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SUSCEPTIBILITY PROFILE TO PENICILLIN, ERYTHROMYCIN AND CLINDAMYCIN OF CLINICAL ISOLATES OF GROUP B STREPTOCOCCI (GBS) RECENTLY ISOLATED IN BELGIUM AND DETECTION OF ERYTHROMYCIN RESISTANCE GENES

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Background: Empiric therapy of severe group B streptococcal (GBS) infections, started before availability of susceptibility results, and intrapartum chemoprophylaxis to prevent early neonatal GBS disease are based on accurate susceptibility surveillance data. Increase of erythromycin (E) and clindamycin (C) resistance (R) is observed in GBS isolates in many countries. In Belgium, E-R increased up to 10 % through the 1990s and reached 19% overall with 30 % among adult isolates in 2001-2002.

Methods: 178 GBS clinical isolates from invasive GBS diseases consecutively received by the reference laboratory between January 2005 and June 2006, were from 32 neonates (22 early-onset and 10 late-onset diseases) and 146 adults. Penicillin (P), E and C MICs were determined by using Etest® strips (CLSI interpretive criteria). Furthermore, for the E-R isolates, the inducible (iMLS), constitutive (cMLS) and M phenotypes were assessed by a double-disk diffusion test and the distribution of genes encoding RNA methylases and efflux pumps was investigated by PCR.

Results: All strains were susceptible (S) to P, 32% of isolates were R to E, with a higher rate of R among serotype V (57%, p <0,001) and 19% were R to C.
Among the 58 E-R isolates, 79% exhibited the MLS_B phenotype (R to E and C), 26 were cMLS with E MIC_{50} >256 mg/L and 20 iMLS with E MIC_{50}/MIC_{90} 4/>256 mg/L. The M phenotype (R to E and S to C) was expressed by 12 (21%) of E-R isolates with E MIC_{50}/MIC_{90} 4/12 mg/L
The most common E-R genotypes were *erm*TR (36%) and *erm*B (34%), followed by *mef*A (14%), *erm*B+*erm*TR (12%) and *erm*TR+*mef*A (2%).

Conclusions: 1) P remains active against all isolates. 2) Prevalence of macrolides R has increased since the 1990s and is particularly high among serotype V isolates. 3) E-R is mainly caused by target-site modification (*erm*B, *erm*TR) mechanisms; efflux (*mef*A) R mechanism is also prevalent among these isolates. 4) R surveillance is mandatory to guide prophylaxis and treatment of serious GBS infections.