

Background

Late preterm antenatal corticosteroids (ACS) in the late preterm period (34⁺⁰-36⁺⁶ weeks' gestation) have been shown to reduced respiratory morbidity in singleton pregnancies.
The effects of late preterm ACS in twin pregnancies are less well studied.

Objective

Our objective was to compare neonatal outcomes in late preterm twin pregnancies with and without exposure to ACS.

Materials & Methods

Study design:
Propensity score analysis using a large retrospective birth cohort.

Population:
940 twin pregnancies delivering at 34⁺⁰-36⁺⁶ weeks' gestation
January 2017 - June 2024
11 hospitals in the USA
Participating in a quality improvement program (OB COAP)

Intervention:
One or more doses of ACS at >=33 weeks' gestation

Outcomes:
Neonatal outcomes included respiratory complications, neonatal unit admission (NICU), and hypoglycemia.

Statistical analysis:
Propensity score analysis weighting for maternal, practitioner, hospital, and fetal/neonatal factors, including chorionicity, gestational age at birth, and birthweight.

Antenatal Corticosteroids were associated with a lower risk of respiratory complications but no differences in NICU admission or hypoglycemia in late preterm twins

Results

Of 940 twin pregnancies delivering late preterm, 602 (64.0%) were dichorionic and (326) 34.7% were monochorionic

376 (40.1%) received ACS at >=33 weeks' gestation

Table 1. Neonatal outcomes were similar before adjustment with propensity score analysis

	Respiratory Complications	Continuous Positive Airway Pressure	Hypoglycemia	NICU
	(%)	(%)	(%)	(%)
ACS at >=33weeks (N=376)	43.9	46.6	38.3	73.1
No ACS at >=33 weeks (N=564)	40.2	53.6	35.1	58.0

Results

Table 2. After propensity score adjustment for confounding factors, neonatal respiratory complications were less common in twin pregnancies that received ACS at >=33 weeks.

	Respiratory Complications	Continuous Positive Airway Pressure	Hypoglycemia	NICU Admission
	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
ACS at >=33weeks (N=376)	0.72 (0.52, 0.98)	1.01 (0.71,1.42)	1.13 (0.82, 1.55)	1.03 (0.74, 1.42)
No ACS at >=33 weeks (N=564)	Ref	Ref	Red	Ref

The propensity score model included parity, age, level of prenatal care, prior cesarean, IVF, race/ethnicity, gestational age at delivery, gestational diabetes, chronic hypertension, BMI, substance use, autoimmune disease, re-pregnancy diabetes, nicotine use, chorionicity/amionicity, percent discrepancy in baby weight, low baby weight for either baby, type of primary health insurance payor, postal code rate of steroid use in singleton pregnancies, provider rate of steroid use in singleton pregnancies, type of practitioner at admission, hospital, year of delivery.

Conclusion

Antenatal corticosteroids in twin pregnancies delivering at 34⁺⁰-36⁺⁶ weeks' gestation were associated with a lower risk of respiratory complications but no differences in NICU admission or hypoglycemia.

More research is needed to determine the effects of late preterm steroids in twins by gestational week at delivery and after labour versus planned caesarean birth.

For questions or any information about OB COAP contact ksitcov@qualityhealth.org