Fetal growth velocity and small for gestational age prediction

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Objective. We aimed to evaluate the diagnostic accuracy of the fetal growth velocity to predict small for gestational age (SGA) fetuses. We further assessed the role of ultrasound examination reiterations and the differences between estimated fetal weight (EFW) and fetal abdominal circumference (AC).
Materials and Methods. We conducted a retrospective observational study considering all single pregnancies with at least two growth scans performed between 20 and 38 weeks gestation. Women with only one scan and twin pregnancies were excluded, and fetal growth velocity was assessed as a unit/week or z-score/week variation. The outcomes were SGA < 3rd and 10th centile.
Results. In total, 1412 women and 3397 ultrasound scans were considered. Our study showed that fetal growth velocity was predictive of SGA. The growth velocity evaluated as a unit/time was more predictive of the z-score/time evaluation and was notably valuable for diagnosing SGA < 3rd percentile. With the increase in the ultrasound scan reiterations, fetal weight growth velocity was more accurate in predicting SGA. There were no differences between the predictive value of the estimated fetal weight or the fetal abdominal circumference growth in predicting small for gestational age.
Conclusions. Fetal growth velocity is significantly predictive for SGA, especially for those born with a fetal weight < 3rd centile. Assessing growth velocity as units/time and with a broader number of reiterations increases prediction accuracy.