

## Uterine and umbilical arteries Doppler studies at 28 weeks after a pathological uterine artery Doppler in the mid trimester scan

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### Objective

To determine the contribution of uterine and umbilical arteries PI Doppler studies at 28 weeks in women with increased uterine PI in their routine second trimester scan.

### Methods

Women with increased mean PI in uterine arteries (UtA) at 19-22 weeks of gestation were booked for a growth scan including Doppler measurements of uterine and umbilical arteries at 28 weeks of gestation. Pregnancy outcomes included SGA below the 5th and 10th centiles and preeclampsia.

### Results

During the study period, a total of 5109 women underwent routine anomaly ultrasound scan at 19-22 weeks of gestation. After excluding cases of missing data, abnormal karyotype or termination of pregnancy, 266 cases (5.8%) with an extra growth scan at 28 weeks due to abnormal PI in the uterine arteries at 19-22 weeks were included in our study. There were 72 (27.1%) cases of SGA infants below the 10th centile and 43 (16.2%) below the 5th centile. The prevalence of women with preeclampsia was 6.4% and with early onset preeclampsia (< 34 weeks) was 1.9%. Multiple regression analysis showed that mean uterine artery PI is significantly associated with SGA < 10th centile.

### Conclusion

The essential finding of our study was that uterine artery PI > 95th centile performs well predicting preeclampsia, early onset preeclampsia and SGA. In women with abnormal uterine artery Doppler at mid-trimester scan, which persists at 28 weeks is associated with preeclampsia, early-onset preeclampsia and SGA. Umbilical artery PI at 28 weeks is not associated with these adverse pregnancy outcomes.