Start offering antenatal corticosteroids to women delivering between 34 0/7 and 36 6/7 weeks of gestation to improve newborn outcomes

Consider 3 options for your practice. Offer antenatal corticosteroids to: 1) all women at high risk for late preterm delivery, or 2) women scheduled for a cesarean delivery for an obstetric indication between 34 0/7 and 36 6/7 weeks of gestation, or 3) women at high risk for late preterm delivery whose newborns are most likely to benefit from treatment, those women at 34 0/7 to 35 6/7 weeks of gestation.

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Antenatal corticosteroid treatment prior to preterm birth is the most important pharmacologic intervention available to obstetricians to improve newborn health. Antenatal corticosteroids reduce preterm newborn morbidity and mortality.1 The American College of Obstetricians and Gynecologists (ACOG) recently has summarized updated recommendations for the use of antenatal steroid treatment.2

ACOG guidance includes:
• “A single course of corticosteroids is recommended for pregnant women between 24 0/7 weeks and 33 6/7 weeks of gestation, including for those with ruptured membranes and multiple gestations.” This guidance is supported by many high-quality trials and meta-analyses.3
• A single course of corticosteroids “may be considered for pregnant women starting at 23 0/7 weeks of gestation who are at risk of preterm delivery within 7 days.”
• “A single repeat course of antenatal corticosteroids should be considered in women who are less than 34 0/7 weeks of gestation who have an imminent risk of preterm delivery within the next 7 days and whose prior course of antenatal corticosteroids was administered more than 14 days previously.” A repeat course of corticosteroids could be considered as early as 7 days from the prior dose.
• No more than 2 courses of antenatal steroids should be administered.

An important new ACOG recommendation is:
• “A single course of betamethasone is recommended for pregnant women between 34 0/7 and 36 6/7 weeks of gestation at risk

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The recommendation to offer a single course of betamethasone for pregnant women between 34 0/7 and 36 6/7 weeks of gestation at risk for preterm birth has not been embraced enthusiastically by all obstetricians. Many experts have emphasized that the known risks of late preterm betamethasone, including neonatal hypoglycemia and the unknown long-term risks of treatment, including suboptimal neurodevelopmental, cardiovascular, and metabolic outcomes should dampen enthusiasm for embracing the new ACOG recommendation. Experts also emphasize that late preterm newborns are less likely to benefit from antenatal corticosteroid treatment than babies born at less than 34 weeks. Hence, many late preterm newborns will be exposed to a potentially harmful intervention and have only a small chance of benefiting from the treatment.

Many neonatologists believe that for the newborn, the benefits of maternal corticosteroid treatment outweigh the risks. In a 30-year follow-up of 534 newborns participating in antenatal corticosteroid trials, treatment had no effect on body size, blood lipids, blood...
pressure, plasma cortisol, prevalence of diabetes, lung function, history of cardiovascular disease, educational attainment, or socioeconomic status. Corticosteroid treatment was associated with increased insulin secretion in response to a glucose load. In this study, the mothers received treatment at a median of 33 weeks of gestation and births occurred at a median of 35 weeks. Hence this study is relevant to the issue of late preterm corticosteroid treatment.

Balancing risks and benefits is complex. Balancing immediate benefits against long-term risks is most challenging. Regarding antenatal steroid use there are many unknowns, including optimal dose, drug formulation, and timing from treatment to delivery. In addition we need more high-quality data delineating the long-term effects of antenatal corticosteroids on childhood and adult health.

Consider these 3 options for your practice
As noted, the Antenatal Late Preterm Steroids trial investigators are pursuing long-term follow-up of the children born after maternal treatment with antenatal glucocorticoids. Both ACOG and the Society for Maternal-Fetal Medicine (SMFM) recommend administration of antenatal glucocorticoids to women at high risk for late preterm delivery. However, since some experts are concerned that a great number of babies born late preterm will have been exposed to glucocorticoids, whose long-term risks are not well known, with only a few babies having a modest short-term benefit, 3 options could be considered for your clinical practice.

Option 1
Follow the ACOG and SMFM suggestion that all women with a high risk of late preterm birth be offered antenatal corticosteroids. Counsel the mother and family about the potential risks and benefits and involve them in the decision.

Two alternative options are to limit antenatal corticosteroid treatment to subgroups of late preterm babies most likely to benefit from treatment, those born by cesarean delivery and those born at the earliest gestational ages.

Option 2
Limit the use of antenatal corticosteroids in the late preterm to women who are scheduled for a cesarean delivery for an obstetric indication between 34 0/7 weeks and 36 6/7 weeks of gestation. This approach greatly reduces the number of babies born in the late preterm that will be exposed to antenatal corticosteroids and focuses the treatment on a subset of babies who are

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certain to be born preterm and most likely to benefit.

**Option 3**

Limit the use of antenatal corticosteroids to women at high risk for preterm birth whose newborns are most likely to benefit from treatment—women at 34 0/7 to 35 6/7 weeks of gestation. Neonates born in the 34th or 35th week of gestation are at higher risk for morbidity than those born in the 36th week of gestation and are likely to derive the greatest benefit from antenatal corticosteroid treatment.3,12

**My advice**

Yogi Berra advised, “It is tough to make predictions, especially about the future.” Although ACOG and SMFM have recommended administration of glucocorticoids to women at high risk for late preterm birth, many experts caution that until the long-term effects of antenatal corticosteroids are better characterized we should limit the use of corticosteroids in the late preterm.5,6,13 My prediction is that long-term follow-up studies will not document significant adverse effects of one course of late preterm antenatal glucocorticoid treatment on children. My advice is to start offering antenatal corticosteroids to some women at high risk for late preterm delivery. 

Dr. Barbieri reports no financial relationships relevant to this article.

**References**