

# LONGITUDINAL BEHAVIOR OF LEFT VENTRICULAR STRAIN IN SUBTYPES OF GROWTH-RESTRICTED FETUSES

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**Objectives:** To determine longitudinal behavior of cardiac left ventricle (LV) function throughout gestation in fetal growth restriction (FGR) subtypes, using 2D speckle tracking echocardiography (2D-STE).

## Methods:

- Global (GLO) and segmental LV longitudinal strain were serially measured in a cohort of consecutive fetuses diagnosed with FGR.
- Evaluations were performed at various points from diagnosis to delivery, with at least 2 measurements performed for each fetus, at least 4 weeks apart.
- All parameters were transformed into z-scores (Zs).
- FGR was classified into subtypes according to our local classification, based on fetal weight centile and Doppler parameters.
- A linear mixed model to analyze repeated measures was performed for each parameter to assess their behavior throughout gestation and compare evolution of Zs measurements between groups throughout pregnancy.

## Results:

- A total of 89 evaluations were obtained: 9 from small for gestational age (SGA) fetuses and 80 from FGR fetuses.
- Among FGR fetuses, 66 were stage I, 9 stage II, and 5 were stage III-IV.
- SGA and stage I FGR showed significantly higher values of LV GLO than stages II-IV.
- No statistically significant differences were found between SGA and FGR stage I for LV GLO behavior.

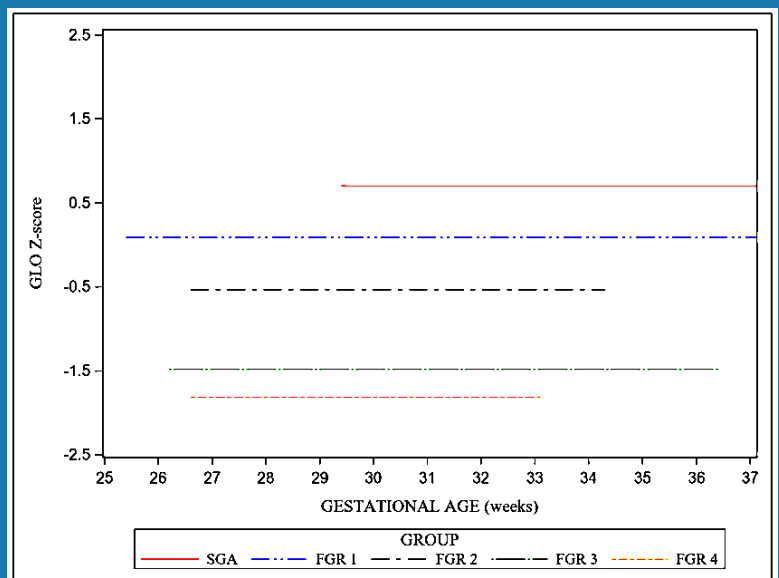


Figure. Longitudinal behavior of LV global longitudinal strain in subtypes of FGR fetuses

**Conclusions:** Severe FGR fetuses show significantly lower LV GLO strain than SGA fetuses, showing cardiac dysfunction early on related to the degree of hypoxia that is present.