A dilemma of antenatal corticosteroids for long-term consequences

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A dilemma of antenatal corticosteroids for long-term consequences

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TO THE EDITORS:

Antenatal corticosteroids (ACS) are known to accelerate fetal lung maturation and prevent preterm neonatal mortality, respiratory distress syndrome, and brain injury. The ACOG expands recommendations for use of ACS to late preterm and early term deliveries.\(^1\) Under such a guideline, the proportion of infants who are exposed to synthetic corticosteroids has substantially increased. In the setting of a large infant population involved, it is imperative to evaluate the long-term safety of ACS, especially after a population-based cohort study that reported a hazard ratio of 1.47 of any mental or behavioral disorder in children born at term who were exposed to ACS.\(^2\)

For this purpose, Osteen et al.\(^3\) recently determined the long-term outcomes of term-born children ≥5 years old who were born to mothers receiving ACS, compared to controls whose mothers were also evaluated for threatened preterm labor but did not receive ACS. They found that the former babies have increased odds of being in a lower growth percentile than those not exposed; rates of diagnoses such as asthma, developmental delay, and attention deficit disorders were not different. This study indicates a need for more judicious use of ACS in women who may not be likely to deliver until term. However, this study raises some important issues which should be addressed.

There were statistically significant differences between the two groups for their birth characteristics regarding birth length, head circumference, and birth weight. The authors said none of these differences were clinically significant. In that case, why is the weight percentile (<10%) difference between the two infant groups clinically significant, considering no statistically significant difference for height/length percentile (<10%)? Furthermore, the retrospective study design could not exclude the confounding factors of the mothers.\(^4\) For example, for the ACS exposed group, mothers were younger, and had higher rates of diabetes and hypertensive disorders. The abnormal pregnancy events that lead clinicians to administer steroids might also predispose the exposed children to have a lower growth percentile. This study lacked
information about steroid type, dosing, or timing of exposure, making it impossible to
determine whether these factors were relevant.

Nevertheless, we agree with Osteen et al. that although benefits of ACS outweigh risks
in those vulnerable infants, this may not be suitable for all infants. Continued efforts to
select true high-risk cases among women considered to be at risk for preterm labor to
ensuring that ACS therapy is offered with more benefit than harm (Figure).

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Figure legend

FIGURE Antenatal corticosteroids treatment for women with threatened preterm labor.
Figure

Women considered at risk for preterm labor

Evaluation (Symptoms, ultrasound, biomarkers, e.g.)

Women with true high risk for preterm deliveries within 1 week

Antenatal corticosteroids

Women with low risk for preterm deliveries

Follow-up