Levels of maternal serum angiogenic factors in third-trimester normal pregnancies: reference ranges, influence of maternal and pregnancy factors and fetoplacental Doppler indices.

Abstract:
To establish normal ranges of maternal placental growth factor (PIGF), soluble fms-like tyrosine kinase-1 (sFlt-1) and sFlt-1/PIGF ratio at 32-41 weeks' gestation and to evaluate the influence of maternal characteristics, and of fetoplacental Doppler. Serum levels of PIGF, sFlt-1 and sFlt-1/PIGF ratio were measured in 300 noncomplicated pregnancies (30 at each gestational week between 32 and 41). Quantile regression analysis was used to derive gestational age (GA)-adjusted normal ranges, and to account for characteristics that might influence serum levels. The relationship with Doppler indices was tested, including umbilical artery pulsatility index and middle cerebral artery pulsatility index. PIGF decreased with GA from 32 weeks, while sFlt-1 and sFlt-1/PIGF ratio increased steadily. None of the factors evaluated showed any significant influence on the levels of angiogenic factors. PIGF multiple of the median significantly correlated with mean uterine artery Doppler (R = -0.17; p = 0.029). In normal pregnancies during the third trimester, serum PIGF decreases, sFlt-1 increases and sFlt-1/PIGF ratio increases with GA. Angiogenic factor levels needed no adjustment for factors such as smoking, body mass...
index, blood pressure or parity.