Background

- Sonographic estimated fetal weights (EFWs) are critical for obese pregnancies given the limited clinical estimates.
- The Intergrowth-21st (IG-21) formula, derived from an international population, may be more generalizable than the American-derived Hadlock formula.
- This study compared accuracy of estimated birthweights (EBWs) using both formulas from 3rd trimester scans in the obese population.

Methods

- A retrospective chart review of patients (BMI >30) with 3rd trimester scans who delivered at two urban hospitals from 2013-2017.
- EFWs using Hadlock and IG-21 formulas and the gestation-adjusted projection (GAP) method (below) were used to project EBW at the delivery and were compared to actual birthweight (ABW).
- The proportions of EBWs correct within 10% of ABW predicted by each formula were compared using McNemar's test.
- The study had 90% power for a noninferiority margin of 5% for comparing accuracy within 10% of ABW between methods.

Results

586 patients were studied.

- Good agreement between Hadlock and IG-21 EBWs, ICC 0.93 (95%, CI: 0.65-1.00)
- Hadlock EBWs were 108.3g greater on average than IG-21 EBWs (95% CI: 101.2-115.5)
- Hadlock EBWs within +/- 10% of ABW = 48.3% vs IG-21 EBWs within +/-10% = 52.4%
- IG-21 was non-inferior to Hadlock ($p=0.48$)
- Neither reference was able to identify extremes of growth well (Table 1)

Conclusions: IG-21 performed similarly to Hadlock in predicting EBW in obese women, but both had poor sensitivity for detecting extreme ABWs. More research is needed to evaluate IG-21 performance in identifying abnormal fetal growth.