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Editorial

Editorial on Neonatal Sepsis

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Editorial Note

Neonatal sepsis is a form of neonatal infection that refers to the presence of a bacterial blood stream infection (BSI) in a newborn baby with a fever (such as meningitis, pneumonia, pyelonephritis, or gastroenteritis). Neonatal sepsis is often referred to as "sepsis neonatorum" in older textbooks.

Clinically, guidelines for hemodynamic compromise or respiratory failure are not useful since these signs do not always occur in neonates before death is inevitable and irreversible. Early-onset sepsis (EOS) and late-onset sepsis (LOS) are the two forms of neonatal sepsis (LOS). EOS refers to sepsis that occurs within the first seven days of life (although some sources say within the first 72 hours), while LOS refers to sepsis that appears after seven days (or 72 hours, depending on the system used). Neonatal sepsis is the single most common cause of neonatal death in hospital as well as community in developing country.

It's difficult to rule out sepsis in newborns under 90 days old who have a fever (defined as a temperature of more than 38 °C (100.4 °F). Except in the case of apparent acute viral bronchiolitis, the current standard of treatment for newborns younger than 30 days is to conduct a thorough workup, including a complete blood count with differential, blood culture, urinalysis, urine culture, and cerebrospinal fluid (CSF) tests and CSF culture, admit the newborn to the hospital, and treat empirically for severe bacterial infection for at least 48 hours.

Diagnosis

The gold standard test for definitive diagnosis of neonatal sepsis is culturing for microorganisms from a sample of CSF, blood, or urine. Due to poor sensitivity of culture methods and concurrent antibiotic treatment, this can result in false negatives. Where necessary, lumbar punctures should be performed because 10-15% of people who present with sepsis often have meningitis, which necessitates the use of an antibiotic with a high CSF penetration.

CRP isn't very effective at detecting incidents.

Treatment

Sepsis in newborns is difficult to detect clinically. They can be asymptomatic before hemodynamic and respiratory failure is inevitable, but if there is even a remote suspicion of sepsis, they are often treated with antibiotics before samples are shown to be negative. In addition to fluid resuscitation and supportive treatment, a beta-lactam antibiotic (usually ampicillin) in combination with an aminoglycoside (usually gentamicin) or a third-generation cephalosporin (usually cefotaxime—ceftriaxone is normally avoided in neonates due to the potential risk of kernicterus) is a common antibiotic regimen in infants with suspected sepsis.

Research

The effect of probiotics on preventing late-onset sepsis (LOS) in neonates was analysed in a broad meta-analysis. Probiotics were found to minimise the risk of LOS in babies who were exclusively fed human milk. It's difficult to tell whether the prevention was due to probiotic supplements or the properties of human milk.

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