SURVEILLANCE OF SEROTYPES AND ANTIMICROBIAL SUSCEPTIBILITY PROFILE IN GROUP B STREPTOCOCCUS (GBS) IN BELGIUM

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METHODS

Clinical isolates from colonized pregnant women

In 2011, all Belgian Laboratories were invited to send to the National Reference Centre (NRC) for GBS five consecutive S. agalactiae isolates from vaginal–rectal specimens for further characterization and epidemiological purposes. A total of 738 isolates of GBS were included in the study. Upon reception, strains were subcultured, identification was confirmed and they were stored in skimmed milk at -40°C before further testing.

Determinants of capsule types

Serotyping

All strains were submitted to serotyping by agglutination with Strept-B-Latex (SSI, Denmark) using a manual method according to Michie et al (2011).

Genotyping

All strains that were non-typable or had a weak positive reaction by the agglutination method were genotyped by a microchip method (Sequenom, Inc., San Diego, CA, USA) using a specific panel of 18 microsatellite markers.

Distribution of % of susceptible and resistant GBS isolates

<table>
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<tr>
<th>% Susceptible</th>
<th>% Intermediate</th>
<th>% Resistant</th>
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<tbody>
<tr>
<td>Penicillin</td>
<td>Erythromycin</td>
<td>Clindamycin</td>
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<tr>
<td>98.5</td>
<td>98.5</td>
<td>100</td>
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</table>

Phenotypes

Phenotypes of 392 clinical isolates of GBS colonizing pregnant women (2012). Distribution of % of susceptible and resistant GBS isolates

RESULTS AND DISCUSSION

Some evolution was showed in the distribution of capsule types of GBS : increase of types III and V.

All tested strains of GBS isolated from pregnant women were susceptible to penicillin, the first line agent recommended for intrapartum prophylaxis (IAP) and therapy.

On the other hand, prevalence of resistance to antibiotics commonly used for prophylaxis of GBS infection in penicillin allergic patients was found. GBS resistant to clindamycin and erythromycin was common.

The observed rates of resistance to erythromycin showed relationships between resistance to clindamycin and erythromycin. Infections resistant to fluoroquinolone oxacillin-resistant resistance strains were mostly types IV and V (Pen-oxS).

Erythromycin-resistant strains were more likely to occur in type V and IV isolates (85 and 29%) than in other serotypes.

Malic acid resistance phenotypes

Table 1: Distribution of malic acid resistance phenotypes among 738 isolates of GBS colonizing pregnant women (2012). Distribution of % of susceptible and resistant GBS isolates

Phenotypes % S/MG % M/MG % R/MG (mg/L)

M CST susceptible 128 / >128

M CST resistant 128 / >128

M L susceptible 2 / 4

M L resistant 1.0 / 12.0

GBS vaccination era is approaching, this study focusing on the distribution of circulating capsular serotypes among GBS isolated from colonized pregnant women was not developed in the vaccination era and the current serological profile was designed to determine a Belgian reference baseline. It should help to understand potential epidemiological changes among GBS isolated from neonatal disease and from colonized pregnant women following GBS vaccine introduction.

CONCLUSION

REFERENCES


Aubry F, Mairesse F, Chastang C. Laboratory Diagnosis and Typing of Streptococcus agalactiae (group B streptococcus). In: Clinical Microbiology 2011.


