

Serum vascular endothelial growth factor as a predictor of clinical outcomes in anterior circulation ischemic stroke

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Abstrak

Inflammatory response in the acute phase of ischemic stroke will trigger the process of neuroplasticity and determine the clinical outcomes. Angiogenesis and neurogenesis are induced by expression of vascular endothelial growth factor (VEGF) in the acute phase of stroke. The purpose of this study was to determine the association between VEGF serum level in acute of stroke with the clinical outcomes. This longitudinal cohort study was conducted on 64 patients suffering from first-attack of anterior circulation blockage as evidenced by cephalic diffusion-weighted magnetic resonance imaging (DWI). VEGF serum level was measured at 72 hours and 7 days after stroke and the clinical outcomes were assessed on day 30 post-stroke using the National Institutes of Health Stroke Scale (NIHSS). VEGF level at hour-72 and on day-7 were 5.84 ± 0.736 ng/mL and 5.797 ± 0.96 ng/mL, respectively ($p > 0.05$). High VEGF levels at hour-72 can be used to predict poor clinical outcome 30 days after stroke (OR=6.5; 95% CI = 1.15-36.61 ; $p = 0.034$). Subjects who have increasing levels of VEGF on day-7 compared to hour-72 tend to have better clinical outcomes on day-30 (NIHSS score = 1.33 ± 1.22 vs 3 ± 3.78 ; $p = 0.232$). VEGF levels in the acute phase of ischemic stroke reflect the degree of brain damage, the dynamic of the increase in VEGF levels after a stroke was associated with better clinical outcomes.