

# Late Antenatal Corticosteroid Treatment in Twin Pregnancies and Neonatal Outcomes: A Systematic Review and Meta-Analysis

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**Objective:** To examine the impact of administering late-preterm corticosteroids on neonatal outcomes in twin pregnancies.

**Study Design:** A systematic literature search was conducted in four databases from 2000-May 2024. Studies reporting on neonatal outcomes in twin pregnancies at risk of preterm birth receiving corticosteroid treatment for fetal lung maturity at the gestational age (GA) of 34 weeks and 0 days to 36 weeks and 6 days were included. Studies involving participants with specific conditions (twin-to-twin transfusion syndrome and intrauterine fetal demise of one fetus) were excluded. A random effect model was used to generate weighted mean differences (MD) and odds ratio (OR) with their 95% confidence intervals (CI). Heterogeneity was assessed using the I<sup>2</sup> value. The Newcastle-Ottawa Scale (NOS) was used for risk of bias assessment. The primary outcome was incidence of respiratory distress syndrome (RDS). Additional outcomes included need for mechanical ventilation, continuous positive airway pressure (CPAP), and neonatal hypoglycemia. Comparison groups included those receiving steroids vs those not.

**Results:** 267 abstracts were screened of which 15 full-texts were fully reviewed. A total of 3 studies were included in the final analysis which comprised 489 twin pregnancies receiving steroids and 2807 not receiving steroids. There were no differences in obstetric characteristics between groups, including maternal age, body mass index, preeclampsia, diabetes, and type of twin chorionicity. GA at delivery was earlier in the steroids group (MD -0.91, 95% CI [-1.50, -0.32]). For neonatal outcomes, there were no significant differences in incidence of RDS and need for mechanical ventilation between groups. There was higher incidence of CPAP use (OR 2.69, 95% CI [1.47, 4.92]) and neonatal hypoglycemia (OR 2.05, 95% CI [1.18, 3.56]) in the steroids group.

**Conclusion:** This study found that antenatal corticosteroid treatment during the late-preterm period in twin pregnancies was not associated with reduced neonatal respiratory complications.