Glucose and lipid metabolism in small for gestational age infants at 48 hours of age

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Objective. To study the consequences of low birth weight on glucose and lipid metabolism 48 hours after delivery. Methods. We studied 136 small for gestational age (SGA) and 34 appropriate for gestational age (AGA) term neonates who were born in Santiago, Chile. Prefeeding venous blood was obtained 48 hours after birth for determination of glucose, free fatty acids, ?-hydroxy butyrate, insulin, C-peptide, leptin, sex hormone-binding globulin, insulin-like growth factor-binding protein-1 (IGFBP-1), and cortisol. Results. SGA newborns had lower glucose (SGA versus AGA, median [interquartile range]: 3.6 mmol/L [2.9-4.1 mmol/L] vs 3.9 mmol/L [3.6-4.6 mmol/L]) and insulin levels (31.3 pmol/L [20.8-47.9 pmol/L] vs 62.5 pmol/L [53.5-154.9]) than AGA infants, and they had higher glucose/insulin ratios (13.9 mg/dL/uIU/mL [8.6-19.1 mg/dL/ uIU/mL] vs 8.2 mg/dL/uIU/mL [4.6-14.1 mg/dL/uIU/mL]). SGA infants also had higher levels of IGFBP-1 (5.1 nmol/L [4.4-6.7 nmol/L] vs 2.9 nmol/1 [1.4-4.2 nmol/L]