

Umbilical Cord Blood Cultures in Chorioamnionitis

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BACKGROUND

- Chorioamnionitis is a risk factor for early-onset sepsis (EOS) in both term and late-preterm infants.
- In 2019, the AAP recommended individual EOS risk assessment to guide NICU admissions, blood cultures and empiric antibiotics, including blood cultures for infants at elevated risk for EOS.
- While avoiding venipuncture, it is unknown if umbilical cord samples provide comparable data to peripheral samples.
- <u>Objective</u>: To evaluate clinical outcomes using umbilical cord blood cultures in chorioamnionitis exposed infants, with EOS risk assessment.

METHODS

Participants

• All infants > 35 weeks gestational age exposed to maternal chorioamnionitis between 6/01/2018 to 2/1/2020 born at UnityPoint Health-Meriter.

Data Collection

Retrospective chart review

EOS Risk Stratification

- Used the Kaiser Permanente Neonatal EOS Calculator, providing clinical recommendations based on predicted EOS risk zones.
 - <u>Green</u>: no culture or antibiotics; routine vitals
 - <u>Yellow</u>: blood culture and vitals q4H (x24 hrs)
 - <u>Red</u>: blood culture, empiric antibiotics and vitals per NICU
- Regardless of risk estimate, all infants had an umbilical cord blood culture obtained following placental delivery.

Analysis

- Percentage of NICU admissions during initial hospitalization and readmission rates for sepsis within the first 30 days of life.
- Review of peripheral vs umbilical samples according to EOS risk zone estimation

In our cohort of term and late-preterm infants exposed to chorioamnionitis, use of umbilical cord blood cultures prevented 92% of infants from needing venipuncture.

RESULTS

- 151 infants were included in the study
- Only one umbilical cord blood culture was positive (with Group B streptococcus)
- All peripheral blood cultures had no growth.
- Using umbilical cord blood cultures prevented 83 infants (92%) from needing venipuncture.
- After discharge, no infants were readmitted for sepsis in the first 30 days of life.

EOS Risk Group	Total Number of Infants	NICU Admissions	Additional Peripheral Blood Cultures Obtained
Green zone	64 (42%)	3 (4.7%)	1 (33%)
Yellow zone	68 (45%)	3 (4.4%)	2 (67%)
Red zone	19 (13%)	19 (100%)	4 (21%)





- EOS.

ADDITIONAL KEY INFORMATION

- 2010
- 2013

2016

- labs drawn.

2018



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CONCLUSIONS

Use of umbilical cord blood cultures was not associated with any missed diagnosis of early-onset sepsis.

Limitations include relatively small cohort size, which may have underrepresented potentially missed cases of

Future work assessing impact on antibiotic stewardship and cost-analysis on NICU duration in infants exposed to chorioamnionitis would be beneficial.

Prior UnityPoint-Health Meriter Practices for Infants Exposed to Chorioamnionitis

All infants were admitted to the NICU for IV antibiotics.

All infants were observed in the NICU for 4 hours to receive their 1st dose of IV antibiotics. If clinically appropriate, they would transfer back to the newborn nursery for completion of antibiotic therapy.

Use of the Kaiser Permanente Neonatal EOS Calculator to determine need for NICU admission and IV antibiotics. All infants had peripheral blood cultures and 12+24 hour

Current practice of obtaining an umbilical cord blood culture on all infants exposed to chorioamnionitis. Use of EOS calculator to determine need for NICU admission and IV antibiotics.

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