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Role of transcranial doppler in assessment of stroke outcome

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TCD is a noninvasive, painless, bedside method for real time assessment of intracranial circulation. Can TCD values measured at stroke onset be predictive of stroke outcome at patient discharge? Aim of study was to assess TCD values obtained at stroke onset in prediction of stroke outcome measured by Barthel Index (BI) and Rankin scale (RS). We examined 101 stroke patient during a 6 month period. All patients were examined using TCD technique. Mean blood flow velocities (MBFV) were measured in carotid siphon, medial cerebral artery, anterior cerebral artery, posterior cerebral artery of both right and left hemisphere, right vertebral artery, left vertebral artery and basilar artery. Barthel Index was assessed after stroke onset and before patient demission. Rankin scale was assessed before patient demission. There were 101 stroke patients, 53 men and 48 women. Seventy-three patients had ischemic stroke, 13 patients had haemorrhagic stroke, 4 had subarachnoid haemorrhage and 11 had transitory ischemic attacks. Mean age was 72 years. Thirty-six patients had a complete TCD report, 40 patients had values reported from one side of Willis' circle, and 54 patients had all values of vertebrobasilar system. For remaining patients all values were not obtained due to technical difficulties. Eighty-five percent of patients had a first ever stroke, and 15% had a recurrent stroke. At admission average BI was 92.83. Before discharge average BI was 64.3. RS before demission showed the following: no symptoms 7%, independent 28%, light disability 9%, moderate disability 9%, moderate to severe disability 23%, severe disability 18%, death 5%. Sixty percent of patients were discharged home, 10% to another institution, 20% went to a rehabilitation center, and 11% were transferred to another ward. Even though TCD is an extremely valuable method in assessment of cerebral blood flow we were not able to predict patient stroke outcome by assessment of TCD values at stroke onset.

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Occlusions of the vertebral arteries: our experience

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Occlusive vertebral disease is an important cause of stroke. Over a period of 4 years we have observed 52 patients with vertebral artery occlusion. We highlightly the different segment of the occlusion between right and left vertebral arteries. Color-coded duplex ultrasonography of the epiaortic vessels was performed in 1482 patient admitted in the geriatric and neurology division of the Madonna delle Grazie Hospital of Matera (Italy). 52 exams (3,5%) showed vertebral occlusive disease. 24 patients (46%) had occlusion of the origin (V0-proximal V1 segment) of the right vertebral artery. 14 (26,9%) patients had occlusion of the origin (V0-proximal V1 segment) of the left vertebral artery. 1 (1,9%) patient had occlusion of the origin of the right artery and of the intracranial segment of the left vertebral artery. 6 patients (11,5%) had occlusion of the intracranial segment of the right vertebral artery. 7 patients (13,4%) had occlusion of the intracranial segment of the left vertebral artery. In our opinion in the extracranial segment of the right vertebral artery the occlusion is more frequent because there is often the dominance of the left vertebral. Therefore we think that the dominance of the left vertebral artery may explain the different prevalence of the occlusive disease in the extracranial segment of the vertebral arteries. Furthermore other studies showed that the caliber of the arteries is an important risk factor for occlusive disease. In the intracranial segment there is no important difference between caliber of the vertebral artery, so the prevalence of the occlusive disease is the same by both side.

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Comparison of Transcranial Doppler Ultrasound (TCD) and carotid duplex ultrasonography (CDUS) for detecting Hemodynamically Significant Internal Carotid Artery (ICA) Stenosis

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Background and purpose: TCD is often used in conjunction with CDUS to evaluate the hemodynamically significant ICA stenosis. The aim of this investigation is to compare the respective efficacy of TCD and CDUS for the assessment of