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Steroids at 34 to 36 Weeks' and Before Term Cesarean Decrease Respiratory Distress Syndrome

Clinical Question

Should antenatal steroid treatment be used for women at risk of late premature delivery or women undergoing planned cesarean delivery?

Bottom Line

For women admitted for imminent premature delivery at 34 to 36 weeks of gestation, one or two doses of betamethasone or dexamethasone (8 to 12 mg) decrease the likelihood of neonatal respiratory distress syndrome and shorten lengths of stay in the intensive care unit. One or two doses given to women 48 hours before a planned cesarean delivery at term are also effective in decreasing respiratory distress. Neonatal hypoglycemia is increased, but, as shown in a separate study, there is no long-term harm with treatment, at least up to six to eight years of age (*Pediatrics*. 2016;138(4):e20160947). (Level of Evidence = 1a)

Synopsis

Although steroids are clearly beneficial when used before 34 weeks' gestation, their benefit in the 34- to 36-weeks' gestation period, as well as before cesarean delivery at 37 to

38 weeks' gestation, is not as clear. To identify all randomized controlled trials, these researchers searched six databases, including Cochrane Central, for studies comparing steroid treatment with placebo or no treatment of pregnant women at 34 weeks' gestation or more, including women at risk of late premature delivery or before planned cesarean delivery at term (at least 37 weeks' gestation). Two authors independently selected articles for inclusion and abstracted the data. The analysis included six trials with a total of 5,698 singleton pregnancies. Most of the studies (four of six) were deemed to be at low risk of bias.

The main outcome—the incidence of severe respiratory distress syndrome—was significantly lower in infants of mothers who received steroid treatment at 34 weeks' gestation or later (1.06% vs. 1.91%; number needed to treat = 118). The overall likelihood of respiratory distress syndrome was lower as well (number needed to treat = 58), as were other markers of respiratory distress, including transient tachypnea, use of surfactant or mechanical ventilation, and duration of neonatal intensive care (−7.64 days). The benefits were also seen in women who were treated before a planned cesarean delivery. However, the likelihood of neonatal hypoglycemia also was higher (risk ratio = 1.61; 95% confidence interval, 1.38 to 1.87). There was no heterogeneity among the studies for the main outcome. Publication bias was not assessed.

Study design: Meta-analysis (randomized controlled trials)

Funding source: Self-funded or unfunded

Setting: Inpatient (ward only)

Reference: Saccone G, Berghella V. Antenatal corticosteroids for maturity of term or near term fetuses: systematic review and meta-analysis of randomized controlled trials. *BMJ*. 2016;355:i5044.

ALLEN F. SHAUGHNESSY, PharmD, MMedEd
Professor of Family Medicine
Tufts University
Boston, Mass. ■