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Accuracy of antenatal ultrasound in predicting large-for-gestational-age babies

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Objectives: Large-for-gestational-age (LGA) at delivery is associated with adverse maternal and neonatal outcomes. The aim of this study was to investigate the ability of antenatal ultrasound scan to predict LGA at birth.

Methods: We analysed data from a routinely collected NHS database of 160,652 births, which included 26,527 pregnancies with antenatal ultrasound estimated fetal weight (EFW) between 35+0 to 38+0 weeks' gestation. We defined LGA EFW and birthweight as weight >90th customised centile, and calculated sensitivity, positive predictive value, false positive rate, and diagnostic odds ratio for the overall cohort (26,527) and for a subset of 912 pregnancies where the scan was performed for suspected LGA.

Results: The median gestational age at delivery was 276 days (IQR 15.0) and the median interval from scan to birth was 20 days. Of the 26,527 pregnancies in the study cohort, 2,241 (8.4%) were LGA at birth, and 1,459 of these were detected antenatally by ultrasound EFW, giving a DR 65.1%, PPV 41.0%, and a FPR 8.6%, with an overall DOR of 19.7 (95th CI, 17.9–21.8). In the subgroup of 912 pregnancies scanned for suspected LGA, 293 (32.1%) were born LGA, with a DR 77.1%, PPV 50.3%, FPR 36.0%, and DOR 6.0.

Conclusions: Late third trimester ultrasound estimation of fetal weight in routine practice has a reasonably good ability to identify and predict LGA at birth. It improves further when the indication for ultrasound is suspected LGA, however, at the risk of high false-positive diagnoses of LGA.