centile with normal Doppler umbilical artery (UA) and intrauterine growth restriction (IUGR), EFW < 10° centile and PI of UA > 2 standard deviation. aIMT was measured by ultrasonography during third trimester. Carbohydrate profile in mothers and fetuses at delivery was assessed.
Results: Between 165 women enrolled, 97 were controls, 57 SGA and 11 IUGR. There were no significant differences in maternal age and BMI among the groups. IUGR presented a lower birth weight and a higher aIMT compared to SGA and AGA fetuses ($P < 0.05$). There was a significant positive correlation between maternal and fetal values for adiponectin, insulin, glucose and HOMA index. Adiponectin was significantly lower in the mother than in the fetus ($P < 0.05$) while NEFA and glucose were higher ($P < 0.05$). Maternal adiponectin and NEFA in SGA were significantly higher than in AGA ($P < 0.05$); moreover there was a significant positive correlation of fetal glucose with fetal aIMT not observed in AGA ($P < 0.05$), and in SGA fetuses a high aIMT correlated with high insulin resistance. In addition, in IUGR high aIMT was associated with high insulin concentrations. A significant negative correlation between maternal adiponectin and fetal aIMT was found in AGA, while in the SGA group the correlation was significantly positive ($P < 0.05$).
Conclusions: This study suggests that aIMT could be associated with fetal glucose metabolism alteration, and that maternal metabolic disorders might reflect on fetal metabolism and influence the structure of fetal vessels.

OP31.08
Intima media thickness and lipid profile at delivery in pregnancies complicated by intrauterine growth restriction

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Objectives: To evaluate the relationship of increased aortic intima media thickness (aIMT) in fetuses with intrauterine growth restriction with fetal and maternal lipid profile at delivery.
Methods: Prospective study pregnancies enrolled between January 2009 and January 2011. Patients were divided in appropriate for gestational age (AGA), with EFW between 10°–90° percentile; small for gestational age (SGA) EFW < 10° centile with normal Doppler umbilical artery (UA) and intrauterine growth restriction (IUGR), EFW < 10° centile and PI of UA > 2 standard deviation. aIMT was measured by ultrasonography in the third trimester. We evaluated lipid profile in fetuses and mother at delivery.
Results: 165 patients were available: 97 were AGA, 57 SGA and 11 IUGR. There were no significant differences in maternal age and BMI among groups. IUGR fetuses had lower birth weight respect SGA and AGA ($P < 0.05$). aIMT was significantly higher in IUGR than SGA and AGA fetuses ($P < 0.05$). Maternal total cholesterol, HDL, LDL, oxidized LDL, and triglycerides were higher respect to their fetuses. The concentration of leptin was the same in maternal and fetal circulation, except for SGA as maternal was 8 ng/ml and fetal 4 ng/ml (p 0.074) and for IUGR as maternal was 5 and fetal was 2 (p 0.219). Moreover fetal leptin was positively correlated with birth weight ($P < 0.05$). Fetal oxidized LDL was significantly higher in IUGR than SGA and AGA ($P < 0.05$). Higher fetal cholesterol and LDL were significantly associated with lower neonatal weight ($P < 0.05$). There was a hypertriglyceridemia in SGA and IUGR groups than AGA ($P = 0.05$) and among SGA fetuses we found a significant positive correlation between aIMT and triglycerides concentration ($P < 0.05$).
Conclusions: Lipidic profile of mother is correlated with newborns having low birth weight showing higher colesterol and LDL. Therefore, low birth weight is associated with dyslipidemic state as well as high triglycerides were associated with increase in aIMT in IUGR.

OP31.09
Cord blood and post-delivery cytokines, chemokines and neurotrophins in infants affected by fetal growth restriction (FGR)

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Objectives: FGR secondary to placental insufficiency results in increased risk of subsequent metabolic syndrome, a range of conditions associated with inflammation. This study quantified cord and neonatal cytokines, chemokines and neurotrophins to assess differences in the perinatal period for these infants.
Methods: Single centre prospective cohort study of FGR and appropriate-for-gestational-age (AGA) pregnancies. Cord blood was analysed by flow cytometry (FC) for monocyte intracellular IL-1-B, IL-6, IL-10 and TNF- α; dried blood spots from cord blood, day 1 and 6 weeks infant heel-pricks were analysed by X-Map immunoassay for pro- and anti-inflammatory cytokines, chemokines and neurotrophins. Statistics with SPSSv.19 using ANCOVA to correct for gestation.
Results: Samples from 25 control AGA infants and 15 FGR infants were obtained. Cord blood FC and X-Map showed increased IL-10 in FGR cord blood and monocytes ($P = 0.007/0.008$). X-Map demonstrated increased IL-2 ($P = 0.004$), increased MMP-9 ($P = 0.011$) and IL-17 ($P < 0.001$). Infant day 1 ×-map samples showed increase in IL-6 ($P < 0.001$), IL-8 ($P = 0.003$), IL-18 ($P = 0.02$), MCP-1 ($P = 0.008$), IL-10 ($P = 0.005$), BDNF ($P = 0.021$) and NT-4 (0.025). Infant 6-week X-Map samples showed no significant differences between FGR and AGA infants.
Conclusions: These results demonstrate a mileau of increased pro-, anti- and immuno-modulatory cytokines in FGR cord blood and PBMCs. This may result from fetal and placental adaptation to chronic hypoxia in FGR. The profile is altered in day 1 samples, with increased pro- and anti-inflammatory cytokines and neurotrophins in FGR infants. This altered profile occurs in the first 24 hours after the infant is delivered from a failing placenta and is able to establish adequate oxygenation. Our results suggest that these inflammatory changes appear to resolve by 6 weeks although our sample size is small. Increased BDNF and NT-4 in the day 1 FGR infant may be a result of or a response to fetal and neonatal cerebral complications, highly prevalent in FGR.

OP32: FETAL GROWTH ASSESSMENT

OP32.01
The importance of standardizing pregnancy dating models

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Objectives: Ultrasound dating is essential in modern pregnancy care. Thus, it is imperative that the dating models are reliable. In early prenatal diagnostics, the international use of standardized measurement techniques and analyses has contributed to reproducible results