

Neonatal Nosocomial Sepsis Care Guideline

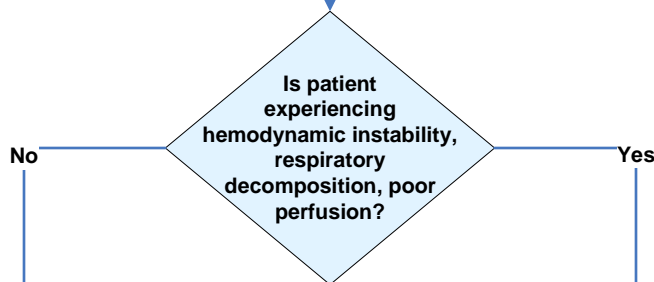


Inclusion Criteria:

- ≥ 7 days old
- Hospitalized in the NICU/CVICU with new onset signs and symptoms of infection

- Assessment**
- Vital signs
 - Physical exam
 - Presence of central catheters (inspect sites) and/or ventilator

- Interventions**
- Hemodynamic support as needed
 - Labs: CBC with diffs, CRP, Blood Culture, Urinalysis and culture, CSF studies and culture
 - Hemodynamic support as clinically indicated
 - Consider BMP, Blood Gas, RP-PCR if new respiratory symptoms
 - Hold feeds if clinically indicated
 - CXR if respiratory symptoms



- Antibiotic Therapy**
(Refer to order set for dosing)
- Oxacillin
And
Gentamicin

- Antibiotic Therapy**
(Refer to order set for dosing)
- Cefepime
+/-
Vancomycin with presence of a central line or h/o MRSA. Consider discontinuing at 24 hours if cultures are negative.

- Recommendations**
- Discontinue antibiotics at 36 hrs if culture negative & clinical status reassuring
 - Adjust antibiotics per culture results and response to therapy
 - Remove central venous catheters (when possible) if infection related

Considerations

- Risk factors for sepsis include: birthweight <1500 grams, recent antibiotic use, presence of central venous catheters and/or ventilator.
- ID consult for: all positive blood cultures, hemodynamically unstable patients and meningitis.
- Consider addition of fluconazole prophylaxis if birthweight < 1000gm and recent broad-spectrum antibiotic exposure.
- Duration of treatment:
 - Bacteremia - 10 -14 days, depending on pathogen
 - Meningitis - 14 - 21 days, depending on pathogen
 - Pyelonephritis - 10 - 14 days, if patient older than 2 months treat with shorter courses if responds quickly to treatment
- Consider antifungal treatment if new onset thrombocytopenia.

Antibiotic Dosages

Oxacillin

- 25 mg/kg IV q12h, Dosing Guidelines: 0 – 4 weeks & < 1200g
- 37.5 mg/kg IV q12h, Dosing guidelines: 0 – 7 days & 1200 – 2000g
- 37.5 mg/kg IV q8h, Dosing Guidelines: 0 – 7 days & > 2000g – OR – 7 – 28 days & 1200 – 2000g
- 37.5 mg/kg IV q6h, Dosing Guidelines: 7 – 28 days & > 2000g

Gentamicin

- 5 mg/kg IV q48h, Dosing Guidelines: ≤ 29 wks (< 7 days) or asphyxia, renal dysfunction, Indocin
- 4 mg/kg IV q36h, Dosing Guidelines: ≤ 29 wks or asphyxia, renal dysfunction, PDA or Indocin and 8 – 28 days Post Natal
- 4 mg/kg IV q24h, Dosing Guidelines: <29 wks, asphyxia, renal dysfunction, PDA or Indocin and ≥ 29 days Post Natal
- 4.5 mg/kg IV q36h, Dosing Guidelines: 30 – 34 wks and < 7 days Post Natal
- 4 mg/kg IV q24h, Dosing Guidelines: 30 - 34 wks and ≥ 8 days Post Natal

Cefepime

- 30 mg/kg IV q 12h Infuse Over 30 min, Dosing Guidelines: Neonates GA < 36 weeks
- 50 mg/kg IV q12h Infuse Over 30 min, Dosing Guidelines: Neonates GA ≥ 36 weeks
- 50 mg /kg IV q8h Infuse Over 4 HRS, Dosing Guidelines: > 15 days of age, severe, CF, Neutropenic, MIC 4 – 8 pathogens

Vancomycin

- 10 mg/kg IV q6h, Dosing Guidelines: < 7 days & 1200 – 2000g
- 10 mg/kg IV q12h, Dosing Guidelines: < 7 days & > 2000g
- 10 mg/kg IV q12h, Dosing Guidelines: > 7 days & 1200 – 2000g
- 10 mg/kg IV q8h, Dosing Guidelines: > 7 days & > 2000g

Safety Monitoring

- **Gentamicin / Vancomycin nephrotoxicity**
 - If continuing gentamicin and vancomycin beyond 36 hours, obtain trough levels

Neonatal Nosocomial Sepsis Care Guideline References

- Boscarino, G., Romano, R., Iotti, C., Tegoni, F., Perrone, S., & Esposito, S. (2024). An overview of antibiotic therapy for early- and late-onset neonatal sepsis: Current strategies and future prospects. *Antibiotics*, *13*(3), 250. <https://doi.org/10.3390/antibiotics13030250> (Level V)
- Cortese, F., Scicchitano, P., Gesualdo, M., Filaninno, A., DeGiorgi, E., Schettini, F., . . . Ciccone, M. M. (2016). Early and late infections in newborns: where do we stand? A review. *Pediatrics and Neonatology*, *57*(4), 265-273. <http://dx.doi.org/10.1016/j.pedneo.2015.09.007> (Level V)
- Fannery, D. D., Edwards, E. M., Coggins, S. A., Horbar, J. D., & Puopolo, K. M. (2022). Late-onset sepsis among very preterm infants. *Pediatrics*, *150*(6). <https://doi.org/10.1542/peds.2022-058813> (Level III)