Accelerated growth identifies non-LGA pregnancies at risk of shoulder dystocia

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Objective

Large for gestational age (LGA) babies have an increased risk of intrapartum complications including shoulder dystocia. Recent development of a new growth velocity standard integrated into the new GROW 2.0 (Fig 1) ➔ electronic charts has shown improved prediction of adverse outcome following slow growth. We wanted to assess the contribution that accelerated growth can make in identifying risk of shoulder dystocia.

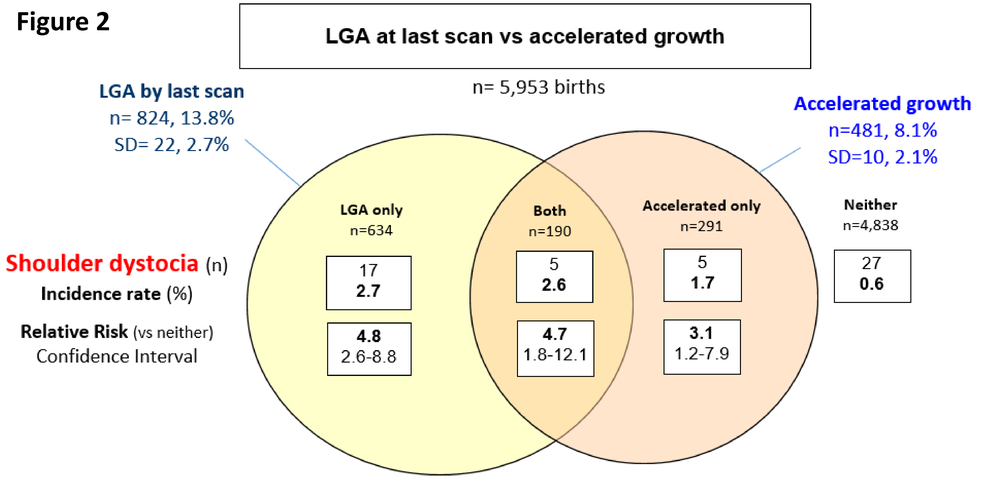
Methods

- The study cohort consisted of 5953 pregnancies with at least two third trimester EFW scans and included 54 deliveries (0.9%) with shoulder dystocia.
- Growth velocity was assessed by the projected optimal weight range (POWR) method [1].
- We compared risk of shoulder dystocia following 1. LGA (>90th customised centile) at last scan, and 2. accelerated velocity between the last 2 scans.
- Significance was determined by relative risks (RR) with 95% confidence interval (CI).

1. Hugh O, Gardosi J. Fetal weight projection model to define growth velocity and validation against pregnancy outcome in a cohort of serially scanned pregnancies. Ultrasound in Obstetrics & Gynecology. 2022;60(1):86–95.

Figure 1
GROW 2.0 chart

Figure 2



Results

- The median gestational age of the last two scans was 34+0 and 37+1 weeks, respectively, and 39+2 weeks at birth.
- 824 (13.8%) fetuses had an LGA EFW at last scan, of which 22 had shoulder dystocia at delivery (RR 4.8; CI 2.7 – 8.4).
- In 634 of the 824 LGA fetuses (76.9%) there was no accelerated growth preceding the last scan, and this group had 17 cases of shoulder dystocia (RR 4.8; CI 2.6 – 8.8).
- Accelerated growth between the last two scans occurred in 481 pregnancies (8.1%) and was followed by shoulder dystocia in 10 deliveries (RR 3.7; CI 1.8 – 7.7).
- Of the 481 fetuses with accelerated growth, 291 (60.5%) were not LGA at last scan, and 5 of their deliveries was complicated by shoulder dystocia (RR 3.1; CI 1.2 – 7.9).

Conclusion

- LGA on late third trimester ultrasound scan is associated with an increased risk of shoulder dystocia.
- Accelerated growth on serial EFW scans can identify additional pregnancies at risk that were not LGA antenatally.