Analysis of Factors Contributing to Antenatal Corticosteroid Administration in Threatened Preterm Labor

Bode, Leah[1]; McKinzie, Alexandra[1]; Gidia, Nadia[2]; Ibrahim, Sherrine[2], Haas, David[2]

[1]Indiana University School of Medicine; [2]Indiana University School of Medicine, Department of Obstetrics and Gynecology

Introduction: Antenatal corticosteroids (ACS) are recommended for pregnant persons who are between 24 and 36+6/7 weeks' gestational age (GA) and at risk for imminent delivery within 7 days. Many individuals diagnosed as having threatened preterm labor (tPTL) are given ACS but do not deliver until they reach term. This study aimed to describe characteristics of those seen for tPTL who receive ACS to better understand clinical decision-making.

Methods: This retrospective cohort study consisted of mothers seen in triage at Eskenazi Hospital in 2021 for tPTL during pregnancy. Multiple demographic variables were evaluated against the primary outcome of ACS administration including maternal age, race/ethnicity, and prior preterm delivery, as well as obstetrical variables such as cervical dilation, effacement, membrane rupture, and tocolytic administration.

Results: After exclusions, a cohort of 290 pregnant people with 372 unique encounters remained. The average maternal age was 26.7, and 15.6% of patients had a history of prior preterm birth. 107 patients in 111 encounters received ACS, which were associated with lower BMI, greater cervical dilation, greater effacement, membrane rupture, and more frequent contractions (all $p<0.01$). The mean GA at triage was 33.5 weeks. Logistic regression, adjusting for significant factors in the univariable analysis, found that BMI (OR 0.93, 0.89-0.97), cervical dilation (OR 1.34, 1.07-1.71), and cervical effacement (OR 1.02, 1.01-1.03) were significantly associated with giving ACS. 44% of those receiving ACS delivered within 7 days, compared to 11% of those who did not receive ACS ($p<0.001$).

Conclusion: Greater cervical dilation and effacement and a lower BMI were associated with ACS administration, though most patients receiving ACS still did not deliver within 7 days. These findings will be further categorized and used to develop a clinical decisional model for administering ACS in those likely to imminently deliver preterm.