Guideline

GBS Colonisation: Management of Infant to Prevent Early Onset Group B Streptococcus (EOGBS) Disease

Key Points

- Intrapartum antibiotic prophylaxis reduces, but does not eliminate, EOGBS disease
- More than 90% of newborns with EOGBS disease develop clinical signs of sepsis within 24 hours of birth
- All newborns ≥ 35 weeks gestation must be assessed with the first set of observations after birth with the Neonatal Early-Onset Risk Calculator (NEORC, https://neonatalsepsiscalculator.kaiserpermanente.org) with ongoing clinical assessment to identify signs of EOS to continue after the initial risk calculation
- Antibiotics must be administered urgently, aiming for commencement within one hour of the decision to treat suspected sepsis being made.

1. Purpose

Early-onset neonatal Group B Streptococcus (EOGBS) disease is acquired by vertical transmission from a colonised mother, sometimes antenatally, but more frequently intrapartum when GBS either ascends from the vagina into the amniotic fluid or the infant is colonised during the birth process [1].

The past two decades have seen significant reductions in EOGBS infections following the widespread adoption of intrapartum antibiotic prophylaxis (IAP) as a means of interrupting vertical GBS transmission from mothers to their infants [2]. However, despite these reductions GBS disease remains a leading cause of neonatal morbidity and mortality in Australia and many other developed regions of the world [3-5].

IAP has altered the profile of newborn infants who develop EOGBS disease. Many affected infants lack the typical intrapartum risk-factors for GBS infection, are born to mothers with a negative GBS screen or represent missed opportunities for prevention. Clinicians should remain alert for signs of sepsis in any newborn infant.

This guideline outlines strategies for the identification and management of infants at risk of Group B Streptococcus infection at the Women's. This guideline accords with the 2010 Centers for Disease Control guideline [4].

2. Definitions

GBS (*Streptococcus agalactiae*) is a Gram positive bacteria that commonly colonizes the female genital tract (10-40% of pregnant women), may be transmitted to the infant intrapartum and is a common cause of early-onset neonatal infection [1].

Intrapartum antibiotic prophylaxis (IAP) is administration of antibiotic during labour with the intention of preventing GBS transmission from mother to infant.

Early onset sepsis (EOS) is defined by surveillance networks in Australia and New Zealand as infection in the first 48-hours of life [6, 7].

3. Responsibilities

Obstetric and neonatal doctors are responsible for identifying infants at risk of neonatal GBS disease, based upon antepartum or postpartum risk factors (e.g. inadequate GBS IAP in a colonized mother, an infant with clinical signs of sepsis).

Midwives and Nurses working on the maternity wards are responsible for identifying babies at potential risk of sepsis, based upon abnormal routine observations (heart rate, respiratory rate, temperature).

4. Guideline

4.1 Identifying infants at risk of GBS disease

IAP reduces, but does not eliminate, EOGBS disease [4]. Clinicians must therefore remain vigilant for signs of EOGBS infection. They should be aware that early-onset disease can occur in infants of culture-screened GBS negative women. Reports from countries where 'universal screening' based IAP is practiced record that up to 60% of EOGBS disease is in newborn infants whose mothers had a negative GBS screen [8].

Any newborn infant with signs of sepsis (eg. any combination of respiratory distress, apnoea, pallor with poor peripheral perfusion, fever $\geq 38^0$C or unstable temperature, and acidosis) should have a full diagnostic evaluation (usually full blood examination, blood culture, and chest x-ray if indicated) and receive benzylpenicillin and gentamicin (or consider benzylpenicillin and cefotaxime in some instances, Sepsis in the Neonate – Identification, Evaluation and Management guideline. whilst awaiting the results of cultures [4, 9]. It is worth emphasising that clinical signs are highly sensitive indicators of sepsis [10].

Maternal chorioamnionitis indicates a high-risk for early-onset neonatal GBS disease, even when the mother has received appropriate intrapartum antibiotics [10].

In contrast, infants of GBS positive mothers who have received adequate IAP can be considered for discharge home within 24-hours of delivery, provided they can still be observed closely by an experienced health professional [9]. Several studies show that maternal IAP do not change the timing or clinical presentation of EOGBS disease with more than 90% of infants developing signs of sepsis within 24-hours of birth [10, 11].

4.2 Newborn assessment after birth

Refer to Sepsis in the Neonate – Identification, Evaluation and Management guideline.

The Neonatal Early-Onset Risk Calculator (NEORC, https://neonatalsepsiscalculator.kaiserpermanente.org) must be performed with the first set of observations in all newborns ≥ 35 weeks gestation. [12]

Ongoing clinical assessment to identify signs of EOS should continue after the initial risk calculation.

5. Evaluation, monitoring and reporting of compliance to this guideline

Compliance to this guideline will be monitored by incidences reported to VHIMs and evaluated by annual review of episodes of Early Onset Group B Streptococcus Disease at The Women's.

6. References

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7. Legislation/Regulations related to this guideline

Not Applicable.

8. Appendices

Not Applicable.