Severe maternal morbidity associated with cesarean delivery in the periviable period

Megan L. Jiang BS, BA1; Amanda Baucom, MD2; Emily DeFranco DO, MS3; Robert M. Rossi, MD3

1Medical Student, University of Cincinnati College of Medicine; 2University of Cincinnati, Department of Obstetrics and Gynecology; 3Division of Maternal-Fetal Medicine

Background
• Severe maternal morbidity (SMM) is increasing in the U.S.
• Preterm birth is highly associated with SMM.
• Certain obstetric interventions aimed at improving neonatal outcomes may result in significant maternal morbidity.1
• Cesarean delivery in the periviable period, defined as birth occurring between 20 0/7 and 25 6/7 weeks’ gestation, is controversial given uncertain neonatal benefit.1

Objective
• To determine the rate of SMM among women who delivered a periviable neonate.
• To compare SMM based on mode of delivery (cesarean vs vaginal).

Methods
• Single center retrospective cohort study of all periviable deliveries occurring at UCMC between 2012-2021.
• Differences in individual and composite SMM between the cesarean and vaginal births were compared using t-test and chi squared test.
• Multivariate logistic regression was performed to estimate the association between cesarean delivery and SMM.

Results
• Among women who had a periviable birth, 20.7% experienced an SMM event.
• The cesarean rate was 52.6% among all periviable births in our study population.
• The cesarean birth cohort had a higher rate of composite SMM compared to the vaginal delivery cohort (32.9% vs 5.8%, p<0.001, RR 7.9, 95% CI 3.6-17.4).
• After adjustment for confounding influences, cesarean remained significantly associated with SMM (aRR 3.8, 95% CI 1.2-12.3) in a multivariate analysis.
• Obstetric interventions performed for neonatal benefit were more common among the cesarean cohort. These included magnesium, latency antibiotics, expectant management of preeclampsia, corticosteroids, and fetal monitoring.

Conclusions
• 1 in 5 women who delivered in the periviable period experienced a severe maternal morbidity.
• Cesarean delivery was highly associated with hypertensive and neurological SMM events, ICU SMM events, and a nearly 4-fold increase in composite SMM after adjustment of confounding influences.

Future Directions
• Determine the correlation between mode of delivery and neonatal mortality/morbidity among periviable births.

References