

Placental location and the accuracy of sonographic estimated fetal weight: a large retrospective cohort study

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Objectives

Whether placental location influences the direction and distribution of sonographic estimated fetal weight (sEFW) error versus actual birth weight.

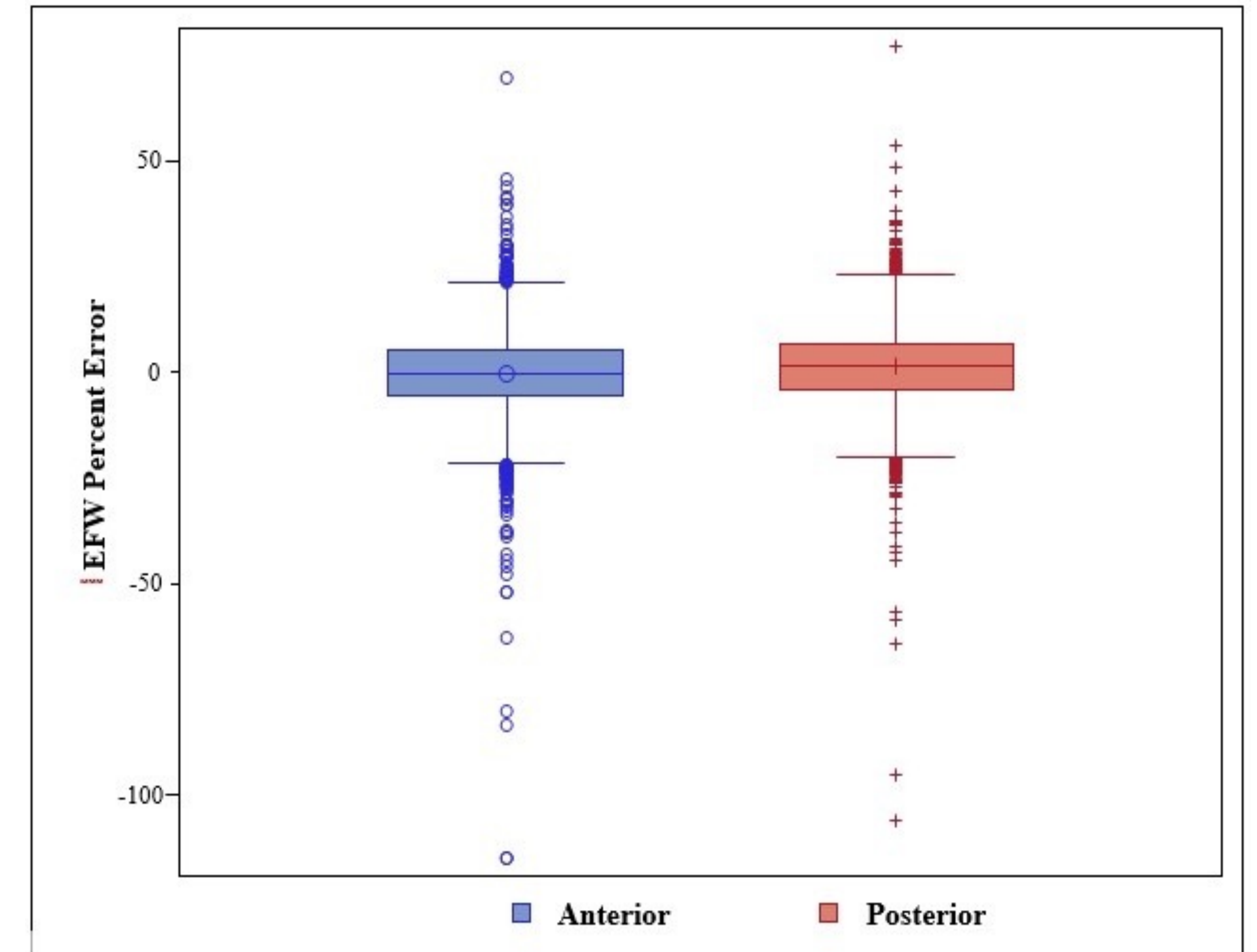
Methods

All singleton pregnancies with sEFW ≤ 14 days before delivery, single tertiary center, January 2012-March 2020. Placenta anterior or posterior. Primary outcome: percent error and estimates deviating $>10\%$ and $>15\%$ from birth weight ($>15\%$ pre-defined clinically significant); secondary: direction of error. Stratified by gestational age.

Results

- 17,824 women: 9,733 (54.6%) anterior, 8,091 (45.4%) posterior
- Strong agreement with birth weight ($r=0.93$, $p<0.001$); minimal bias ($0.48\% \pm 10.14\%$)
- Anterior underestimated ($-0.23\% \pm 8.85\%$), posterior overestimated ($+1.34\% \pm 11.44\%$), $p<0.001$
- Clinically significant underestimation ($>15\%$): 4.1% anterior vs 2.6% posterior ($p<0.001$)
- No difference before 32 weeks; significant thereafter, greatest at term >37 weeks ($p<0.001$)

Figure 1. EFW percent error by placental location.



Conclusions: Placental location influences sEFW accuracy - anterior underestimates, posterior overestimates, most pronounced at term. Overall accuracy remains high and routine adjustment is not warranted, but clinicians should be aware of this directional bias.