Common Causes of Meningitis: Newborn (0-6 Months)

The most common causes of newborn meningitis are group B streptococci, E. coli and Listeria monocytogenes. Newborns and infants may not have the classic signs and symptoms of headache and stiff neck. Rather, signs of meningitis in this age group may include high fever with constant crying, excessive sleepiness, irritability, inactivity or sluggishness. They usually display poor feeding, and can present with a bulge of the fontanel, along with stiffness of the body and neck.



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Group B Streptococci

(B) Bee Stripper

Group B streptococci is one of the most common causes of neonatal meningitis. Group B strep can spread to a baby during a vaginal delivery if the baby is exposed to, or swallows, fluids containing group B strep. This can lead to meningitis, or inflammation of the membranes and fluid surrounding the brain and spinal cord. Pneumonia and bacteremia can also occur.

E. coli

E coal-eye

E. coli are another major cause of neonatal meningitis. "Neonatal meningitis-causing E. coli" have a capsule (called K1) which protects the bacteria from the innate immune system and allows it to penetrate the CSF. Furthermore, this capsule contains sialic acid, which does not set off the defenses of the body, because it is widely found in humans. Sialic acid also plays a role in the bacteria’s ability to invade through the blood-brain barrier.

Listeria monocytogenes

Listeria-lizard with Monocle

Another common cause of newborn meningitis is listeria monocytogenes. Fetal infection can occur through transplacental transmission (from the mother to child), while vertical transmission can also occur from mother to infant via passage through an infected birth canal, or ascending infection through ruptured amniotic membranes. A rare route of transmission is through nosocomial outbreaks from one infected infant to others in the same nursery. Listeria in newborns can be classified as early onset or late-onset infection. The newborns may show meconium-stained amniotic fluid, or respiratory difficulty with cyanotic episodes, rapid breathing, and grunting. Poor feeding and fever may also be observed.

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