Correlation of first trimester placental volume and vascular indices with birthweight

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Objective

Study correlation of first trimester placental volume (PV) and vascularization indices (VI) with birthweight (BW)

Method

- Observational study (July 2015–June 2017)
- Pregnant women without medical disorder
- Confirmed dates at 11-13 +6 weeks gestation.
- Placental volume and vascularization indices determined using 3D power doppler and VOCAL on Voluson E-8
- Routine ANC, pregnancy outcome noted at birth
- Placental volume expressed as MOM for gestation

Results

- 168 women completed study
- First trimester PV significantly correlated with BW, adjusted for gestational age (r = 0.266; p = 0.00)
- Correlation between VI (r=0.164, p = .034), FI (r =0.245, p = .001), VFI (r =0.24, p = .002) and BW

Conclusion

- First trimester PV and VI correlated with BW
- Compared to AGA, PV was significantly more in LGA, not significantly lower in SGA (included mostly constitutionally small)
- Of all placental VI, only FI was significantly higher in LGA compared to AGA