**ABSTRACT**

Erythromycin resistance among group B streptococcus (GBS) isolates has been observed worldwide among group B streptococcus (GBS) isolates. In Belgium, through the 2000s, erythromycin resistance has increased from 8% to 20%. Therefore phenotypical and molecular surveillance of erythromycin and clindamycin resistance patterns have been conducted.

**MATERIALS AND METHODS**

Strains

<table>
<thead>
<tr>
<th>Period</th>
<th>Collection 1 (n=150)</th>
<th>Collection 2 (n=514)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>72%</td>
<td>70%</td>
</tr>
<tr>
<td>Strain</td>
<td>Laboratory</td>
<td>Belgium Natl. Reference Lab.</td>
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</tbody>
</table>

**RESULTS**

Distribution of resistance phenotypes and genotypes

- **Phenotypes distribution among 109 erythromycin-resistant GBS isolates**
- **Distribution of the emrTR, emm, and mefA/B genes within the different erythromycin resistance phenotypes**

**CONCLUSIONS**

- In Belgium, by the year 2010, prevalence of macrolide and lincosamide resistance among GBS exceeded 30%.
- Erythromycin resistance was higher among GBS isolates from adult invasive infections than from neonatal population.
- MLS phenotypes, either constitutive or inducible, were predominant leading to cross-resistance to macrolides and lincosamides.
- Resistance surveillance is mandatory to guide prophylaxis and treatment of serious GBS infections but also to identify newly acquired resistance mechanisms such as the L phenotype.

**REFERENCES**

- **Correction of erythromycin-resistant group B streptococcus (GBS) isolates selected in Belgium.** IDSA Poster 3007-3179; 2006; San Francisco, USA.
- Poupet U, Fedirko V, Pazy M, vanAmerongen G, de Ma P.
- **Multiple PCR assay for rapid and accurate capillary typing of group B streptococcal isolates from maternal, newborn, and community samples.** J Clin Microbiol. 43(11): 6181-6186.

**AIM**

To determine the phenotypical and molecular resistance patterns for erythromycin- and clindamycin-resistant group B streptococci and to identify the resistance genes (emm, emrTR and mefA/B) among erythromycin-resistant S. agalactiae isolated in Belgium from various clinical and colonizing origins.

**Determinant of erythromycin and clindamycin MICs**

- **Erms** method (AB Biodisk®, Sweden)
- Inoculum 0.5 McFarland on Mueller-Hinton agar <5% sheep blood
- Incubation 18h at 35°C
- MIC resistance breakpoints: >0.5 mg/L, EUCAST 2011

**Determination of erythromycin resistance phenotypes**

- Double-disk diffusion assay
- Erythromycin 15 µg paper-disks and clindamycin 2 µg paper disks (Becton Dickinson and Company®, USA)
- Disks placed 15-20 mm apart on agar plate; 18-24h incubation at 35°C
- MLS phenotype: susceptible to at least one of the antibiotics.
- M phenotype: susceptible to both of the antibiotics.

**Evolution macrolide and lincosamide resistance in GBS in Belgium between 2000 and 2010**

**Distribution of resistance phenotypes and genotypes**

- Genotypic distribution of 109 erythromycin-resistant GBS isolated from adult infections, neonatal infections (EOD and LOD) and colonization in pregnant women

**RESULTS**

Erythromycin and clindamycin resistance rates

Among the 328 clinical and colonizing GBS collected between 2008 and 2011, 109/328 isolates (33.2%) and 75/328 isolates (22.9%) were resistant to erythromycin and clindamycin respectively. Rate of resistance to clindamycin was higher when inducible resistance (ILS) was added to MLS and L phenotypes: 103/328 (31.4%).