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Tissue Plasminogen Activator Mass Concentration in Ischemic Acute Stroke Patients


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Abstract: The role of endogenous fibrinolysis in cerebral infarction has been investigated, but with conflicting results. In this study, variations of tissue-type plasminogen activator (t-PA) antigen concentrations over time after stroke were examined at the acute and subacute phases of ischemic stroke in a group of patients and in a control group. The relationships between t-PA levels and stroke severity, lesion volume and clinical status were also investigated. This study was carried out in 45 patients with acute ischemic stroke and 21 control subjects who had similar characteristics. Levels of t-PA mass concentration were measured via the ELISA, while Student's t, Chi-square and Pearson correlation methods were used. Age ratio (57.42 ± 15.36 , 53.19 ± 10.45 , $P = 0.2$) and sex distribution (F/M: 24/21, 9/12, $P = 0.42$) of the patients and the control group were the same. The average t-PA values of the patients were considerably higher than those of the control group during acute and subacute periods [$(17.9 \pm 8.1$ ng/ml, 26.3 ± 17.9 ng/ml) vs. $(9.9 \pm 3.8$ ng/ml), ($P < 0.001$)]. No significant relation was found between t-PA either with infarct size nor with clinical neurologic status. These results suggest that increased t-PA levels exist in ischemic stroke and the endogenous fibrinolytic system is activated during acute and subacute periods of ischemic stroke.

Key Words: ischemic stroke, risk factors, tissue plasminogen activator, t-PA

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