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The role of lipid imbalance and deregulated angiogenesis in the pathogenesis of Moyamoya angiopathy

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Background and aims: Moyamoya angiopathy (MA) is a rare cerebrovascular disorder characterized by ischemic/hemorrhagic strokes. The pathophysiology is unknown. A deregulation of vasculogenic/angiogenic pathways has been hypothesized as a possible pathophysiological mechanism. Since lipids are involved in modulating neo-vascularization/angiogenesis their deregulation is associated with cerebrovascular diseases. Our aim is to evaluate lipid and angiogenic/vasculogenic factor profile in plasma and Cerebral Spinal Fluid (CSF) of MA patients.

Methods: A subgroup of MA patients from GEN-O-MA project was included, with healthy donors (HD) and unrelated controls (UNR). Clinical data and plasma/CSF were collected. Angiogenic and inflammatory factor levels were measured by ELISA and a complete qTOF-MS-untargeted lipidomic analysis was performed on plasma/CSF.

Results: 39 MA adult, Caucasian patients, 32 HD and 48 UNR subjects were included. ELISA did not show differences for any of the tested factors in plasma of MA, HD and UNR. We observed a significant increase of VEGF-A and ANG-2 release in CSF from MA compared to UNR subjects. The lipidomic analysis showed an imbalance of specific lipid class levels in plasma and CSF of MA as compared to HD and UNR subjects.

Conclusion: Our findings suggest that both angiogenic and lipid pathways could play a central role in MA pathogenesis. The validation of results on a larger population and the correlation with clinical data could help our understanding of their role in MA, leading to the discovery of reliable biomarkers and the identification of therapeutic targets.

Disclosure: Nothing to disclose.

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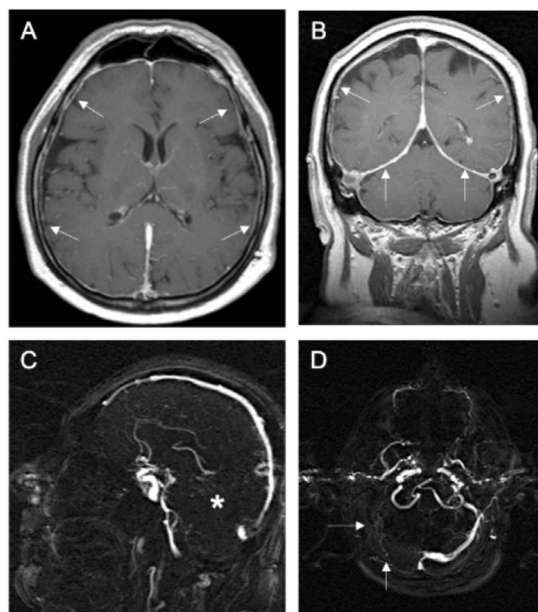
Cerebral venous thrombosis in spontaneous intracranial hypotension: a report of eight cases and review of the literature

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Background and aims: The occurrence of cerebral venous thrombosis (CVT) in patients with spontaneous intracranial hypotension (SIH) raises difficult practical questions regarding the management of the two conditions. The first-line therapy for CVT is anticoagulation (AC); however, its potential benefit in SIH/CVT patients, especially if complicated by subdural haematoma, must be carefully evaluated taking account of the intracranial haemorrhage risk. Venous system recanalization and good prognosis in SIH/CVT patients treated with epidural blood patch (EBP), the main treatment option for SIH, have been already described.

Methods: We reviewed our cases of SIH complicated by CVT among a cohort of 445 SIH patients observed and treated during the last years. All published case series reporting patients with SIH and CVT were also ascertained and reviewed.

Results: Eight (2%) out of 445 patients suffering with SIH, were also diagnosed with CVT. All patients observed had orthostatic headache, six out of eight patients received both AC and EBP treatments. Two patients were treated using only AC or EBP. A bilateral subdural haematoma enlargement after one month of AC was observed in one case. Complete CVT recanalization after treatment was obtained in three patients, including two with multiple CVT at baseline; partial CVT recanalization was achieved in two patients. Three patients experienced no CVT recanalization.



Brain magnetic resonance imaging (MRI) and magnetic resonance venography (MRV) before epidural blood patch (EBP) treatment in patient #1.