

Correlation between foetal growth velocity and birthweight in a cohort of late term singleton pregnancies

Roberto Nuredini ^{1,*}, Giulia Zamagni ², Camilla Fregona ¹, Carmelina Foti ¹, Stefania Zanini ¹, Gianpaolo Maso ¹, Giuseppe Ricci ^{1,3}, Tamara Stampalija ^{3,4}

¹ Department of Obstetrics and Gynaecology, Institute for Maternal and Child Health IRCCS Burlo Garofolo, Trieste, Italy.

² Clinical Epidemiology and Public Health Research Unit, Institute for Maternal and Child Health IRCCS Burlo Garofolo, Trieste, Italy.

³ Department of Medical Surgical and Health Sciences, University of Trieste, Trieste, Italy.

⁴ Unit of Fetal Medicine and Prenatal Diagnosis, Institute for Maternal and Child Health IRCCS Burlo Garofolo, Trieste, Italy.

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Objective. The aim was to investigate the impact of foetal growth velocity in different stages of pregnancy on birthweight.

Materials and Methods. This is a retrospective observational study which included women with late-term singleton pregnancies who delivered between 40+6 and 42+1 weeks from 2021 to 2023 and underwent ultrasound scans at 20, 30 and after 40 weeks. The analysis focused on daily estimated foetal weight (EFW) increase between 20 and 30 and 30 and 41 weeks and its correlation with birthweight, expressed in grams and percentiles. A linear univariate regression analysis was performed.

Results. We collected 414 patients. The correlation between EFW daily increase and birthweight between 20-30 and 30-41 weeks was R 0.42 and 0.61 ($p < 0.01$). At univariate linear

regression, EFW daily increase between 30-41 weeks had a major impact on birthweight percentile than that between 20-30 weeks (coeff 4.67 and 1.01, $p < 0.001$). When considering birthweight <10th pc, only EFW daily increase between 30-41 weeks was significantly associated (coeff 0.57, $p = 0.003$). For birthweight > 90th pc, the association was higher for EFW daily increase between 20-30 than 30-41 weeks (coeff 2.02 and 1.43, $p 0.02$ and 0.003).

Conclusions. The foetal growth velocity in third trimester has a major impact on birthweight than that between the second and third trimester, and this is particularly true for small for gestational age babies. However, in case of large for gestational age neonates, growth velocity between 20-30 weeks seems to have an equally or even higher impact on birthweight than that between 30-41 weeks.