**Key Resources and Takeaways for Risk Assessment for newborns <35 weeks**

**Dr.**

General Guidelines from AAP

Title: Management of Neonates Born at ≤34 6/7 Weeks’ Gestation With Suspected or Proven Early-Onset Bacterial Sepsis

Author: Karen Puopolo et. Al, 2018:

[Link to article](https://pediatrics.aappublications.org/content/pediatrics/142/6/e20182896.full.pdf)

Key Takeaways:

* Low EOS Risk Categorization:
  + Based on delivery criteria
  + Preterm infants at a lower risk for EOS:
    - Obstetric indications for preterm birth (such as preeclampsia)
    - Birth by cesarean delivery
    - Absence of labor, attempts to induce labor
    - Membrane rupture at time of delivery
  + Management for these infants
    - No laboratory evaluation, no empirical antibiotic therapy
    - Or, blood culture and no empirical antibiotic therapy
* Laboratory Tests:
  + Blood culture:
    - The diagnostic standard for EOS
    - Reliably detect bacteremia at a level of 1 to 10 CFU with 1 mL blood
    - Consider anaerobic cultures
  + CSF culture:
    - Case by case
  + Continuation for persistent cardiorespiratory instability or laboratory test abnormalities in the absence of culture-confirmed disease is rarely justified
* Evaluation/Treatment:
  + When initial blood culture results are negative, antibiotics should be discontinued by 36-48 hours, unless site-specific infection
* Treatment:
  + Ampicillin and gentamicin are the 1st choice for empirical therapy.
  + The routine empirical use of broader-spectrum antibiotics is not warranted and may be harmful
  + Preterm infants who are severely ill and at the highest risk for Gram negative EOS …the empirical addition of broader-spectrum antibiotic therapy may be considered

Publication identifying preterm infants at low risk of EOS

Title: Identification of extremely preterm infants at low risk for early onset sepsis

Author: Puopolo K et al, 2017

[Link to article](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5654397/)

Key takeaways

* About 1 in 3 preterm infants can be categorized as low-risk for EOS by delivery criteria
* EOS risk is significantly lower in these infants
* Antibiotics are initiated and continued in a large proportion of low-risk infants

Publication on EOS risk stratification

Title: Archives of Fetal and Newborn

Author: Mukhopadhyay S, 2018

[Link to Article](https://ilpqc.org/wp-content/uploads/2021/09/Mukhopadhyay_vlbwasp_archives_2018.pdf)

* Implementation of delivery criteria based EOS risk stratification in VLBW is feasible and effective
* No case of delayed antibiotics among culture confirmed infection
* No increase in antibiotic initiation >72 h

Blood Culture Reliability Studies:

1. [Schelonka et al, Journal of Pediatrics, 1996;](https://www.jpeds.com/article/S0022-3476(96)70254-8/fulltext)
2. [Lancaster et al, JCM, 2015](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4609699/)
3. [Neal et al, JCM, 1986;](https://pubmed.ncbi.nlm.nih.gov/3760131/)
4. [Connell et al, Pediatrics, 2007](https://pubmed.ncbi.nlm.nih.gov/17473088/)

Key takeaways from above publications

* + Minimum 1 mL inoculate is met in >95% tests
  + Blood culture results do not have a substitute in management of sepsis currently
  + Auditing inoculate volumes may optimize this critical test’s output
    - increase provider confidence in culture results
    - improve management of true infection