

Ductus venous Doppler in the assessment with a number of biomarkers in the prediction of preeclampsia at 11-13 weeks of gestation

Namazova N. T. , Kamalidinova Sh. M. , Bakhranova N. A. , Azimova G. A. , Muminov Sh. A.

1. Akfa University (Uzbekistan, Tashkent) 2. Republican Center "Screening of mother and child" 3. Tashkent Medical Academy Department of Radiology Tashkent Pediatric Medical Institute, Tashkent, Uzbekistan

Objective

To study the value of ductus venosus Doppler (PI) at gestational age 11⁺⁰-13⁺⁶ weeks, both alone and in combination with established preeclampsia (PE) biomarkers, including uterine artery pulsation index (PI), mean arterial pressure. (MAP), serum placental growth factor (PIGF) and PAPP-A in predicting the subsequent development of PE.

Methods

A comprehensive clinical-instrumental, ultrasound, laboratory examination was carried out on the basis of the Republican Center "Screening of mother and child" of the Republic of Uzbekistan from 2016 to 2021. In order to study the patterns of dynamics of growth and development of the fetus, as well as to study the effect of preeclampsia on the fetus, a retrospective analysis of the results of a comprehensive dynamic examination of 648 pregnant women who came for a consultation at the Republican Center "Screening of mother and child" in a planned manner in terms of 11 to 40 weeks of pregnancy was carried out.

Results

In a study population of 648 pregnancies, 76 (2.7%) developed PE, including 18 (0.6%) who delivered with PE at <37 weeks' gestation. The PI VP ratio was significantly increased in PE in pregnancy, and the effect of PE was dependent on gestational age at delivery; the deviation from the norm was greater for early than for late PE. The ratio of DV PI to UtA-PI improved the prognosis of preterm PE provided by maternal factors only (from 58.4% to 82.1%), maternal factors, MAP and UtA-PI (from 78.7% to 88.9%), maternal factors, MAP, UtA-PI and PIGF. 82.5% to 91.3%), maternal factors, SBP, UtA-PI, PIGF and DV PI (84.9% to 90.1%) and maternal factors, SBP, UtA-PI, PIGF, PAPP -A and DV PI (from 84.9% to 90.1%).

Conclusion

The ratio of DV PI to UtA-PI at 11⁺⁰-13⁺⁶ weeks of gestation, either alone or in combination with other biomarkers, is potentially useful in predicting the subsequent development of PE, especially preterm PE, but more is needed to confirm this finding. large-scale research.