

The role of umbilical vein flow rate and foetal growth velocity in predicting iatrogenic preterm birth and adverse perinatal outcomes in a population of small foetuses

Daniele Farsetti¹, Moira Barbieri², Giulia Zamagni³, Lorenzo Monasta³, Barbara Vasapollo¹, Francesca Pometti¹, Herbert Valensise¹, Tamara Stampalija³

¹University of Rome Tor Vergata, Rome, Italy.

²Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy.

³Institute for Maternal and Child Health IRCCS "Burlo Garofolo", Trieste, Italy.

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Objective. Delphi consensus criteria for foetal growth restriction (FGR) definition have proven to be more accurate in predicting adverse perinatal outcomes (APO) compared to the definition based on estimated foetal weight (EFW) or abdominal circumference (AC) < 10th percentile. However, this definition still shows a suboptimal performance as a proportion of FGR remains undiagnosed. The aim of this study was to evaluate the capacity of umbilical vein blood flow (UVF) and foetal growth velocity (FGV) in predicting APO and iatrogenic preterm birth in a population of small foetuses, regardless of Delphi consensus criteria.

Materials and Methods. In this prospective multicentric observational study we enrolled women with a diagnosis of small for gestational age (SGA) or FGR. Foetal biometry and Doppler assessment, including UVF measurement, were col-

lected at the time of diagnosis. The FGV was derived from the difference between the EFW calculated in two consecutive sonographic evaluations. Multiple logistic regression models were estimated using UVF and FGV to predict APO and iatrogenic preterm birth.

Results. The study involved 57 SGA and 57 FGR. The multivariable logistic regression analyses showed that, after adjusting for diagnosis of FGR, UVF ≤ 0.65 MoM (aOR 3.5; 95%CI 1.0-11.8) and FGV ≤ 0.63 MoM (aOR 3.0, 95%CI 1.2-7.9) were associated with APO. Moreover, UVF ≤ 0.60 MoM (aOR 5.2, 95%CI 1.7-15.9), and FGV ≤ 0.63 MoM (aOR 3.6, 95%CI 1.1-12.6) were significant predictors of iatrogenic preterm birth.

Conclusions. UVF and FGV are independent predictors of iatrogenic preterm birth and APO in a population of small foetuses, regardless of the Delphi consensus criteria.