

Predictivity of fetal aortic isthmus and umbilical artery Doppler for adverse perinatal outcome in FGR

Objectives

Doppler monitoring of FGR fetuses is important to detect **hemodynamic decompensation**. In this study; we compared fetal aortic isthmus

pulsatility index (AoI-PI) and cerebroplacental ratio (CPR) to predict neonatal outcome in FGR .

Methods

We studied two groups; group A: 50 cases were normal control and group B: 50 cases were FGR during: 28-37 weeks. Doppler assessment of the

umbilical artery done using a free loop while aortic isthmus assessed in the sagittal plane of the aortic arch just caudal to the left subclavian artery. **Doppler examination for cases was twice:** 1st visit was at the initial diagnosis of FGR and the 2nd visit was within the last 2 days before delivery. All cases were checked after delivery for Apgar score at 1,5 and 10 minutes also they were assessed as regard the admission to the neonatal intensive care unit (NICU).

Results

We found that the pulsatility indices of umbilical artery and aortic isthmus were higher in cases than controls at both visits.

We found also that gestational age at delivery, neonatal weight and Apgar score were lower in cases than controls. Incidences of preterm birth, cesarean section and neonatal intensive care admission were higher in cases than controls. The sensitivities of UA-PI and AoI-PI at the second visit in group B to predict adverse neonatal outcome were: 80.65% and 44.66% respectively. The specificities of UA-PI and AoI-PI at the second visit in group B to predict adverse neonatal outcome were: 52.63% and 62.11% respectively.

Conclusions

We found that abnormally high percentiles of the pulsatility indices of umbilical artery and fetal aortic isthmus were had association with adverse perinatal outcome in fetuses with FGR.

This may open the window for future studies about the implication of the fetal aortic isthmus Doppler in designation of FGR fetuses.

