

## Changes in uterine Doppler and circulating angiogenic factors in the third trimester

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### Objective

To determine changes in uterine Doppler (uterine artery pulsatility index, UtA-PI) and maternal plasma concentrations of placental growth factor (PIGF), soluble Fms-like tyrosine kinase-1 (sFlt-1) and their ratio at ~30 to ~36 weeks of gestation and their possibility to identify risk pregnant women for Term preeclampsia (with delivery > 37<sup>+0</sup> weeks of gestation).

### Methods

A prospective cohort study included 1189 singleton pregnant women from whom blood samples were obtained at ~30 and ~36 weeks of gestation and who delivered after 36 week of gestation. Term preeclampsia was defined by the criteria of The International Federation of Gynecology and Obstetrics (FIGO). Plasma concentrations of PIGF and sFlt-1 were assessed using TRACE (Time-Resolved Amplified Cryptate Emission) homogenous immunoassay and Doppler UtA-PI was measured.

### Results

The prevalence of Term preeclampsia (PE) was 2.4% (n = 28). A level of sFlt-1/PIGF ratio and its longitudinal changes was associated with Term PE. While at ~30 week a model including ratio sFlt-1/PIGF and UtA-PI explained a 16.2% of the uncertainty of developing Term PE, at ~36 week the same variables explained 25.2% (R<sup>2</sup> Naegelkerke) [p<0.001]. A model including the longitudinal changes between the first and second measurements of both predictors had an R<sup>2</sup> of 26.8%, which was significantly different from that of the ~36 week evaluation [p=0.45]. The area under the curve (AUC) of the ~36 week sFlt-1/PIGF ratio was significantly higher than at ~30 week (0.86 [0.77-0.94] vs. 0.81 [0.73-0.9]; p=0.043). The AUC of the 30-to-36 weeks change of the sFlt-1/PIGF ratio (0.85 [0.77-0.94]) did not significantly differ from that of at ~36 week (p=0.82). We found no significant association between third trimester UtA-PI and its longitudinal changes and Term PE.

### Conclusion

The Kryptor Compact sFlt-1/PIGF ratio at 36 week allows identification of risk pregnancies for developing Term PE. The sFLT-1/PIGF ratio as methods of screening for Term PE in the general population is eligible.