Post stroke executive functions and verbal fluency negatively correlated with serum level of IL8.

Abstract

Background: Patients with acute ischemic stroke are at a higher risk of developing cognitive impairment which could be often attributed to cytokine activation.

Objectives: To explore the relationship between the cognitive performance and the inflammatory markers in the ischemic stroke patients at the early stage.

Patients and methods: A cross-sectional case-control study was performed on 44 ischemic stroke patients. The patients underwent the following battery of evaluation: (A) assessment of stroke disability by modified Rankin Scale (mRS) and National Institute of Health Stroke Scale (NIHSS). (B) neuropsychological evaluation using Mini-Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA) scale, trail making test (TMT), and Controlled Oral Word Association Test (COWAT). (C) Assessment of depression was done by using Beck Depression Inventory (BDI). Measurement of the serum levels of ESR, C-reactive protein, and IL-8 was done. This study included 44 ages, sex, and educational level matched controls for comparison of neuropsychological tests and serum level of IL-8.

Results: The patients showed worse performance in neuropsychological tests (MMSE, MoCA, COWAT, TMT) than the controls. There was a significant negative correlation between the serum level of IL-8 and (MoCA) ($r = -0.43$, $p = 0.004$), verbal fluency ($r = -0.56$, $p < 0.001$), and positive significant correlation between IL8 and executive functions ($r = 0.61$, $p < 0.001$).

Conclusion: The cognitive impairment in early acute ischemic stroke is highly correlated to the serum level of IL-8.

Keywords: Post stroke, Executive function, Verbal fluency, IL8