of the study population in the specific cognitive function and fatigue tests. Multiple logistic regression models were used to evaluate relationship between mental fatigue and impairment in each of the cognitive tests. Bonferroni correction was performed for multiple testing in univariate models ($p < .006$)

Results: Controlling for multiple comparisons and potential confounders such as age, gender, education, NYHA class, LVEF and reduced motivation CAD patients with marked mental fatigue respectively had 1.92 (95% CI, 1.30 to 2.84) higher odds for impairment in incidental learning as measured by Digit Symbol Test compared to patients with less severe mental fatigue.

Conclusions: In CAD patients two weeks after acute cardiac events mental fatigue is associated with selective impairment in incidental learning. Such failure could be expected to impair new information processing, which is crucial for patients to benefit from rehabilitation. Different CAD management strategies may therefore be needed for patients experiencing mental fatigue. Furthermore, incidental learning has also been shown to be sensitive to detecting early dementia [2]. Thus, in algorithm-based care, attention should be paid to evaluating long-term cognitive function in patients suffering mental fatigue.

References:

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