

Affects of Common Infections on the Neonate

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Affect of GBS on the Neonate

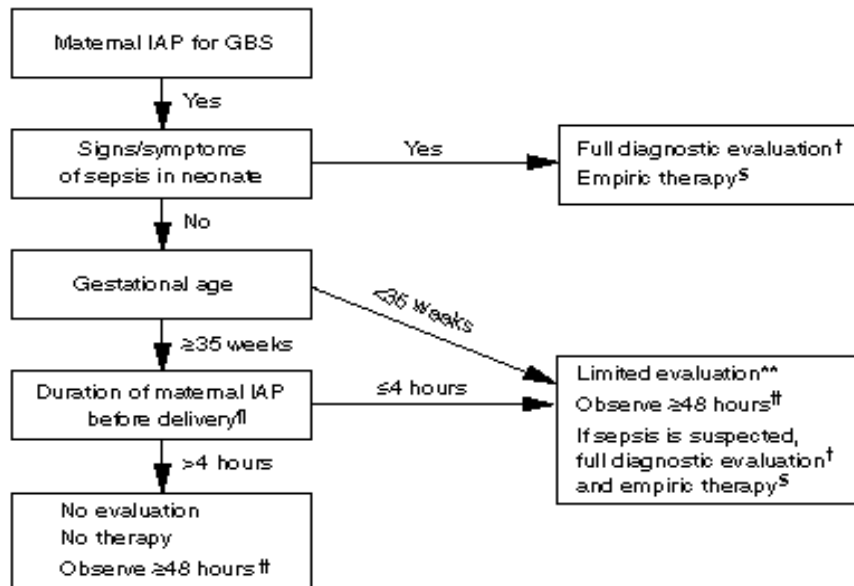
- 1970's-GBS infection was the leading cause of neonatal morbidity/mortality in the US
- 1980's-Clinical trails showed administering antibiotics during labor to mothers at risk of transmitting GBS to their newborns could prevent invasive disease in the first week of life.

Affect of GBS on the Neonate

- 1996-ACOG, CDC and AAP issued recommendations for intrapartum prophylaxis to prevent perinatal GBS disease
- 2002- Revised Algorithm for management

Affect of GBS on the Neonate

FIGURE 3. Algorithm* for management of a neonate born to a mother who received intrapartum antimicrobial prophylaxis (IAP) for prevention of early-onset group B streptococcal (GBS) disease



*This algorithm is not an exclusive course of management. Variations that incorporate individual circumstances or institutional preferences may be appropriate.

†Includes a complete blood count (CBC) and differential, blood culture, and chest radiograph if neonate has respiratory symptoms. Lumbar puncture is performed at the discretion of the physician.

§Duration of therapy will vary depending on blood culture and cerebrospinal fluid (CSF) results and the clinical course of the infant. If laboratory results and clinical course are unremarkable, duration of therapy may be as short as 48–72 hours.

¶Duration of penicillin or ampicillin chemoprophylaxis.

**CBC and differential and a blood culture.

†† Does not allow early discharge.

Risk Factor Algorithm

- Previously delivered infant had invasive GBS disease
- Foul smelling placenta/infant
- Delivery less than 37 weeks
- PROM \geq 18 hours
- Maternal temp above 100.4 prior to delivery
- Positive maternal GBS during this pregnancy

Risk Factor Algorithm

- Infant needs to have sepsis evaluation if any above mentioned risk factors.
- Exception for maternal GBS delivered via C-section without labor or ROM

Early Onset GBS

- Early onset accounts for 80% of GBS cases
- Presents with septicemia, pneumonia, or meningitis
- $\frac{2}{3}$ to $\frac{3}{4}$ of all GBS cases are term infants

Symptoms of GBS Infection

- Respiratory distress
- Poor feeding
- Lethargy
- Irritability
- Temperature instability
- Hypoglycemia
- Hypotension

Diagnosis of GBS Infection

Symptomatic infant !!!!!!!!!!!!!!!!!!!!!!!!!!!!!

