

English: Duplex ultrasonography as prognostic tool of acute ischemic stroke patients.

Abstract

Background:

Cerebral stroke is a major source of mortality and morbidity. Duplex ultrasonography is used to evaluate carotid and cerebral arteries. The objectives of this work are to study the correlation between carotid duplex parameters with risk factors of ischemic stroke and evaluate duplex parameter as prognostic tool of ischemic stroke.

Methods:

The study was conducted on 100 patients presented by acute ischemic stroke submitted to history taking, medical, and neurological examination. Neurological deficit was assessed by National Institute of Health Stroke Scale (NIHSS); the functional state of the patients was assessed by modified Rankin scale (mRS). Brain CT and/ or MRI, routine laboratory investigations, extracranial, and transcranial duplex (TCD) were done.

Results:

The end diastolic velocities (EDVs) and peak systolic velocities (PSVs) of common carotid arteries (CCA) were significantly decreased in smokers and hypertensive ($P < 0.05$). Smoking and hypertension were positively correlated with resistive index (RI). In 80 patients, PSV in the symptomatic middle cerebral artery (MCA) did not exceed 70 cm/s within averaged 50.7 ± 4.6 cm/s. EDV was 12.0 ± 3.0 cm/s, RI was 0.78 ± 0.05 , and pulsativity index (PI) was 1.61 ± 0.09 . There was significant difference in all hemodynamic parameters in comparison with the asymptomatic side.

Conclusion:

Patients who have risk factors of stroke should be evaluated with duplex ultrasonography. Duplex parameters can give informative data about prognosis and outcome.

Keywords: Ischemic stroke, TCD, Carotid duplex

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