

Role of Brain Biomarker in Predicting Clinical Outcome in Hypertensive Cerebrovascular Ischemic Stroke

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Abstract

This study was undertaken to evaluate the role of serum neuron specific enolase (NSE) in prediction of disability and neurological worsening in hypertensive ischemic cerebrovascular stroke. 80 hypertensive ischemic stroke patients diagnosed by a neurologist as per WHO definition along with radiological findings suggestive of cerebrovascular stroke and differentiating from hemorrhagic stroke and 60 controls having essential hypertension coming to hospital because of regular checkup or headache but with no neurological disease were included in the study. Neurological disability was assessed by NIHSS at the time of admission (within 72 h from the onset of stroke) and on 7th day after admission and cases were categorized into mild, moderate and severe disability. Venous blood samples were drawn within 72 h from the onset of symptoms. The samples were processed as per the laboratory protocol. The serum NSE samples were analyzed using an enzyme immunoassay based on the sandwich technique. We observed raised serum NSE in hypertensive ischemic stroke (17.4 ± 5.4 ng/ml) with significant association between different hypertensive groups than in hypertensive controls (9.1 ± 0.75 ng/ml). Greater degree of disability was observed in hypertensive stroke patients with raised serum NSE and hypertensive patients with mean serum NSE level of 22.9 ± 3.6 ng/ml and dyslipidemia had greater probability of neurological worsening as compared to those with mean serum NSE level of 12.7 ± 1.2 ng/ml. Serum NSE levels can serve as a peripheral indicator of neuronal damage and assist in the prediction of disability and clinical outcome in hypertensive cerebrovascular ischemic stroke patients. © 2017 Association of Clinical Biochemists of India.

Author keywords

International Society of Hypertension (ISH), National Institute of Health Stroke Scale (NIHSS), Neuron specific enolase (NSE), World Health Organization (WHO)

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