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Bacterial infections in premature babies more common than previously realized

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Premature babies are subject to a host of threats that can result in fetal/neonatal disease. In a study published in the January 2008 issue of the American Journal of Obstetrics & Gynecology, researchers from the University of Alabama–Birmingham Medical School and the Drexel University College of Medicine found that genital mycoplasmas are a frequent cause of congenital fetal infection. 23% of neonates born between 23 and 32 weeks of gestation have positive umbilical blood cultures for two genital mycoplasmas (bacteria lacking cell walls): Ureaplasma urealyticum and Mycoplasma hominis.

Although Ureaplasma urealyticum and Mycoplasma hominis are found in 80% of vaginal and cervical fluids, infants are not generally screened for these bacterial infections. The finding that about one-quarter of early preterm infants is already infected at birth is important in reducing adverse outcomes.

These newborns had a higher incidence of neonatal systemic inflammatory response syndrome (SIRS), higher incidence of bronchopulmonary dysplasia (BPD), higher serum concentrations of interleukin (IL)-6 and more evidence of placental inflammation than those with negative cultures. The earlier the gestational age at delivery, the higher the rate of a positive umbilical cord blood culture.

The data, derived from the Alabama Preterm Birth Study, included 457 consecutive singleton deliveries of infants born at 23-32 weeks' gestation from 1996 to 2001. This study focuses on a subset of 351 women/infant

pairs in the population who had umbilical cord blood cultures for U. urealyticum and M. hominis.

Writing in the article, Robert Goldenberg, M.D., Professor, Department of Obstetrics and Gynecology, Drexel University College of Medicine, states, “Given the frequency of these infections and their association with SIRS and likely with BPD, it seems reasonable to determine if infants in these categories would benefit from routine culture for Ureaplasma urealyticum and/or Mycoplasma hominis and subsequent treatment with an antibiotic effective against these organisms. Similarly, we question whether treatment of women likely to deliver an early gestational age infant with an antibiotic effective against these organisms might reduce subsequent neonatal morbidity and mortality.”’

In an accompanying editorial, Roberto Romero, MD, Chief of the Perinatology Research Branch and Program Director for Obstetrics and Perinatology at NICHD/NIH; Professor of Molecular Obstetrics and Genetics, Center of Molecular Medicine, Wayne State University, and Thomas J. Garite, MD, Professor Emeritus, Department of Obstetrics and Gynecology, University of California, Irvine, comment that the article “provides compelling evidence that congenital fetal infection is more frequent than previously realized. The detection of genital mycoplasmas is not part of routine clinical practice in obstetrics and neonatology. Similarly, standard treatment for suspected neonatal sepsis does not include antibiotics effective against these microorganisms.”

Romero and Garite further state that, “The initial uncertainties of whether genital mycoplasmas can cause fetal/neonatal disease are disappearing in light of the accumulating evidence that these microorganisms have been implicated in neonatal sepsis, pneumonia, meningitis and brain damage. Moreover, colonization of the neonatal respiratory tract with these organisms is a risk factor for chronic lung disease.”

Source: Elsevier