

The effect of plurality and antenatal corticosteroid exposure on neonatal hypoglycemia: a retrospective cohort study

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Abstract

Objective: To determine whether preterm twins who receive antenatal corticosteroid (ACS) are at increased risk for developing neonatal hypoglycemia. **Design:** A retrospective cohort study **Setting:** Single university-affiliated tertiary referral center **Population:** Indicated and spontaneous preterm births (24+0-36+6 weeks) at a single center between 2011-2018. The study population included 3 groups matched for gestational age at delivery and birth weight: 1. Twin neonates who received a course of ACS 1-7 days before birth (n=266); 2. Twins who did not receive ACS at that time interval (n=266); and 3. Singletons receiving ACS 1-7 days before birth (n=266). **Methods:** The rate of neonatal hypoglycemia was determined. Parametric, non-parametric statistical methods, and regression analysis, were employed. **Main outcome measures:** Neonatal hypoglycemia (<40 mg/dL) within the first 24-h and 48-h of life. **Results:** The rate of neonatal hypoglycemia during the first 24-h of life was significantly higher in singletons exposed to ACS compared to twins not exposed to ACS (p=0.019) and in twins exposed to ACS compared to twins not exposed to ACS (p=0.047). The rate of neonatal hypoglycemia was almost identical between twins and singletons exposed to ACS (40.6% vs. 42.1%, p=0.72). Regression analysis revealed that exposure to ACS (p=0.027) and birth weight (p=0.009) were independently associated with neonatal hypoglycemia after adjustment for maternal age, maternal BMI, gravidity, GDM diagnosis, and GA at delivery. The rate of neonatal hypoglycemia between 24-48 hours after birth did not differ significantly among groups (p=0.068). **Conclusions:** Exposure to ACS, rather than plurality, is associated with short-lived neonatal hypoglycemia

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