Antihypertensive therapy influence on endothelial dysfunction in gestosis.

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Ethiology of gestosis remains unknown. This disorder is characterized by many researchers as general endotheliosis. Endothelium role is debated for few last years to be of great importance in blood pressure (BP) control in pregnancy. Endothelium dysfuction in gestosis contributes to impaired dilation ability of vessels in response to volume expansion during pregnancy and to endothelium-mediated vasodilating effect. Antihypertensive drugs show contrasting effects on improvement and restoration of endothelial function.

Objective: Using shear-stress test with endothelium-dependent flow mediated vasodilatation after 4,5 minutes brachial artery occlusion evaluate the endothelium role in BP control in normal and hypertensive pregnancies; to estimate the antihypertensive drug effects on endothelium function.

Methods: The responses of the forearm vasculature to 4,5 minutes occlusion were assessed using colour real-time duplex Doppler sonography in 20 normal controls (pregnant women aged 19 to 42) and 75 hypertensives (BP;140/90mmHg) with gestosis (aged 17 to 44 years) at baseline and after 14 days of antihypertensive therapy with metyldopha, clophelin, atenolol, nebivolol and nifedipin.

Results: Hypertensive women have had significantly lower brachial artery response to reperfusion after 4-min ischemia (8,4 ± 1,7%) ($p<0,05$) in compare to the normal controls (19,4 ± 2,6% in II trimester and 16,4 ± 2,3% in III trimester). 14-days antihypertensive therapy in the gestosis group modified the vascular responses of the artery in different ways according to administered drugs:
patients treated with metyldopha (1g/day), clophelin (0,225mg/day) and atenolol (50-200mg/day) didnt experience any consistent alterations in the dilation range contrary to those receiving nifedipin (40-60mg/day) (12,2 ± 1,3%) and nebivolol (5mg/day) (14,3±2,0%) ($p<0,05$).

Conclusion: Women, developing gestosis in pregnancy have background endothelium dysfunction obviously contributing to BP rise. Nebivolol (superselective 1-blocker with NO-synthase modulating function) and Ca-antagonist; nifedipin (restores NO availability through a mechnism probably related to an antioxidant effect) improve the impaired endothelium function.

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