

## **GBS AND ANTIBIOTIC RESISTANCE: THREAT TO THERAPY**

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Penicillins including penicillin G (P) are the first line drugs of choice for intrapartum antibiotic prophylaxis (IAP) and also for treatment of group B streptococcal (GBS) infections either in infants or adults since all GBS isolates are considered to be uniformly susceptible to all  $\beta$ -lactams. Globally, GBS clinical isolates remain fully susceptible (S) to P as well as to most  $\beta$ -lactams with the exception of the emergence of very rare isolates with a reduced S to P (PRGBS) as recently reported in Japan, USA and Canada. Even if still uncommon, this phenomenon raises concern for the future with the risk of increased prevalence of GBS isolates with reduced susceptibility to  $\beta$ -lactams.

According to a low or high risk of anaphylaxis, women should receive cefazolin or clindamycin (Cl) IAP if their isolate is S to Cl otherwise they should receive vancomycin. Unfortunately, of more concern is the use of Cl IAP as R to macrolides and lincosamides is on the rise. Over the last two decades E R increased from <5% to a common resistance of 20% to 35% or even more, and R rates can vary from country to country (e.g., 5% in Denmark or 28 % in Belgium). Different known mechanisms account for the acquired R to macrolides and lincosamides in streptococci and are unevenly distributed among the different serotypes of GBS strains. For instance, E R is more likely to occur in serotype V and the efflux R mechanism shows a significant association with serotype Ia. This increase of macrolide and lincosamide R rates stresses the importance of performing an appropriate susceptibility testing for GBS strains isolated from antenatal screening specimens.

In case of vancomycin IAP, a recent study has showed the need to revise recommended dosage to reach useful concentration in cord blood.

Another concerning emerging and increasing resistance was described in 2002: resistance to fluoroquinolones. It has been mainly reported in Japan and Korea and has reached nearly 10% but remains very low in strains isolated from human in Europe.

For management of severe GBS infection as endocarditis, a combination of a  $\beta$ -lactam with gentamicin can be given to increase the bactericidal effect. As described many years ago for enterococci, high level of R to gentamicin is also reported for GBS isolates (up to 13% in Argentina).

Either for PRGBS or for gentamicin HLR, there are no convenient reliable methods to use in clinical setting for detecting these phenotypes of R. And for PRGBS, the situation has become more difficult since EUCAST recommends higher breakpoints, resulting in less sensitivity to detect PRGBS. Therefore many isolates may be misclassified as S!

The threat of spread of these different emerging and R strains should trigger awareness of the appropriate therapeutic strategy for dealing with severe GBS infections and the strategy for IAP for GBS carriers. These strains may present future public health challenges. R surveillance is crucial to decisions regarding optimal prophylaxis and treatment of serious GBS infections but also to identify newly acquired resistance mechanisms.

Keywords: Group B streptococci ; Antimicrobial resistance

Oral presentation