

Calibration of FetalHQ Z-scores in an institutional fetal speckle-tracking dataset

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ISUOG 2026
ePoster

1 OBJECTIVES

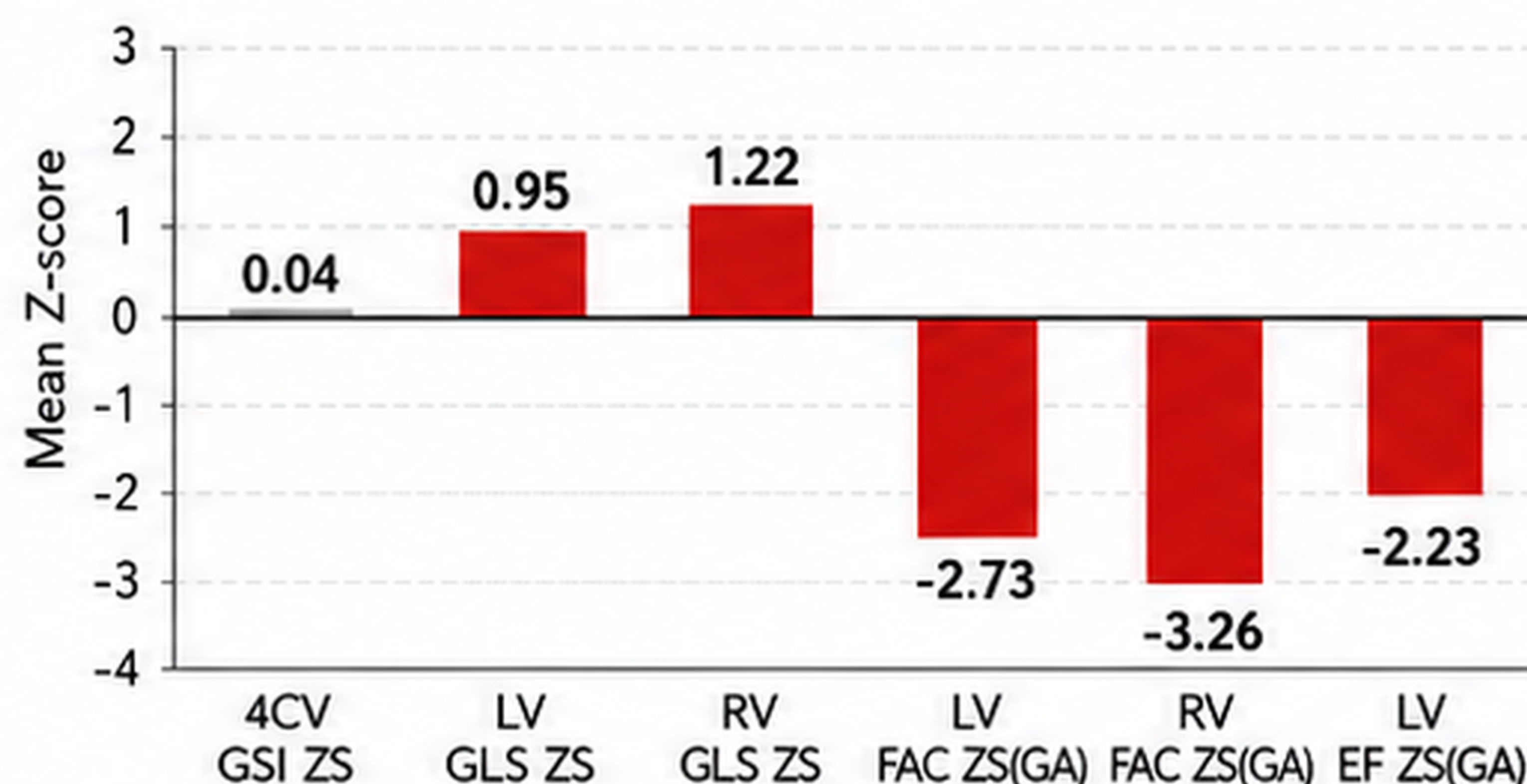
To verify whether built-in FetalHQ Z-scores for key functional indices follow the expected N(0,1) distribution in our population.

2 METHODS

- Retrospective dataset of 37 fetal speckle-tracking examinations.
- Gestational age range: 18+2 to 35+0 weeks.
- Quality-control windows were applied to the corresponding raw metrics:
 - GLS: -45% to -5%
 - FAC: 5% to 70%
 - EF: 20% to 90%
- For each Z-score, we report mean $\pm$ SD and the proportion within ± 1.96 .
- Expected calibration: mean ≈ 0 , SD ≈ 1 , and most values within ± 1.96 .

3 RESULTS

Observed Z-score calibration after quality control



Summary of Z-score calibration

Metric	n	Mean $\pm$ SD	% within ± 1.96
4CV GSI ZS	37	0.04 $\pm$ 1.74	68%
LV GLS ZS	26	0.95 $\pm$ 2.64	46%
RV GLS ZS	29	1.22 $\pm$ 2.06	38%
LV FAC ZS(GA)	25	-2.73 $\pm$ 2.24	48%
RV FAC ZS(GA)	25	-3.26 $\pm$ 2.25	20%
LV EF ZS(GA)	21	-2.23 $\pm$ 1.87	57%



Best calibrated metric

4CV GSI ZS was well centred:
mean 0.04 $\pm$ 1.74; 68% within ± 1.96 .



GLS metrics

LV GLS and RV GLS showed positive mean shifts and broad dispersion.



FAC / EF metrics

LV FAC, RV FAC and LV EF showed marked negative shifts, indicating poor calibration.



Overall interpretation

Several built-in FetalHQ Z-scores did not match the expected reference distribution in this institutional dataset.

4 CONCLUSIONS

- Several FetalHQ Z-scores, particularly FAC/EF and GLS, were not well calibrated to the expected N(0,1) reference distribution.
- 4CV GSI ZS showed the most acceptable centring among the assessed indices.
- Local verification and quality control should be considered before clinical interpretation or multicentre comparison.

TAKE-HOME MESSAGE



Built-in FetalHQ Z-scores should not be assumed to be universally calibrated. Institutional verification and QC are advisable before using these indices for clinical decisions or research comparisons.



Keywords: Reproducibility, Echocardiography, TEI index, Congenital heart defects.



Disclosures: No commercial or financial interests declared.