

Delphi consensus definition of Fetal Growth Restriction: identifying fetuses at risk of neonatal morbidity

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Objective

This study aimed to identify fetuses with growth restriction at highest risk of neonatal morbidity

Methods

Design: Retrospective analysis (2015–2024)

Study population: 516 singleton pregnancies at a tertiary medical center

- Mid- and late-gestation ultrasounds assessed Doppler indices, fetal biometry, and growth velocity
- Second-trimester maternal serum soluble fms-like tyrosine kinase-1 (sFlt-1) and placental growth factor (PlGF)
- Placentas were evaluated for maternal vascular malperfusion (MVM) lesions (Amsterdam criteria)

The predictive performance of Delphi-defined fetal growth restriction (FGR) was compared with the percentile-based approach.

Four groups were analyzed: early- and late-onset Delphi FGR, small for gestational age (SGA; EFW <10th percentile) and a reference group

Outcome measures:

- Second-trimester serum sFlt-1 MoM, PlGF MoM, sFlt-1/PlGF ratio MoM.
- CAPO: stillbirth, neonatal mortality (<28 days), Apgar <7, umbilical artery pH <7.10, severe neonatal morbidity.
- MVM lesions

Results

- Delphi-defined FGR was associated with a significantly increased risk of CAPO (OR 4.00, 95% CI 2.53–6.33) compared with SGA (OR 1.44, 95% CI 0.58–3.63) and the reference group ($p < 0.001$).
- Early-onset FGR showed even a higher risk on CAPO, than late-onset FGR (OR 5.81, 95% CI 3.36–10.10 vs OR 1.95, 95% CI 0.94–4.04).
- Early-onset FGR was associated with lower PlGF MoM (0.22 vs 0.84, $p < 0.001$), higher sFlt-1/PlGF ratio MoM (2.18 vs 0.85, $p < 0.001$), and a higher prevalence of MVM lesions (61.6% vs 37.4%, $p < 0.001$) compared with the reference group.

Conclusions

The Delphi consensus definition identifies true FGR due to placental insufficiency and discriminates it from SGA. Implementation of Delphi criteria for FGR can provide valuable insight for antenatal counseling and the prediction of neonatal morbidity.