Paradoxical role of hepatocyte growth factor in ischemic stroke: stroke risk/stroke recovery

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ABSTRACT

Background

Hepatocyte growth factor (HGF) has an obvious pathological role in atherosclerosis and plaque instability leading to an acute ischemic stroke; however, its beneficial role in stroke recovery is still restricted to experimental studies. The aim of the current study was to investigate the association between HGF and carotid atherosclerosis and evaluate its value as a prognostic marker of ischemic stroke and its role in stroke recovery.

Results

This case–control study was done on 100 patients with first time anterior circulation ischemic stroke, subjected to clinical and laboratory evaluation of atherosclerosis risk factors. Brain imaging, cardiac work-up and ultrasonographic assessment of carotid atherosclerosis (using intimal medial thickness and plaque score) were all done. Clinical evaluation of initial stroke severity, using National Institutes of Health Stroke Scale (NIHSS), and stroke outcome after 3 m, using Modified Rankin Scale (MRS), was performed. Measurement of HGF serum concentration was done to all stroke patients within 24 h of stroke onset and compared to results of 100 matched healthy subjects aged more than 50 years. HGF was significantly higher in stroke patients than healthy controls and in atherothrombotic than cardioembolic stroke group and its level was significantly correlated with atherosclerosis risk factors, degree of carotid atherosclerosis and better stroke outcome; however, it was not significantly correlated with initial stroke severity.

Conclusion

HGF is strongly associated with carotid atherosclerosis and other atherosclerosis risk factors and subsequent atherothrombotic stroke. Also, it can be used as a good prognostic marker in atherothrombotic stroke suggesting its role in stroke recovery but more studies are needed to explore this beneficial role as well as its therapeutic potentials in ischemic stroke patients.

BIOGRAPHY

Hosna Elshony is a Neurology Professor in Menoufiya University, Faculty of Medicine, Egypt and Neurology Consultant in Security Forces Hospital Makkah, Saudi Arabia. She has many researches in different subspecialties of neurology. She is a dedicative physician and Professor

Last Publications:

1. Ischemia-modified albumin for evaluating severity and predicting prognosis in patients with acute cerebrovascular disease. Menoufia Medical Journal, 2020, 1072-1076.
2. Omalizumab Induced Acute Motor Conduction Block Neuropathy: Case report and literature review, European journal of Neurology volume 27, suppl. 1, 2020, E-poster.
3. Intracerebral Hemorrhage (ICH) in patients with Neuromyelitis Optica (NMO): Case Report with Literature Review for Possible Pathological Association. Karger case report in Neurology, accepted for publication in December, 2020.

4. Paradoxical Role of Hepatocyte Growth Factor in ischemic stroke: Stroke risk/ Stroke Recovery": accepted for publication in The Egyptian Journal of Neurology, Psychiatry and Neurosurgery, August 2021.
5. Determinants of quality of life changes with plasmapheresis in patients with myasthenia gravis: published in The Egyptian Journal of Neurology, Psychiatry and Neurosurgery, MAY 2021.
6. Spinal Cord Ischemia Secondary to Aortic Dissection: Case Report with Literature Review for different clinical presentations, risk factors, radiological findings, therapeutic modalities and outcome": accepted for publication in Karger case report of neurology, June 2021.
7. (Subacute Herpes Simplex type 1 Encephalitis: Two Case Reports with Literature Review: accepted for publication in The neurologist, March 2021.

- Mobile Number*: 00966593185089

- Category*: (Oral presentation/ Poster presentation)
- Research Interest*: Stroke, Demyelination, Epilepsy, Dementia

