Which Bacteria are Responsible for Early-Onset Sepsis in Preterm Babies?
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For at least the last 30 years, empiric treatment for suspected early-onset sepsis in newborns, including those born preterm, has been Ampicillin and Gentamicin. However, this treatment regimen is based on data that are at least a decade old, when Group B *Streptococcus* was the most common organism responsible for early-onset sepsis. As peripartum antibiotic administration is now the standard of care when Group B *Streptococcus* has been found in prenatal cultures, the incidence of Group B Streptococcal infections has declined.

What organisms should we be most worried about, especially when we are concerned about the possibility of early-onset sepsis in an infant who is born preterm? We need more updated data on the microbiology of early-onset sepsis - and fortunately, these updated data come from Dr. Dustin Flannery and colleagues at the Children’s Hospital of Philadelphia, the University of Vermont, and the Vermont Oxford Network, in an article entitled, "Early-Onset Sepsis Among Very Preterm Infants," which is being early released this week in *Pediatrics* (10.1542/peds.2021-052456).

The authors use data collected from 753 hospitals from 49 states by the Vermont-Oxford Network, which is a nonprofit voluntary collaboration of health care professionals who care for neonates. The data used in this study specifically were from infants who were born very-low birth weight (<1500 grams) who had early-onset sepsis, defined as a culture-confirmed infection of the blood or cerebrospinal fluid with a bacterial pathogen in the first 3 days of life.

Data from more than 84,000 infants were analyzed; 1,130 had early-onset sepsis. The most common bacterial pathogen isolated was *E. coli*, which comprised 47%. Given that *E. coli* has also become the predominant organism for sepsis in full-term infants, this is probably not surprising. The runners up were Group B *Streptococcus* (19%), *Haemophilus* species (8%), and *Staphylococcus aureus* (6%).

There is much more information in this article, including the association of early-onset sepsis with gestational age and birth weight, and the implications of early-onset sepsis on future morbidity and mortality for these infants.

Even if you do not care for extremely preterm infants while they receive intensive care, you may care for them after hospital discharge, and this article will provide data that may help to inform your conversations with and counseling of families.