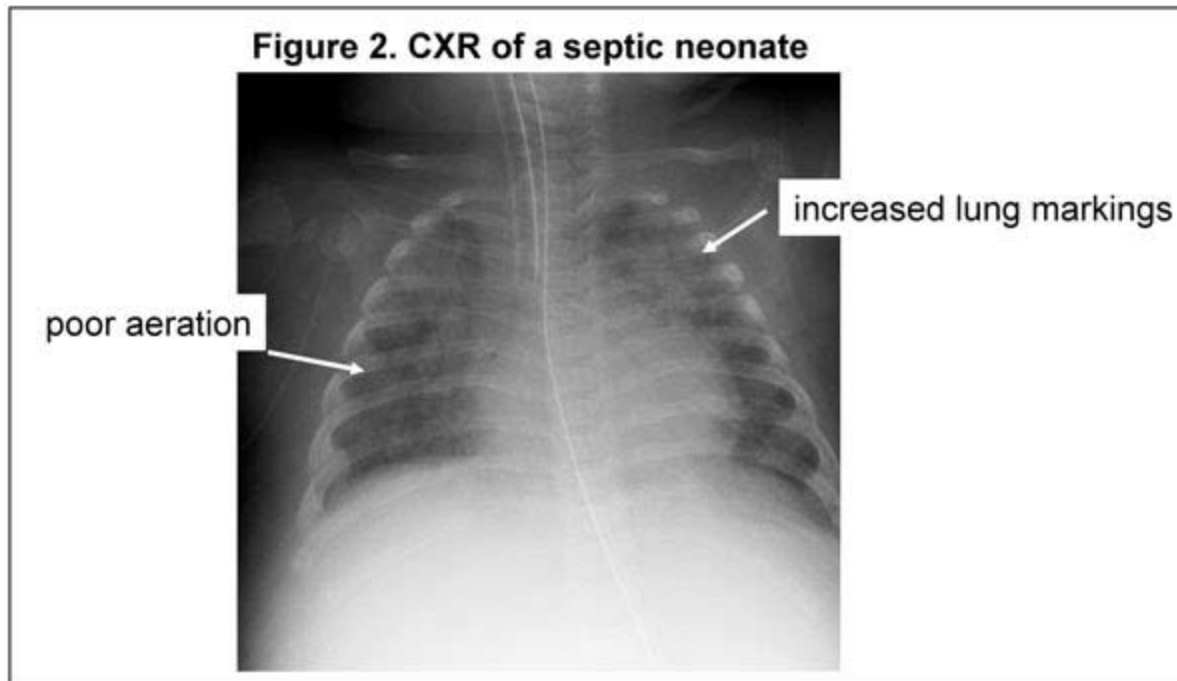


Diagnosis of GBS Infection

- Positive blood and/or CSF culture
- Left shift on CBC
- Elevated CRP
- Positive serum latex for GBS (controversial)

Diagnosis of GBS Infection

- CXR findings



Treatment

- Ampicillin 50-100 mg/kg/dose every 12 hours
- Penicillin 200,000-450,000 units/kg/day
- Aminoglycoside for synergy

Treatment of Neonates exposed to Intrapartum Prophylaxis

- If mom only GBS positive and received one dose of antibiotic 4 hours PTD no treatment required
- If treated with intrapartum prophylaxis (IAP) for suspected chorioamnionitis.
- Infant will need sepsis work up as well as empiric therapy pending culture results.

Duration of Treatment

- Infant with negative cultures and normal lab work may need only 48 hours
- Infant with positive cultures 7-10 days
- Positive CSF cultures at least 14 days

Discharge Criteria

- Most infant's born to GBS positive mother usually stay at least 48 hours before discharge.

Discharge Criteria

- A study in 2000 by Bromberger, P et al showed that 90% of infant's who contracted GBS infections did so within the first 24 hours.
- Therefore it was suggested if mom received proper IAP it was acceptable to discharge the infant at 24 hours.

Discharge Criteria

- The study however suggested that the parents had to be able to comply fully with instructions for home observation.
- Nurses play a vital role in assuring these parents are prepared to identify changes in their infant's status

Management of HIV-1 exposed Neonate

- Each year approximately 6000 pregnant women infected with HIV-1 give birth
- Nationally, Louisiana ranked 5th highest in AIDS case rates and 12th in the number of AIDS cases diagnosed in 2006, according to the CDC 2006 HIV/AIDS Surveillance Report (Vol. 18).

