Disturbed uterine artery hemodynamics is a possible predictor of fetal autonomic malfunction.
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Introduction
Since abnormal trophoblastic invasion is known as a reason of great obstetric syndrome the issue is to find out additional markers for the detection of fetal compromise. Fetal neurological maturation could be detected by monitoring heart rate variability (HRV). The validity of the amplitude of mode (AMo) and stress index (SI) in the diagnosing of fetal distress is known. In this study, we were interested in these variables of HRV in fetal growth restriction (FGR) and fetal deterioration.

Methods
Totally were enrolled 197 pregnant women at the end of I trimester with an increased average pulsatility index (aPI) in uterine arteries (>1.5 MoM, FMF score). Group I (N=129) had normal fetal growth. Group II (N=68) had FGR. Fetal HRV variables were investigated using non-invasive fetal electrocardiography technique with the application of the Cardiolab Babycard equipment (Scientific and research center "KhAI Medica", Ukraine) had done at the term of gestation 26-27 weeks.

Results
The percentage of fetal growth restriction in the study population was 34.5 %. The variables of AMo and SI in Group II was significantly higher than in normal growth Group: SI –1862.4; AMo – 80.3 % and SI –525.1; AMo – 67.3 %, respectively (p<0.05). The rate of fetal compromise detected by Doppler ultrasound was 14.0 % and 44.1 %. RR for fetal compromise was 3.407 (95% CI –1,059 –26,777).

Conclusion
FGR was featured by an autonomic malfunction and considerable rise of fetal deterioration.
Fetal HRV variables could be of use in the prediction of fetal compromise.