The modern maternal haemodynamic features for prediction of preeclampsia

Dmytro **Konkov** [1,*], Liana **Puchalska** [2], Viktor **Rud** [1], Nazar **Adamchuk** [3]

[1] National Pirogov Memorial Medical University, Vinnytsya, Ukraine.
[2] Department of Experimental and Clinical Physiology, Medical University of Warsaw, Warsaw, Polland.
[3] Volyn branch of Obstetrics, Department of Gynecology and Perinatology, Faculty of Postgraduate Education, Danylo Halytsky Lviv National Medical University, Lviv, Ukraine.

DOI: 10.36129/jog.2024.S46

Objective. Annually due to PE 500,000 babies and 76,000 mothers had been dying in the world. Preeclampsia (PE) survivors will have at twice the risk of heart disease and stroke, and four times the risk of high blood pressure in the future. The objective is to evaluate the predictive values of the circulatory syndromes of the cardiovascular system (CVS) induced by gestational endotheliopathy.

Materials and Methods. Investigations of the circulatory syndromes of CVS and haemodynamic supporting of pregnancy was carried out in the first trimester in 114 women with physiological pregnancy (PhP) and in 132 pregnant women with gestational endotheliopathy (GE). We determined of circulatory syndromes by correlation of minute volume of blood while standing/lying – I type (hypokinetic condition) and III type (hyperkinetic condition) of haemodynamics. The haemodynamic risk was determined in accordance with the index of haemodynamic nonoptimality (IHN).

Results. According to our investigations the optimization of haemodynamical supporting in PhP was mechanism of vasodilator "slippage" of arterial vessels from the systemic vasoconstriction as the haemodynamic equivalent of endothelial activity. The predictors of PE in pregnant women were hyperkinetic type of circulation (by an anthropo-physiological ratio of standing/lying), integral indicators of functional depreciation of the circulatory syndromes of CVS – haemodynamic risk (by IHN > 30%), circulatory syndromes of arterial or venous blood insufficiency in abdominal and pelvic regions.

Conclusions. Our results obtained that the predictors of PE were haemodynamic syndromes of insufficiency and circulatory limitation in the standing position.