Management of HIV-1 exposed Neonate

- Baton Rouge ranked 4th for AIDS case rates among the largest metropolitan areas in the U.S. in 2006; New Orleans ranked 8th.
- In Louisiana, 31% of new HIV cases and 31% of new AIDS cases are among women

Prevention of Mother-to-Child Transmission on HIV-1

- Identify HIV-1 exposed infants even if mom's HIV-1 status was not recognized before delivery.
- Prescribing of antiretroviral prophylaxis to those infants born to HIV-1 infected mothers
- Advising against breastfeeding

Management of HIV-1 exposed Neonate

- Bathe infant in Phisoderm prior to ANY blood draws.
- Send CBC and HIV-PCR (DNA)
- Begin Zidovudine (AZT) 2 mg/kg/dose PO Q6 hours for infant \geq 35 weeks (not effective if not started within 48 hours)

Management of HIV-1 exposed Preterm Neonate

- Begin Zidovudine (AZT) 1.5 mg/kg/dose IV Q12 hours for infant < 35 weeks if NPO
- Begin Zidovudine (AZT) 2.0 mg/kg/dose PO Q12 hours for infant < 35 weeks if on feeds

Management of HIV-1 exposed Preterm Neonate

- Infants with positive test by 48 hours of age are considered to have in utero infection
- Infants with initial negative test and subsequent positive test are considered to have intrapartum infection.

Management of HIV-1 exposed Neonate

- Most infants are discharged before the 2 week testing.
- Therefore, we as healthcare providers need to ensure proper follow up (Peds, EIC, Social services)

Follow up of HIV-1 exposed Neonate

- AZT therapy continues through testing for a full 6 week regimen.
- Close follow up for toxicities of AZT
- Need for chemoprophylaxis for PCP if criteria met at 4-6 weeks of age

Follow up of HIV-1 exposed Neonate

- Administering of vaccines as specified by AAP depending on HIV status
- Family support.
- Negative test at 12-18 months are felt by many experts to confirm the absence of HIV-1.

Congenital Syphilis

- Report from CDC in 2006 of Congenital Syphilis cases in EBRP:
- 7 Congenital Syphilis cases born in 2004
- Congenital Syphilis rate 119.6/100,000 live births
- Congenital Syphilis rate 13.6 times the US rate of 8.8/100,000 live births

Diagnosis and Treatment of Congenital Syphilis

- Infants with proven or highly probable disease with the any of the following:
- Abnormal physical exam c/w congenital syphilis
- Serum VDRL titer that is fourfold higher than mother's titer
- Positive FTA-ABS

Diagnosis and Treatment of Congenital Syphilis

- CSF analysis for VDRL, cell count and protein
- CBC with diff and platelets
- Long bone films
- Some suggest liver functions, cranial ultrasound, ophthalmologic exam and hearing screen

Diagnosis and Treatment of Congenital Syphilis



Diagnosis and Treatment of Congenital Syphilis



Diagnosis and Treatment of Congenital Syphilis



Diagnosis and Treatment of Congenital Syphilis

- Aqueous crystalline penicillin G 50,000 units/kg/dose IV Q12 X 7 days then Q8 for 3 days OR
- Procaine penicillin G 50,000 units/kg/dose IM daily X 10 days

Diagnosis and Treatment of Congenital Syphilis

- Infant with normal exam and VDRL the same or less than fourfold maternal titer and any of the following:
 - Mother not treated, inadequately treated or no documentation of treatment
 - Mom treated with EES or other non-penicillin
 - Mom treated <4 weeks before delivery

Diagnosis and Treatment of Congenital Syphilis

- CSF analysis for VDRL, cell count and protein
- CBC with diff and platelets
- Long bone films

Diagnosis and Treatment of Congenital Syphilis

- Aqueous crystalline penicillin G 50,000 units/kg/dose IV Q12 X 7 days then Q8 for 3 days OR
- Procaine penicillin G 50,000 units/kg/dose IM daily X 10 days OR
- Benzathine penicillin G 50,000 units/kg/dose IM X 1

Diagnosis and Treatment of Congenital Syphilis

- Infant with normal exam and VDRL the same or less than fourfold the maternal titer and any of the following:
- Mom treated during pregnancy which was appropriate for the stage and was administered >4 weeks before delivery
- No evidence of reinfection or relapse

Diagnosis and Treatment of Congenital Syphilis

- No evaluation required
- Benzathine penicillin G 50,000 units/kg/dose IM
X 1

Diagnosis and Treatment of Congenital Syphilis

- Infant with normal exam and VDRL the same or less than fourfold maternal titer and any of the following:
- Mom's treatment adequate before pregnancy and
- Mom's VDRL remained low and stable before and during pregnancy and at delivery VDRL <1:2

Diagnosis and Treatment of Congenital Syphilis

- No evaluation or treatment required
- Benzathine penicillin G 50,000 units/kg/dose IM X 1 only if poor follow up anticipated