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Abstracts

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Customised twin specific vs singleton growth charts and SGA associated stillbirth risk

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Objective: Twin fetuses are born earlier and have slower growth than singletons. It is uncertain as to what degree this is pathological or a physiological adaptation. We set out to develop a customised chart for twin pregnancy and compare it with the corresponding singleton chart in their ability to assess stillbirth risk.

Design: Retrospective cohort study.

Methods: The cohort consisted of 7153 twin pregnancies with 14 306 twins, recorded routinely in UK hospitals in the GAP program. To derive customised coefficients, we excluded stillbirths and deliveries <34 weeks. We performed a mixed-effects linear regression analysis to derive coefficients for maternal height, weight, parity and ethnic origin and determined pregnancy specific optimal weight at 37 weeks. We compared the new customised standard for twins (GROW - T) with that for singletons (GROW – S) by calculating rate of SGA (<10th centile) and associated risk of stillbirth (SB) using generalised estimating equations.

Results: The same maternal physiological characteristics affect the twin weight standard as the singleton standard, and high BMI had similarly a significant negative effect on birthweight. According to the twin specific (GROW-T) standard, 13.4% of twins were SGA, while 44.2% were SGA by the singleton (GROW-S) standard. All cases designated SGA had a higher risk of stillbirth, but the association was stronger with GROW-T (RR 6.6, CI 3.4–12.7) than GROW-S (RR 2.7, CI 1.5–5.0). All cases SGA by GROW-T were also SGA by GROW-S, but 1674/2405 (69.6%) of twins were SGA by the singleton standard only, and these did not have an increased risk of stillbirth (RR 0.9, CI 0.4–2.0).

Conclusion: Use of a singleton standard for twins results in a three times higher SGA rate, without detecting additional cases at increased risk of stillbirth. The results suggest that use of a twin specific chart to monitor twin pregnancies is safe in recognising SGA associated stillbirth risk, and likely to result in fewer unnecessary investigations, interventions and maternal anxiety.