Title of Abstract:

Early-onset sepsis prevention algorithm using neonatal sepsis calculator and inflammatory markers, in decreasing NICU admissions.

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Abstract Description:

BACKGROUND: AAP and CDC recommendations for the management of newborns at risk for early-onset sepsis (EOS) due to chorioamnionitis include CBC (+/- CRP), blood culture and antibiotic therapy. Recent publications by Puopolo et.al. have shown that the risk of EOS in infants born at ≥34 weeks gestation can be calculated based on objective intrapartum risk factors using the neonatal sepsis calculator (NSC).

OBJECTIVE: This is a quality improvement project that aims to decrease NICU admission rates using an algorithm incorporating the NSC and inflammatory markers (CBC and CRP).

METHODS: An algorithm for evaluation and management of EOS in infants born at ≥35weeks and were exposed to maternal fever/chorioamnionitis was developed over a 6 month period after reviewing the literature and securing multidisciplinary local consensus. For baseline data, we conducted a retrospective review of infants admitted to NICU for EOS evaluation for the years of 2014 and 2015. We started to implement the algorithm prospectively on May 1, 2016. Preliminary data on the first six months after implementation of the new algorithm were analyzed including NICU admission rate for this group of patients as well as hospital re-admission rate in the first week after discharge. Overall NICU antibiotics utilization rate was assessed.

RESULTS: Baseline data over the 2-year period identified 120 subjects admitted to the NICU for sepsis evaluation due to exposure to maternal fever/chorioamnionitis, representing a 100% admission rate. NICU Antibiotics utilization rate during the baseline period was 25%. Six months after institution of the new algorithm, 26 (55%) out of a total of 47 infants with exposure to

maternal fever/chorioamnionitis were admitted to NICU; representing 45% decrease in NICU admissions compared to baseline. Total antibiotics utilization rate during the implementation period dropped to 9.8%, possibly attributed to the new algorithm. No re-admissions for neonatal infection occurred in the 7 days following discharge from the hospital.

CONCLUSION: NICU admissions and antibiotic exposure can be prevented safely when newborns ≥35weeks at risk for EOS are managed based on an algorithm that incorporates NSC and common inflammatory markers.

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