

EP09.49 Reproducibility of the global sphericity index (GSI) and 24-Segment SI in speckle tracking echocardiography analysis using *FetalHQ*

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Objectives: The aim of this study was to assess intra- and inter-observer variability in the measurements of the global sphericity index (GSI) and the 24-segment Sphericity Index in 2D speckle tracking echocardiography (STE) using FetalHQ software

Methods: The study included 58 pregnant women in their second trimester who underwent routine prenatal screening and in whom no fetal heart defects were diagnosed. Two operators performed 2D STE using the *FetalHQ* software to acquire 4-chamber cine-loops (4CV), followed by offline analysis. In 20 patients, the operators performed the analysis independently, while for 38 patients, the same operator performed the analysis on the same clip (without doing it consecutively). We calculated measurement reproducibility between operators and within two analyses performed by the same operator. For the 24-segment SI, data were presented for the basal (segment 1), apical (segment 3), and intermediate (segment 2) segments.

Results: The intra- and inter-observer correlation coefficients (ICC) along with the 95% confidence intervals (CI) are presented in Table 1. Excellent reproducibility and repeatability were achieved for GSI measurements. However, other SI parameters specific to the segments showed poor reproducibility. The results for the two extreme segments and the middle segment of each chamber are detailed in Table 1.

Conclusions: GSI measurements in the 4-chamber view demonstrate excellent reproducibility. However, the 24-segment SI analysis using *FetalHQ* is characterized by low reproducibility.

TABLE:
Results of the analysis (expansion of abbreviations in the text).

	Intraobserver variability (ICC)	95% CI	Interobserver variability (ICC)	95% CI
4CV GSI	0,94	0,85 - 0,97	0,99	0,98-0,99
LV SI Segment 1	0,05	0,06 - 0,46	0,43	0,13 - 0,66
LV SI Segment 12	0,56	0,18-0,8	0,39	0,09 - 0,62
LV SI Segment 24	0,31	0,13 - 0,66	0,34	0,25 - 0,41
RV SI Segment 1	0,39	0,06 - 0,7	0,23	0,06 - 0,5
RV SI Segment 12	0,46	0,04 - 0,74	0,44	0,16 - 0,66
LV SI Segment 24	0,3	0,08-0,63	0,26	0,06-0,53