Peculiarities of blood flow in the medial cerebral artery of the fetus in perinatal infections

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Purpose
To study the characteristics of blood flow in the medial cerebral artery of the fetus in pregnant with perinatal infections.

Methods
A Doppler study of blood flow in the medial cerebral artery in 41 pregnant women with perinatal infections of various etiologies and clinical manifestations of the disease in newborns in the early neonatal period was carried out. The diagnosis of perinatal infections (PI) was established by the presence of elevated titers of anti-infective M antibodies and low-avid IgG in biological material, as well as according to ultrasound examination of fetoplacental complex.

Pregnant patients were divided into 3 groups: Group I (n=14) with viral PI, Group II (n=12) with bacterial PI, Group III (n=15) with combined PI.

The control group (n=25) consisted of pregnant women with a physiological course of pregnancy.

Results
In the control group peak systolic velocity in the medial cerebral artery in multiple of median was 1.26 ± 0.24. Indices of peak systolic velocity in the medial cerebral artery higher than 1.5 multiple of median were associated with an abnormal blood flow.

Figure 1. Peak systolic velocity values in the medial cerebral artery in multiple of median and percentage of abnormal blood flow in groups.

Conclusion
Pregnant women with perinatal infections are typically found to have abnormalities of the blood flow in the medial cerebral artery. More pronounced changes are observed in pregnant with PI of viral and mixed etiology, which can induce hypoxic-ischemic lesions of the CNS and further lead to violations of psychomotor development in newborns.