A dilemma of antenatal corticosteroids for long-term consequences

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 American College of Obstetricians and Gynecologists has expanded its recommendations for the use of ACS to late preterm and early term deliveries. Under such guidelines, the proportion of infants who are exposed to synthetic corticosteroids has substantially increased. In the setting of a large infant population being 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.

For this purpose, Osteen et al recently determined the long-term outcomes in term-born children ≥ 5 years old who were born to mothers receiving ACS compared with 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; the 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 that should be addressed. There were statistically significant differences between the 2 groups for their birth characteristics regarding birth length, head circumference, and birthweight. The authors said none of these differences were clinically significant. In that case, considering no statistically significant difference for height or length percentile, why is the weight percentile (<10%) difference between the 2 infant groups clinically significant (<10%)? Furthermore, the retrospective study design could not exclude the confounding factors of the mothers. For example, for the ACS-exposed group, the 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 though the benefits of ACS outweigh the risks in those vulnerable infants, this may not be suitable for all infants. Continued efforts are needed to select true high-risk cases among women considered to be at risk for preterm labor to ensure that ACS therapy is offered with more benefit than harm (Figure).

Yu Yang, BSc
Guangzhou Women and Children’s Medical Center
Guangzhou Medical University
Guangdong Provincial Clinical Research Center for Child Health
Guangzhou, China

Dong-Zhi Li, MD, PhD
Guangzhou Women and Children’s Medical Center
Guangzhou Medical University
Guangdong Provincial Clinical Research Center for Child Health
Guangzhou, China

Prenatal Diagnostic Center
Guangzhou Women and Children’s Medical Center
Jinsui Rd. 9, Zhujiang New Town
Guangzhou 510623, China
lidongzhi2013@aliyun.com

The authors report no conflict of interest.

No funding was obtained for this work.

REFERENCES

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FIGURE
Antenatal corticosteroids treatment for women with threatened preterm labor

Women considered at risk for preterm labor

Evaluation (Symptoms, ultrasound, biomarkers, etc)

Women with true high risk for preterm deliveries within 1 week

Women with low risk for preterm deliveries

Antenatal corticosteroids

Follow-up