Evaluation and Management of Possible Neonatal Sepsis
(≥ 35 weeks Gestation During the First Few Hours of Life)

**Maternal GBS Status:**

 Positive (unless Cesarean delivery without labor with membranes intact)

 OR

 Unknown and GBS risk factors present (Box 1)

 Negative

 OR

 Positive with Cesarean delivery without labor with membranes intact

 OR

 Unknown with no GBS risk factors (Box 1)

 Baby with signs of possible sepsis, not clearly improving (Box 2)

 Maternal temp ≥ 100.4°F (38°C) or ROM ≥ 18h or clinically diagnosed chorioamnionitis

 Baby well or clearly improving in first 2 h (Box 2)

 No intrapartum fever and ROM < 18h

 < 4 h intrapartum antibiotics

 > 4 h intrapartum antibiotics

 Baseline CBC + CRP

 Abnormal (Box 3)

 Normal

 Blood and CSF culture, antibiotics (Box 4)

 Antibiotics at least 7 to 10d (based on clinical course, laboratory values and culture results)

 Blood culture and antibiotics, repeat labs in 12 to 24h (Box 4)

 Antibiotics can be discontinued after 48h if culture negative, labs normal or normalize quickly and benign clinical course

 Observe at least 48h, no antibiotics (unless baby develops signs of possible sepsis)

 Baseline CBC + CRP

 Blood and CSF culture, antibiotics (Box 4)

 Antibiotics at least 48h to 10d (based on clinical course, laboratory values and culture results)

 Baby with signs of possible sepsis, not clearly improving (Box 2)

 Chorioamnionitis or Maternal temp ≥ 100.4°F (38°C) without epidural or ≥ 101.5°F (38.6°C) with epidural

 ROM ≥ 18h or Maternal Temp of 100.4 to 101.4 in presence of epidural

 Baseline CBC + CRP

 Screening CBC + CRP

 Abnormal (Box 3)

 Normal

 Blood culture and antibiotics (Box 4), repeat labs in 12 to 24h

 Antibiotics can be discontinued after 48h if culture negative, labs normal or normalize quickly and benign clinical course

 Repeat labs in 12 to 24h (Box 3)

 Observe at least 48h

 No antibiotics (unless baby develops signs of possible sepsis) (Box 2)

 Baby well or clearly improving in first 2 h (Box 2)

 No Chorioamnionitis or fever

 Baseline CBC + CRP

 Screening CBC + CRP

 Abnormal

 Normal

 Routine Newborn Care

 Baby with signs of possible sepsis, not clearly improving (Box 2)

 ROM ≤ 18h

 Positive (unless Cesarean delivery without labor with membranes intact)

 OR

 Unknown and GBS risk factors present (Box 1)

 Negative

 OR

 Positive with Cesarean delivery without labor with membranes intact

 OR

 Unknown with no GBS risk factors (Box 1)
Box 1. Group B Streptococcus Risk Factors
1. Delivering at <37 weeks’ gestation
2. Intrapartum temperature \( \geq 100.4^\circ F \geq 38.0^\circ C \)
3. Rupture of membranes for >18 hours
4. Previous infant with invasive GBS disease
5. GBS bacteriuria during the current pregnancy

Box 2.
Signs of Possible Neonatal Sepsis: tachypnea, grunting, cyanosis, oxygen requirement, apnea, persistent temperature <36.5 or >37.5, hypotonia, poor feeding, persistent unexplained hypoglycemia

Baby well or clearly improving means clear and rapid improvement during the first 2 hours of life, no residual signs by 2 hours of age, and no worsening of any signs.

Box 3. Normal Lab Values
1. CRP: normal \(< 0.5 \text{ mg/dL} \) (at UIHC, other hospitals may use different values)
2. CBC: normal I:T ratio at birth \(< 0.16 \) (although some use a cutoff of 0.20)
   \[ \text{I:T ratio} = \frac{\text{immature forms}}{\text{total neutrophils} + \text{immature forms}}. \]
   Also total neutrophil count should be within normal limits according to age (see nomogram at http://www.uihealthcare.com/depts/med/pediatrics/iowanatonomyhandbook/infection/reference.html)

Box 4. Antibiotics
1. Ampicillin 100 mg/kg/dose IV q12h.
2. Gentamicin 4 mg/kg/dose IV q24h.

Get a trough gentamicin level before the 2nd dose. If > 1.0, hold and check at 36 h. If < 1.0 at 36h, give q 36h. If still > 1.0 at 36h, hold and check at 48 h and give q 48h if < 1.0.

References