Aims
- To establish a population specific reference range for mean uterine artery pulsatility index (meanUAPI) <11 weeks.
- Determine if an abnormal meanUAPI <11 weeks was associated with adverse pregnancy outcomes (SGA, PIH, PET).
- Assess changes in meanUAPI between <11 weeks and 11-13+6 weeks.

Methods
- A prospective cohort was examined <11 weeks (Fig 1) and at 11-13+6 weeks (Fig 2) to develop reference ranges for meanUAPI.
- Based on these regression models meanUAPI Z-scores were compared between outcome groups using two-sample t-test.
- Longitudinal changes in the meanUAPI between <11 and 11-13+6 weeks were assessed by two-way mixed ANOVA.

Results
- Prior to 11 weeks, there was no significant difference in meanUAPI between normal (n=622) and adverse (n=80) outcomes (mean(95%CI): 2.62 (2.57-2.67) and 2.67 (2.50-2.84) respectively; p=0.807).
- At 11-13+6 weeks, meanUAPI was significantly higher in the adverse (n=66) compared with the normal (n=535) outcome group (mean(95%CI): 1.87 (1.70-2.03) and 1.67 (1.63-1.72) respectively; p=0.040).
- There was a statistically significant decrease (p<0.0001) in meanUAPI between the two time points.

Conclusion
The meanUAPI measured < 11 weeks gestation does not appear to be a useful marker for prediction of placental-related adverse pregnancy outcomes supporting the prediction of risk at 11-13+6 weeks gestation.