Results: There is a significant association between growth restriction & MCA PI1 with a sensitivity of the MCA PI1 of 52% & specificity of 100%. 12 true negatives were correctly identified, with a positive predictive value of 100% & negative predictive value of 84% as there were cases that resulted into no growth. Accuracy is 86.7%. Out of the 90 test outcomes, 78 of them were the correct result. MCA PI2 after 2 weeks showed that out of the 90 subjects, 18 had abnormal/ positive test with no interval growth. 7 showed no interval growth, but with within normal/negative MCA PI. 65 subjects with normal MCA PI1 and with interval growth showed the same results for MCA PI2 on follow up. MCA PI2 has a sensitivity of 72%, specificity of 100%, positive predictive value of 100% and negative predictive value of 72%. Accuracy is 92.2%. Out of the 90 test outcomes, 7 did not show the correct result.

Conclusions: MCA Doppler is a useful tool in helping us make a diagnosis of IUGR among high risk pregnant women at 28-38 weeks. There is a a significant association between MCA PI and interval growth, thus helping us classify the small for gestational age babies into the truly growth restricted and the constitutionally small for age. MCA on initial visit has an accuracy of 86.7%; helping us institute already the necessary management for these cases.

EP19.20
Systolic and diastolic aortic isthmus (AoI) components

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Objectives: The AoI is complex and its variations are difficult to understand. Anatomically is important as it is located between the cerebral and the placental.

Methods: Retrospective analysis from US databases. Images with AoI, umbilical artery PI, MCA PI were retrieved. AoI velocities were measured as follows: 1: peak systolic; 2: systolic notch, either positive or negative if inverted; 3: peak diastolic, as the highest velocity during diastole; 4: end diastolic, the lowest velocity during diastole. All these were studied and correlated to UA, MCA, CPR, fetal weight z-score and GA.

Results: There were 197 scans, from 22 to 42 weeks, @mean 32 weeks. AoV1 (systolic peak) was correlated with greater GA ($R = 0.25$, $p < 0.001$). Aov2 (systolic notch) lowered progressively during gestation ($R = -0.44$ $p < 0.001$). Diastolic velocities (v3 & v4) did not correlate to GA. AoV4 were not correlated to UA PI, MCA PI nor CPR. In fetuses ≥ 30 weeks ($n = 124$), Aov3 was positively correlated to CPR (Spearman $R = 0.18$ $p < 0.05$), and MCA PI ($R = 0.18$ $p < 0.05$).

Conclusions: This finding supports that whenever the MCA diastole is normal, (elevated PI), the diastolic flow in the AoI is higher, toward the placenta, in fetuses @30w and later. There is a regulation of cerebral resistance and aortic flow that could be detected in normal adequate growing fetuses.

Supporting information can be found in the online version of this abstract

EP19.21
Disturbed uterine artery hemodynamics is a possible predictor of fetal autonomic malfunction

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Objectives: 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. A chronic placental insufficiency is an initial event in fetal malnutrition and deterioration. 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 197 pregnant women at the end of I trimester with an increased average pulsatility index (aPI) in uterine arteries (>1.5 MoM, FMF score) were enrolled in this research. This cohort was divided into two groups. Women with normal fetal growth ($N = 129$) were included in Group I. Pregnant ladies with FGR ($N = 68$) were observed in Group II. Fetal HRV variables were investigated using non-invasive fetal electrocardiography technique with the application of the Cardiolab Babycard equipment (Scientific and research centre "KhAI Medica", Ukraine). The records were done at the term of gestation 26-27 weeks. The results thus obtained were analysed with an ANOVA test to compare data between groups. The significance was set at p-value <0.05. Relative risk (RR) for fetal compromise was calculated.

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%, relatively ($p < 0.05$). 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). Therefore, FGR was featured by an autonomic malfunction and considerable rise of fetal deterioration.

Conclusions: Fetal HRV variables could be of use in the prediction of fetal compromise.

EP19.22
Detection rate and outcome of small-for-gestational-age fetuses using a routine third trimester ultrasound scan in our population

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Objectives: Fetal growth restriction is a common pregnancy complication related to placental insufficiency and poor perinatal outcome. The aim of our study was to evaluate our pregnancy control performance using an ultrasound scan at 32-34 and 38-40 weeks of gestation in our population. We define SGA to fetuses with EFW below 10th percentile and normal Doppler, and IUGR when EFW below 3rd percentile or between 3rd and 10th percentile with abnormal Doppler.

Methods: A retrospective study was conducted using our data base from all the pregnancies during July 2016 until August 2018 in our Hospital. We selected all newly born babies with weight below 10th percentile according to gestational age and gender using a calculator. We studied maternal and obstetric parameters, diagnosis of FGR and perinatal outcomes. We excluded multiple pregnancies and intrauterine fetal death.

Results: We had a total of 2088 deliveries in the mentioned period, from which 266 (12.7%) were below 10th percentile of weight. Our detection rate was 37.2% ($n = 99$). In this group 37.4% corresponded to SGA and 62.6% to IUGR. From the not detected group ($n = 167$), 19.2% had a weight below 3rd percentile. We found statistically significant differences towards the group where FGR was detected, when comparing serum PAPP-A levels less than 0.3 MoMs (OR 5.32 IC 1.05-26.91), gestational hypertensive disorders (OR 5.34 IC 1.86-15.32), use of vaginal prostaglandins (OR 2.74 IC 1.64-4.58) and induction of labour (OR 2.61 IC 1.52-4.46). There