

**OP10.09****The relationship between fetal growth in the first trimester, PAPP-A and birthweight percentiles**

O. Habayeb<sup>1</sup>, A. Daemen<sup>2</sup>, D. Timmerman<sup>2</sup>, B. De Moor<sup>2</sup>, T. Bourne<sup>4,3</sup>, G. Hackett<sup>1</sup>, C. Lees<sup>1</sup>

<sup>1</sup>Fetal Medicine Department, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom;

<sup>2</sup>Electrical Engineering – ESAT, Katholieke Universiteit, Leuven, Belgium; <sup>3</sup>Department of Obstetrics and Gynaecology, University Hospitals of Leuven, Leuven, Belgium; <sup>4</sup>Department of Obstetrics & Gynaecology, Imperial College-Hammersmith Campus, London, United Kingdom

**Objectives:** The association between low PAPP-A at 11–14 weeks and small for gestational age babies is well known. We collected data from women attending for early PAPP-A (offered from 9 weeks gestation) as part of a modified trisomy 21 screening programme, where there were two or more first trimester CRL measurements. We sought to establish the association between first trimester early PAPP-A and first trimester growth rate, CRL growth rate and birthweight percentile.

**Methods:** All women attending the screening program with 2 or more first trimester CRL measurements September 2007–May 2008 were included in this clinical audit. CRL measurements were performed between 8 and 13 weeks gestation. Birthweight data were expressed as percentiles in relation to the gestational age. The rate of growth was calculated as the difference between CRL measurements in millimetres over the difference between the gestational ages in days. PAPP-A was expressed as multiple of median (MoM) for gestational age.

**Results:** 169 women fulfilled the inclusion criteria. There was no correlation between first trimester growth rate and either PAPP-A MoM, nor birthweight percentile (both Spearman correlation coefficients –0.11; p values 0.12 and 0.15 respectively).

**Conclusions:** Low early first trimester PAPP-A is not associated with poor first trimester growth, nor is poor first trimester growth associated with birth weight percentile.

**OP10.10**

Abstract withdrawn.

**OP11: MATERNAL AND PLACENTAL DOPPLER****OP11.01****The role of uterine artery Doppler velocimetry in predicting adverse pregnancy outcome**

A. Jamal<sup>1</sup>, F. Abbasalizadeh<sup>2</sup>, H. Vafaei<sup>3</sup>

<sup>1</sup>Obstetrics & Gynaecology, Tehran University of Medical Sciences, Tehran, Iran; <sup>2</sup>Obstetrics & Gynaecology, Tabriz University of Medical Sciences, Tabriz, Iran; <sup>3</sup>Obstetrics & Gynaecology, Shiraz University of Medical Sciences, Shiraz, Iran

**Objectives:** To determine the role of second-trimester uterine artery (UtA) Doppler velocimetry in predicting adverse pregnancy outcome

**Methods:** Color Doppler assessment of the uterine arteries was carried out in 435 consecutive women attending antenatal clinic at 18–24 weeks. The 95<sup>th</sup> mean pulsatility index (PI) and the presence or absence of bilateral notch were recorded. Using the reference range stated by Gomez *et al*, the sensitivity, specificity, positive and negative predictive values for a cut-off of a mean PI > 95<sup>th</sup> percentile

for gestational age and for the presence of bilateral notching in the prediction of pregnancy outcome were calculated.

The adverse pregnancy outcome was defined as any or combination of pre-eclampsia, IUGR, IUFD and placental abruption.

**Results:** The women with adverse pregnancy outcome had significant higher mean PI (mean PI, 1.27 ± 0.55 vs. 0.99 ± 0.32; P = 0.003) and higher prevalence of bilateral notch (20% vs. 4.6%, P = 0.001) compared with those with normal outcome. The mean (±SD) PI in women with severe adverse outcome was 1.66 ± 0.66 vs 1.0 ± 0.32 in compared women (P = 0.002). For a screen positive rate of 10.6% (mean PI > 95<sup>th</sup> percentile for gestational age and/or bilateral notches), the sensitivity for predicting adverse outcome was 33.3% with the specificity of 92.1%, positive and negative predictive values of 32.6% and 92.3% respectively. The sensitivity increased to 60% for predicting severe adverse outcome with the specificity of 91.2%, positive and negative predictive values of 19.6% and 98.5% respectively.

**Conclusion:** The uterine artery Doppler velocimetry can predict adverse pregnancy outcome.

**OP11.02****Do maternal cardiac abnormalities predispose to high resistance uterine artery Doppler indices?**

K. Melchiorre<sup>1</sup>, G. R. Sutherland<sup>2</sup>, M. Liberati<sup>3</sup>, B. Thilaganathan<sup>1</sup>

<sup>1</sup>Fetal Medicine Unit, Department of Obstetrics and Gynaecology, St Georges, University of London, London, United Kingdom; <sup>2</sup>Department of Cardiology, St Georges Hospital NHS Trust, London, United Kingdom; <sup>3</sup>Department of Obstetrics and Gynaecology, Chieti University Hospital, Chieti, Italy

**Objective:** To compare the prevalence of previously undiagnosed cardiac abnormalities in women with normal and high resistance indices at mid-trimester uterine artery Doppler screening.

**Methods:** Maternal transthoracic echocardiography was undertaken in pregnant women after uterine artery Doppler screening for pre-eclampsia at 21–23 weeks gestation. Women with a mean uterine artery pulsatility index above 95<sup>th</sup> centile (1.25) for the local population were considered to have a high resistance uteroplacental blood flow indices. The prevalence of cardiac structural defects in the screened women was recorded.

**Results:** A total of 210 women consented to have maternal echocardiography: 86 with high resistance and 124 with normal resistance uterine artery blood flow indices. There were six previously undiagnosed, functionally significant cardiac defects in this cohort, all in the high-resistance uterine blood flow group (p < 0.05). The newly diagnosed cardiac defects included: large atrio-septal defects with unidirectional shunt, right/left heart disproportion and pulmonary hypertension (n=2), mitral valve disease possibly secondary to rheumatic heart disease (n=2) and bicuspid aortic valve with aortic regurgitation (n=1).

**Conclusions:** The prevalence of previously undiscovered maternal cardiac structural malformations appears significantly increased in women with high mid-trimester uterine artery Doppler resistance indices. This observation should be confirmed in a larger series of patients because it has important consequences for medical practice and the long-term care provided to these patients.