Clinical and laboratory biomarkers to predict haemorrhagic transformation of ischemic stroke: first data of a prospective study

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Abstract

Background: Haemorrhagic transformation of ischemic stroke represents the bleeding in the infarcted areas of the brain after the cerebrovascular accident. The aim of the study was to analyse the clinical parameters and the blood-brain barrier integrity biomarkers as prognostic factors for haemorrhagic transformation of ischemic stroke.
Material and methods: 80 patients with acute ischemic stroke, admitted within 24h from onset to the Institute of Neurology and Neurosurgery (Chisinau) in the period from 2018 to 2019 were prospectively analysed. The admission stroke severity, clinical risk factors, laboratory parameters were registered and venous blood for matrix metalloproteinases 2 and 9 measurement was collected. All patients were investigated by brain computer tomography at admission and on day 3, and/or at clinical deterioration for haemorrhagic transformation detection. Discharge status and 3-months follow-up was done to assess the functionality of the patients by the modified Rankin scale value.
Results: Haemorrhagic transformation occurred in 11 out of 80 analysed patients, with a higher proportion of women (72.7% vs 52.1%), older age (72.27±3.08y vs 70.66±1.25), and higher admission NIHSS score (15.54 vs 11.23). Both metalloproteinases were slightly increased in the patients with haemorrhagic transformation. Discharge functionality status was lower in the study vs control group (5 vs 3.68) with similar evolution at 3-months follow-up (4.8 vs 3.12).
Conclusions: Preliminary data analysis shows correlation between clinical and laboratory biomarkers and the risk of haemorrhagic transformation of ischemic stroke. More patients are required to be enrolled and studied for the statistically significant results.
Key words: ischemic stroke, haemorrhagic transformation, stroke biomarkers.

Guillaine-Barre syndrome COVID-19 associated

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Abstract

Background: Guillain-Barré syndrome (GBS) affects about 100 000 people every year worldwide with the incidence rates of 0.8–1.9 cases per 100000 people annually. A number of case series have reported GBS in association with COVID-19 infection.
The aim of our study was to analyse all cases of GBS COVID-19 associated, admitted in a tertiary level neurological hospital.
Material and methods: 3 cases with GBS associated with SARS-COV-2 infection were selected. The diagnosis was proved by electromyography (EMG) exam and lumbar puncture.
Results: Out of 3, there was 1 female and 2 males with GBS. The registered age was 46, 62 and 67 y.o. Patients developed the disease in 10, 15, and 30 days after the COVID-19 infection. The interval from onset to nadir was 6-9 days. Patients received 5, 10 and 11 points on mEGOS (Modified Erasmus GBS Outcome Score) at day 7 of admission. All patients developed flaccid tetraparesis and "socks" and gloves" sensation loss. Cranial nerves involvement was registered in 2 cases and 2 patients had autonomic disfunction. On EMG, 1 patient was confirmed with axonal polyneuropathy and another 2 with demyelinating polyneuropathy. One patient needed mechanical ventilation. All patients received plasma exchange and 1 benefitted from intravenous immunoglobulins. 1 patient died and other 2 received 4 and 5 points mRS at discharge.
Conclusions: GBS COVID-19 associated does not substantially differ from that triggered by other environmental factors.
Key words: Guillain-Barre Syndrome, SARS-COV-2, demyelinating disease.