

# Big Dilemma - Prevent the Early-Onset Group B Haemolytic Streptococcosis or Reduce the Antibiotic Resistance Development



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**Abbreviations:** GBS: Group B Haemolytic Streptococcus; EOS: Early-Onset Sepsis; IAP: Intra-Partum Antibiotic Prophylaxis; EOGBS: Early-Onset Group B Haemolytic Streptococcosis; CDC: Centers for Disease Control; ACOG: American College of Obstetricians and Gynecologists; NAAT: Nucleic Acid Amplification Test

## Perspective

Early-onset sepsis (EOS) is the preventable newborn deaths. Group B haemolytic streptococcus (GBS), which passes vertically through delivery, is an important risk factor for neonatal infection in the first week of life, and the most effective method to prevent this is to administer intra-partum antibiotic prophylaxis (IAP) [1]. Although the incidence of early-onset group B haemolytic streptococcosis (EOGBS) is very low [2], it has a significant place in terms of perinatal morbidity and mortality.

The GBS screening guidelines have been published by Centers for Disease Control and Prevention (CDC) with American College of Obstetricians and Gynecologists (ACOG) [3]. It was updated in 2002 and recommended culture-based screening approach for all pregnant women between 35 and 37 weeks gestation [4].

While different prevention strategies are proposed to prevent the development of EOGBS, the four main methods are quite often preferred; a- The screening strategy, b- The risk-based strategy, c- The combination strategy, d- The Dutch strategy [5]. GBS prevention strategies are a process that every country should implement according to its own conditions. This is because IAP applications made only by taking risk factors into consideration may cause an increase in antibiotic resistance or effectivities and protection rates of risk-based strategies will be low in countries that high GBS carrier ratios without a risk factor [5].

There are recommendations issued by the CDC based on screening test results and risk factors to prevent the development of EOGBS after the birth of baby. The treatment recommendations is based on the following risk factors ;

whether positive GBS vaginal rectal screening in late gestation, infant <37 weeks or term, membranous rupture time (ROM  $\geq$ 18 hours or not), history of a previous infant with invasive GBS disease, intrapartum T  $\geq$ 100.4 °F (38.0 °C), intrapartum nucleic acid amplification test (NAAT) positive for GBS, intrapartum antibiotic prophylaxis, chorioamnionitis and the clinical findings of newborn infant [6,7].

The fact that all these measures taken to reduce infection rates and late-stage sequelae of newborns and the nonspecificity of clinical findings of sepsis in newborn infants are resulted in the most frequently used drug group in NICU are antibiotics. Although the rates of antibiotics uses of III NICU was 72 %, only 5% with culture-proven infection [8].

It is necessary to produce new strategies to reduce EOGBS infection rates in NICU and morbidity and mortality rates related with antibiotic resistance. More recent studies on the identification of EOS risk factors and the application of antimicrobial therapies, new developments in GBS vaccination studies have produced hope for reducing side effects associated with antibiotic use in NICUs and reducing antibiotic resistance development.

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