

was undetectable prior to delivery at 38 weeks. Birth weight was 3.5 kg and APGAR score 9/10. The neonate was asymptomatic. An MRI at 2 months of age demonstrated a $14 \times 18 \times 14$ mm solid lesion behind the lower left pulmonary lobe. It was removed 1 month later after a left thoracotomy and lysis of adhesions. At the age of 12 months the child was asymptomatic and healthy. Intrauterine PLP has been applied in a limited number of cases with PS, and it seems to be associated with a better perinatal outcome. In the described case, PLP resulted in significant mass reduction, hydrops and polyhydramnios treatment, and prevention of the pulmonary hypoplasia.

P41: UTERINE ARTERY DOPPLER

P41.01

Uterine arteries blood flow comparison in 11+0 to 13+6 weeks of pregnancy after natural and ART conception

O. Solovyov

Reproductive Medicine Clinic "Nadija", Ukraine

Objectives: To evaluate uterine arteries Doppler pulsatile index (PI) and resistance index (RI) at 11+0 to 13+6 weeks of singleton pregnancies with good known outcome after natural and assisted reproductive technologies (ART) conception, to continue this work for later retrospective analysis in cases with obstetrical complications and poor neonatal outcome with the idea to use first trimester prenatal anomalies screening program for obstetrical goals.

Methods: All patients both with natural pregnancies and with pregnancies after ART conception underwent transabdominal uterine artery Doppler flow velocimetry to measure the PI and RI in addition to a first-trimester prenatal chromosomal anomaly screening program in a one-stop clinic for assessment of risk (OSCAR). After delivery, a retrospective analysis was done to compare Doppler measurements in late first trimester in pregnancies with known good outcome.

Results: There were 36 cases after natural spontaneous conception and 48 cases after ART conception. The mean PI were 1.46 in spontaneous pregnancies and 1.43 in ART pregnancies. The mean RI were 0.68 in spontaneous pregnancies and 0.66 in ART pregnancies. An average newborn weight and Apgar was, respectively, 3430 g and 9 in spontaneous conception group. An average newborn weight and Apgar was, respectively, 3320 g and 9 in ART pregnancies group.

Conclusions: These results show no differences in uterine arteries Doppler indices between groups with spontaneous and ART conception in pregnancies with known good outcome. It suggests no major differences in trophoblastic invasions between ART and natural pregnancies with good outcome. It needs to evaluate the possible differences of uterine Doppler indices in pregnancies after natural spontaneous and ART pregnancies in cases of known late obstetrical complications.

P41.02

Prediction of pre-eclampsia and intrauterine growth restriction by uterine artery doppler blood flow velocity analysis

B. Šajina Stritar

Department of Obstetrics and Gynecology, University Clinical Centre Ljubljana, Slovenia

Objectives: The aim of our study was to evaluate the prognostic value of PI, RI, early diastolic notch and Notch index (NI) measured by ultrasound in the uterine arteries at 24 weeks of gestation in the development of gestational hypertension (GH), pre-eclampsia (PE) and IUGR.

Methods: The study population presented 213 low risk pregnant women. At 20 weeks of gestation after routine ultrasound examination blood flow in uterine arteries from both sides of uterus

was measured. The examination was repeated at 24 and 32 weeks of gestation. Mean PI and mean RI of both uterine arteries were calculated. Early diastolic notch was denoted. The depth of the notch was assessed through introducing a new index called the Notch index. The data about pregnancy outcome were checked from The Slovenian Perinatal Information System.

Results: PI had no and RI had little predictive value for adverse pregnancy outcome. Early diastolic notch in both uterine arteries had better correlation with adverse pregnancy outcome (27% specificity, 93% sensitivity, 33% PPV, 90% NPV, RR 3.4). Mean NI had the best predictive value for adverse pregnancy outcome (27% sensitivity, 98% specificity, 64% PPV and 91%). The highest RR was associated with PE (36.5), lower with IUGR (6.9) and the lowest with GH (3.7).

Conclusions: Mean NI to or below the 5th centile measured in uterine arteries at 24 gestational weeks shows the best predictive value for adverse pregnancy outcome. Abnormal blood flow better correlates with PE than with IUGR, the correlation with GH is low. The specificity and NPV is higher than sensitivity and PPV.

P41.03

Uterine artery Doppler at 10–14 weeks and maternal serum concentrations of asymmetric dimethylarginine

F. Prefumo, G. S. Whitley, B. Thilaganathan

St George's University of London, United Kingdom

Objectives: Maternal serum levels of asymmetric dimethylarginine (ADMA), an endogenous inhibitor of endothelial nitric oxide synthase, are known to be increased in women with high resistance placental circulation in the second trimester. Our aim was to measure first trimester ADMA concentrations in pregnancies with high uterine resistance.

Methods: Doppler ultrasound examination of the maternal uterine arteries was performed at 10–14 weeks of gestation. High resistance was defined as bilateral uterine artery notches and a mean resistance index (RI) $> 95^{\text{th}}$ centile. Control cases were defined as those presenting with no notches and a mean RI $< 95^{\text{th}}$ centile. ADMA concentrations were measured in maternal serum.

Results: Forty singleton pregnancies were examined, 21 with high uterine artery resistance and 19 controls. Three cases of pre-eclampsia occurred, all in the high resistance group. The mean (standard deviation) maternal serum ADMA concentration was 0.78 (44%) and 0.93 (56%) $\mu\text{mol/L}$ in the high resistance and control group, respectively ($P = 0.17$).

Conclusions: No significant difference was found in maternal serum ADMA between pregnancies with first trimester high resistance uterine artery blood flow and controls. While second trimester circulating ADMA may have a direct link with maternal endothelial function, in the first trimester the effect of ADMA may be mainly evident at the placental level, without consequently affecting maternal circulating concentrations of the molecule.

P41.04

Defective spiral artery transformation during the first half of pregnancy is a likely underlying mechanism for early pre-eclampsia but not for late pre-eclampsia

K. Melchiorre, A. Papageorgiou, A. Bhide, B. Thilaganathan

Fetal Medicine Unit, St George's Hospital, United Kingdom

Objectives: To use Doppler ultrasound to investigate the hypothesis that pre-term rather than term pre-eclampsia is due to defective transformation of spiral arteries.

Methods: Uterine artery Doppler studies were performed at 18–24 weeks as part of routine screening for pre-eclampsia in singleton pregnancies. Both uterine artery resistance indices and presence or absence of a diastolic notch were recorded. Receiver operating characteristic (ROC) curve were then generated for pre-term and term pre-eclampsia.