

# The features of tension of hemodynamic alteration in women who had high risk of preeclampsia

21. Hypertensive Disorders in Pregnancy

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## **Objective**

The aim of the study was an anthropophysiological analysis of the circulatory state of cardiovascular system (CVS) in physiological pregnancy (FP) and women who had high risk of preeclampsia (RPr) and their association with the state of the pumping function of the heart (PFH).

## **Study design**

An observational clinical study was conducted in 245 pregnant women (with FP in 114 and with RPr in 131 women) and in 114 healthy non-pregnant women.

## **Results**

Optimization of the circulatory state of CVS during pregnancy by the regime of blood pressure, especially with FP, was accompanied by a clear overall increase in systolic characteristics of the PFH. This orientation in the cardiac minute volume (CMV, ml) unambiguously manifested itself during all three trimesters as with FP - lying and standing in total according to 24 characteristics out of 24 ( $P < 0.01$ ), while with RPr - by 18 out of 24 ( $P < 0.05$ ). If the manifestation of type III under hypotonic, normotonic, and hypertonic regimes in blood pressure was 8%, 12%, and 6%, respectively, then in case of FP it was 21%, 36%, and 50%, respectively (for all P positions  $< 0.01$ ), and for RPr, 48%, 66%, and 76% (for all positions  $P < 0.01$ ). For RPr in all modes of blood pressure, the representativeness of the hyperkinetic state in the PFH standing (type III) was significantly higher compared to FP ( $P < 0.01$ ).

## **Conclusions**

The marker of tension of hemodynamic alteration was a transition on the CMV to the hyperkinetic state in position from standing to lying - to III type of dynamic organization of the circulator state of CVS and system hyperresistance of arterial vessels, and by the predictor of insufficiency of adaptation of CVS was displayed mostly in the position upright by perfusion type, combining with circulatory syndromes limiting adaptive possibilities of arterial circulation.