

## The predictive role of aortic isthmus notch index in growth-restricted fetuses

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**Objective.** Fetal growth restriction (FGR) represents a leading cause of perinatal mortality and morbidity. Fetal aortic isthmus has been used to evaluate the grade of fetal compromise. To assess the correlation between the fetal Doppler depth of the notch index (AoI-NI) in aortic isthmus, the severity of FGR and the perinatal outcome.

**Materials and Methods.** This retrospective study was conducted on 148 singleton fetuses, divided into five groups: 85 were AGA – appropriate for gestational age; 28 SGA – small for gestational age (estimated fetal weight – EFW < 10<sup>o</sup> percentile); 18 FGR A (EFW < 3<sup>o</sup> percentile); 12 FGR B (EFW < 10<sup>o</sup> percentile and uterine artery pulsatility index – UtA-PI > 95<sup>o</sup> percentile); 5 FGR C (EFW < 10<sup>o</sup> percentile and umbilical artery PI > 95<sup>o</sup> percentile). The composite negative outcome

(preeclampsia, fetal distress, NICU hospitalization, fetal resuscitation and Apgar score < 7 at the 5<sup>th</sup> minute) was recorded.

**Results.** AoI-NI was significantly increased in the FGR C group with a median value of 0.26 (0.25-0.81), more than double that of the other groups, including FGR A and FGR B fetuses with median values respectively of 0.04 and 0.09. At the univariate and multivariate logistic regression, AoI-NI was significantly associated with the composite negative outcome with an Odds Ratio respectively of 33.14 (95%CI 1.93-567.94, p < 0.05) and 30.69 (95%CI 1.72-547.84, p < 0.05).

**Conclusions.** An increased AoI-NI could be associated with the most severe form of FGR. The increased aortic isthmus notch index was also significantly associated with the presence of the negative composite outcome.