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Q/ What are the benefits/risks of giving betamethasone to women at risk of late preterm labor?

EVIDENCE-BASED ANSWER

A/ GIVING BETAMETHASONE to women at risk for delivery between 34 weeks 0 days and 36 weeks 6 days can lower by almost 40% the incidence of transient tachypnea of the newborn, severe respiratory distress syndrome, and the use of surfactant (strength of recommendation

[SOR]: A, systematic review of randomized controlled trials [RCTs]).

Betamethasone may increase neonatal hypoglycemia, but the hypoglycemia isn't associated with a prolonged hospital stay or other negative outcomes.

Evidence summary

A 2016 systematic review and meta-analysis of 3 RCTs that included 3200 women with late preterm labor (between 34 weeks 0 days and 36 weeks 6 days) found that women who were given betamethasone had a significantly lower incidence of transient tachypnea of the newborn (number needed to treat [NNT]=37; relative risk [RR]=0.72; 95% confidence interval [CI], 0.56-0.92), severe respiratory distress syndrome (NNT=114; RR=0.60; 95% CI, 0.33-0.94), and use of surfactant (NNT=92; RR=0.61; 95% CI, 0.38-0.99).¹

A composite outcome measure also favors betamethasone

In addition to these 3 outcomes, the largest RCT in the meta-analysis evaluated a composite outcome and found that betamethasone improved it by 20%. The RCT, comparing 1427 women in the experimental arm with 1400 controls, found benefit to administering 12 mg betamethasone intramuscularly every 24 hours for 2 days for women at high risk of late preterm delivery.² Enrollment criteria included women with 3 cm dilation or 75% effacement, preterm premature rupture of membranes, or a planned delivery scheduled in the late preterm period.

The primary outcome was a composite score based on one or more of the following within 72 hours after birth: continuous positive airway pressure or high-flow nasal cannula for at least 2 continuous hours, supplemental oxygen with a fraction of inspired oxygen of 0.30 or more for at least 4 continuous hours, mechanical ventilation, stillbirth or neonatal death, or the need for extracorporeal circulation membrane oxygenation. The betamethasone group had 165 women (11.6%) with the primary outcome compared with 202 (14.4%) in the control arm (NNT=34; RR=0.80; 95% CI, 0.66-0.97; $P<.02$).

Neonatal hypoglycemia may increase, but not dangerously

The same RCT explored the risks of late preterm betamethasone. There was no increase in chorioamnionitis nor neonatal sepsis in the betamethasone group.² Although neonatal hypoglycemia increased (24% vs 15%; number needed to harm=11.1; RR=1.60; 95% CI, 1.37-1.87; $P<.001$), no increase was seen in intermediate care nursery or ICU stays (41.8% vs 44.9%; RR=0.93; 95% CI, 0.85-1.01; $P=.09$) nor length of hospital stay (7 vs 8 days; $P=.20$).

Three letters to the editor questioned whether hypoglycemia from late-term

corticosteroids may lead to long-term neurocognitive delays.³ The authors responded that meta-analyses of RCTs haven't found an association between antenatal steroid use and neurocognitive delay and that studies that have found an association between hypoglycemia and neurocognitive delay looked at profound and prolonged hypoglycemia, which wasn't seen in the late preterm beta-methasone study.

Recommendations

Both the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine have published recommendations supporting corticosteroids for threatened late preterm delivery with certain caveats.⁴⁻⁶ Because of a lack of evidence, maternity care providers shouldn't give corticosteroids for threatened late preterm delivery

to women with multiple gestation, diabetes, previous exposure to steroids during pregnancy, or pregnancies with major nonlethal fetal malformations.⁴⁻⁶ Evidence doesn't support tocolysis when steroids are given in the late preterm period.^{4,5}

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References

1. 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;355:5044.
2. Gyamfi-Bannerman C, Thom E, Blackwell S, et al. Antenatal betamethasone for women at risk for late preterm delivery. *N Engl J Med*. 2016;374:1311-1320.
3. Gyamfi-Bannerman C, Thom E. Antenatal betamethasone for women at risk for late preterm delivery. *N Engl J Med*. 2016;375:486-487.
4. American College of Obstetricians and Gynecologists. Committee Opinion No. 677: Antenatal Corticosteroid Therapy for Fetal Maturation. *Obstet Gynecol*. 2016;128:e187-e194.
5. Society for Maternal-Fetal Medicine (SMFM) Publications Committee. Implementation of the use of antenatal corticosteroids in the late preterm birth period in women at risk for preterm delivery. *Am J Obstet Gynecol*. 2016;215:B13-B15.
6. American College of Obstetricians and Gynecologists. Practice Bulletin No. 159: Management of Preterm Labor. *Obstet Gynecol*. 2016;127:e29-e38.

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Once-weekly Glucagon-like Peptide-1 Receptor Agonists

This supplement to *The Journal of Family Practice* provides an overview of the role of once-weekly glucagon-like peptide-1 receptor agonist (GLP-1 RA) therapy in type 2 diabetes (T2D).

Topics include:

- Burden of illness in patients with T2D
- Pharmacokinetic properties and the mode and mechanism of action of GLP-1 RAs
- Safety of GLP-1 RAs
- Clinical efficacy of GLP-1 RAs
- Implications of cardiovascular outcomes trials in T2D

To read the supplement go to <http://www.mdedge.com/JFPOnline/GLP1RA>

