Levels of Glucagon-like Peptide 1 are Decreased in Macrosomic Neonates from Non-Diabetic Mothers

Authors
Ayla Aktulay¹, Yaprak Engin-Ustun¹, Ozlem Gunduz Yasar¹, Canan Yilmaz², Salim Erkaya¹, A. Seval Ozgu-Erdinc³

Affiliations
1 Obstetrics and gynecology, University of Health Sciences, Zekai Tahir Burak Health Practice Research Center, Ankara, Turkey
2 Biochemistry, Gazi Universitesi Tip Fakultesi, Ankara, Turkey
3 Perinatology, University of Health Sciences, Zekai Tahir Burak Health Practice Research Center, Ankara

Glucagon-like peptide 1 (GLP-1) is a gut-derived peptide with insulin-like effects. Our aim was to analyze cord blood GLP-1 levels of macrosomic and appropriate-gestational-age (AGA) neonates from non-diabetic mothers. A case-control study was conducted with 22 term macrosomic neonates (birth weight ≥ 4000 g) and 22 AGA (birth weight > 10th percentile and < 4000 g) pregnancies. Cord blood GLP-1 levels of neonates were measured. There were no significant differences in maternal age, gestational age and gravida between the two groups. Umbilical cord blood GLP1 levels were significantly lower in macrosomic neonates (6.9 ± 2.9 pg/mL) compared with control group (10.3 ± 3.7 pg/mL) (p = 0.002). Binary logistic regression analysis showed only the maternal BMI to be an independent statistically significant predictor of macrosomia (odds ratio = 2.459; 95% CI, 1.170–5.170; P = 0.018). The results of our study revealed decreased GLP-1 levels in macrosomic neonates, and maternal BMI was an independent predictor of macrosomia.