

SGA related stillbirth risk according to INTERGROWTH-21st vs GROW fetal weight standards

PP.0059

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Objective

While direct comparisons of INTERGROWTH 21st (IG21) and customised GROW *birthweight* standards have identified various [shortcomings](#) of the one-size-fits all model, there have been few comparisons of the *fetal weight* standard of the two approaches.

We set out to investigate the association between EFW-SGA by ultrasound estimated fetal weight (EFW) according to IG21 vs GROW and stillbirth risk at term.

Methods

- The cohort consisted of 220,065 term births which had one or more third trimester EFW. Scan Where more than one scan had been performed, the last before delivery was selected.
- The cohort included 269 stillbirths. 2 days were deducted from gest. age at delivery, as the average death-to-delivery interval.
- SGA (<10) rates were calculated according to IG21¹ and GROW² fetal weight standards. GROW was customised for maternal height, weight, parity and ethnic origin.
- The relative risk (RR) of stillbirth was analysed for SGA groups.

1. Stirnemann J, Villar J, Salomon LJ, et al. International estimated fetal weight standards of the INTERGROWTH-21st Project. *Ultrasound Obstet Gynecol.* 2017;49(4):478–86.

2. Gardosi J, Hugh O, Butler E, Ellson H. GROW Customised Centile Calculator v8.0.6.1 (UK). Birmingham, UK: Gestation Network; 2020. www.gestation.net

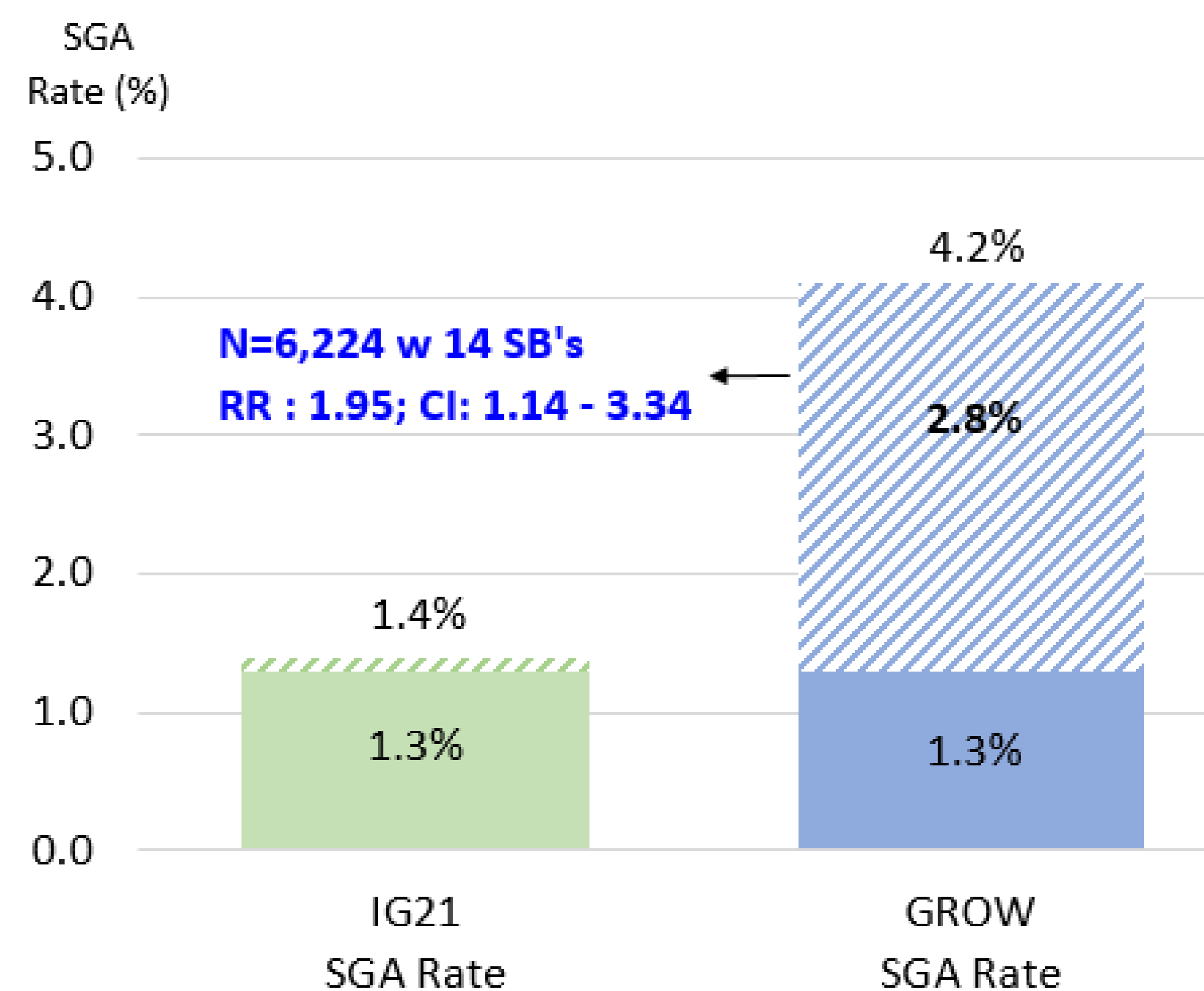
Table

	SGA by IG	SGA by GROW	
Classified as SGA, n (%)	3,096 (1.4)	9,145 (4.2)	
Stillbirths, n (/1000)	12 (3.9)	25 (2.7)	
	SGA by IG only	SGA by Both	SGA by GROW only
Classified as SGA, n (%)	175 (0.1)	2,921 (1.3)	6,224 (2.8)
Stillbirths, n (/1000)	1 (5.7)	11 (3.8)	14 (2.2)
Relative Risk (95% CI)*	4.96 (0.70-35.1)	3.27 (1.79-5.97)	1.95 (1.14 - 3.34)

Results (see Table and Figure)

- The median gestational age for last scan and birth were 36+6 and 39+3 days, respectively.
- The IG21 standard designated 3096 pregnancies with last EFW as SGA (1.4%), which including 12 stillbirths (RR 3.4 CI 1.9 – 6.0).
- Customised GROW standard identified 9145 (4.2%) EFWs as SGA, with 25 stillbirths (RR 2.4; CI 1.6 – 3.6).
- This included an additional 6224 (68.1%) SGA cases with 14 stillbirths that were not identified by IG21, and these also had an increased stillbirth risk (RR 2.0 CI 1.1 – 3.3).
- IG21 classified an additional 175 (5.7%) of EFWs as SGA, with 1 stillbirth (CI 0.7 – 35.1).

Figure SGA by IG-21 vs GROW and stillbirth rates



Summary

- The Intergrowth fetal weight standard fails to identify over two-thirds of cases that are SGA according to GROW and have a significantly increased risk of stillbirth.
- Cases designated SGA by IG21 and not by GROW do not have an increased risk of stillbirth