

Transcranial Doppler ultrasonography

Transcranial Doppler ultrasonography is **used to monitor blood flow velocity in the basal arteries** (most data relate to flows in the *arteria cerebri media*) **and carotids**. ***It is used to diagnose vasospasms and regional perfusion disorders, which can accompany brain trauma or subarachnoid hemorrhage.*** *Vasospasm corresponds to the acceleration of blood flow in the monitored artery.*

It is also important to compare the flow velocity in the "a. cerebri media" and the extracranial section of the "a. carotis interna". This method is '*sensitive in demonstrating a reduction in central cerebral circulation* (stenosis, intracranial hypertension), it has the highest sensitivity for flow in the *a. cerebri media*.

It is not tied to the presence of a large fontanelle, it can also be performed in larger children and adults through a "thinner" part of the skull, usually temporal bone.

TCD is also used within specific tests, e.g. TCD response to changes in pCO₂ concentration, dynamic test of autoregulation, transient hyperemic response test (after short compression of the carotid artery), continuous TCD analysis with respiratory wave recording, etc. This is a method of increasing importance.

Links

Related Articles

- Doppler ultrasonography in medicine • Doppler ultrasonography
- Doppler imaging • Doppler phenomenon
- Doppler echocardiography • Fetal Doppler • Doppler flowmeter

Source

- HAVRÁNEK, Jiří: *Other monitoring*.