

Session/Poster#

Presenter

B39

Sheetal Sriraman
Pediatrics Resident

Advisor(s): Dr. Lawrence Fordjour, Pediatrics

Incidence of Sepsis and the Outcomes of Antibiotic use in VLBW Infants at a High-risk, Inner City, Level III Neonatal Intensive Care Unit

Background: Neonatal sepsis is associated with increased morbidity and mortality. Antibiotic use is center-dependent and is most influenced by the incidence of sepsis and risk factors for sepsis in the population.

Objective: To determine the incidence of neonatal sepsis and to analyze the outcomes of antibiotic use in very low birth weight (VLBW) infants with negative cultures at a high-risk inner-city level III NICU.

Methods: This study was a cross-sectional retrospective chart review from 2016 to 2022 in a level III NICU that included all VLBW infants (less than 1500 g at birth). The composite outcome was defined as the incidence of necrotizing enterocolitis (NEC), retinopathy of prematurity (ROP), interventricular hemorrhage (IVH), or oxygen (O₂) requirement at 36 weeks postmenstrual age (PMA). Logistic regression was used to analyze the association between antibiotic use and outcome, after correcting for confounders such as gestational age (GA), SNAPPE II score, and birth weight (BW). The adjusted odds ratios (OR) with a 95% confidence interval (CI) were described.

Results: A total of 198 infants were identified out of which incidence of EOS, LOS, and fungemia were 1.5% (3/198), 9.6% (19/198), and 3% (6/198) respectively. The mean duration of antibiotics was 4 days for EOS and 17 days for the entire NICU admission. Mean GA was 28.1 weeks (75% CI: 27.8-28.3). Mean BW was 1048 g (75% CI: 1021-1074). Intra-amniotic infection was seen in 31% (56/177). We found an association between the duration of antibiotic use and the composite outcome, NEC, ROP, and O₂ requirements at 36 weeks PMA with an adjusted OR of 1.11 (95% CI 1.06-1.16), 1.07, (95% CI 1.03-1.11), 1.05, (95% CI 1.005-1.11), and 1.11, (95% CI 1.05-1.16) respectively.

Conclusion: Duration of antibiotic use was associated with the incidence of the composite outcome, NEC, ROP, and O₂ requirement at 36 weeks. Further studies including a larger sample size are needed to increase the power of the study.