Abstract Title:

Early-Onset Sepsis Work-Up Using Neonatal Sepsis Risk Calculator: Is NICU Admission Preventable?

Presenter:
Raissa Fobi, MD
101 The City Dr. Bldg 56, Ste 600, ZOT 4490
Orange, CA 92868-3298
Phone: (714)456-6920

Author:
Raissa Fobi Ngebi
Professional Title: MD
Organization / Affiliation: University of California Irvine
Mailing Address:
101 The City Drive
Orange, CA 92868, US
Phone: 7144566920
Email: rfobinge@uci.edu

Co Author/Co-Investigator Names/Professional Title: Preeti Singh, MD; Muhammad Aslam, MD F.; Bany-Mohammed, MD; Robin Koeppel, RN

Introduction: Neonatal sepsis is categorized into early onset (EOS) and late onset (LOS). Of newborns with early-onset sepsis, 85% present within 24 hours, 5% present at 24-48 hours, and a smaller percentage present within 48-72 hours. Current recommendations for the management of newborns at risk for EOS with maternal diagnosis of chorioamnionitis include a complete blood count, blood culture and antibiotic therapy at birth. We hypothesized that by using the neonatal sepsis calculator (NSC), an algorithm based on maternal intrapartum risk factors; we could decrease NICU admission for evaluation of EOS and safely generate new guidelines for management of infants at risk of EOS. Our objectives were to obtain baseline data on current practices in assessment of EOS that is based on AAP/CDC guideline, and to evaluate the feasibility and applicability of using the neonatal sepsis risk calculator.

Methods: A retrospective data analysis of all inborn infants greater than or equal to 35weeks gestational age, admitted for sepsis evaluation from January1, 2014 to December 31, 2015. Data on maternal risk factors, infant clinical presentation and laboratory inflammatory markers were collected. Maternal intrapartum risk factors were plugged into the NSC (0.3/1000 livebirths EOS incidence) to

generate a sepsis risk score at birth. A score of 0.65 per 1000 live births was chosen as the cut off, below which babies would not have met criteria for admission to the NICU.

Results: We identified 120 subjects that were admitted mainly for sepsis evaluation due to risk factors associated with chorioamnionitis, from a cohort of 461 late preterm and term infants of =35 weeks gestation admitted to the NICU. No positive cultures were identified in the cohort of 120 chorioamnionitis admissions. Forty five percent of these infants had neonatal sepsis risk score of >0.65 (54/120). Twelve out of fifty four (22%) infants with a score >0.65 were treated with a full course of antibiotics. Eleven out of the sixty six (16.6%) who had a sepsis risk score of <0.65 were also treated for culture negative sepsis. If the NSC is used as the screening tool coupled with early inflammatory markers, 53% (64/120) of neonatal admissions to the NICU are potentially preventable.

Conclusion: A new algorithm using the neonatal sepsis calculator and early neonatal inflammatory markers may decrease the need for NICU admissions and empiric use of antibiotics in the evaluation of EOS.