

DISTRIBUTION OF SEROTYPES OF CLINICAL GROUP B STREPTOCOCCI ISOLATED IN BELGIUM: A DECADE-REVIEW

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P-201

BACKGROUND:

Group B streptococcus (GBS) continue to be a major cause of life-threatening infections, sepsis, pneumonia and meningitis in neonates. Pregnant women and non-pregnant adults are also affected by severe GBS diseases. In the last decades, capsular serotypes Ia, Ib, II and III caused the majority of diseases. Their distribution varies according to time and geographic locations. For epidemiological purpose as well as for the development and formulation of GBS vaccines, ongoing surveillance of GBS serotype distribution is critical.

OBJECTIVE

In order to follow and understand epidemiological changes and to provide information related to capsular types to include in a future vaccine, a decade-review of annual distributions of serotypes of GBS isolated in Belgium among different patients' age-groups was done.

METHODS

Bacterial isolates

From January 1998 to December 2007, laboratories belonging to the Belgian surveillance network, sent to the National reference centre for GBS, a total of 1021 (80-122/year) clinically significant strains of GBS. A description of these isolates is given in the following table: 300 GBS were recovered from neonates' blood, cerebro-spinal fluid or any deep site, and 721 isolates were recovered from adults with severe infections.

Description of 1021 strains of GBS isolated from invasive disease: age groups and diagnostics (01.1998-12.2007, Belgium).

Patients	Diagnostic	Number (%)
Neonates		300
	Early Onset Disease (EOD)	(78.7)
	Late Onset Disease (LOD)	(21.3)
Non-pregnant adults		721
	Bacteremia (unknown or unspecified focus)	(50.5)
	Infections +/- bacteremia (+bacteremia 24.5)	(5.7)
	- Skin and soft tissue infection	(25.1)
	- Osteomyelitis, arthritis	(3.6)
	- Pneumonia	(2.3)
	- Meningitis	(8.4)
	- Urinary tract infections, urosepsis	(1.5)
	- Endocarditis	(2.8)
	- Others	

Serotyping

Upon receipt, isolates were confirmed as belonging to group B. Serotyping was then performed by a coagglutination latex method.

From 1998 to 2004, the GBS serotyping Test (ESSUM, Denmark) was used. The typing set included reagents specific for polysaccharidic antigens Ia, Ib to V.

From 2005 to 2007, the Strep-B-latex kit from the Statens Serum Institute (SSI, Denmark) was used and allowed typing of serotypes Ia, Ib to VIII.

CONCLUSION

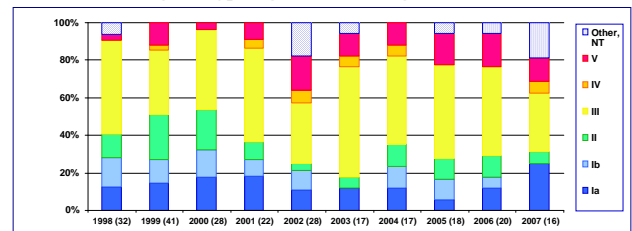
- ◆ Distributions of GBS serotypes varied by patient's age-groups
- ◆ Serotype III remained the major serotype in neonatal infections and particularly in LOD. As in adults infections, diversity of serotypes was observed in EOD.
- ◆ Adult's distribution of GBS serotypes: Ia, III and V, were the predominant serotypes, but Ib, II and IV were also well represented.
- ◆ A relative increase of serotype V. Either in adult's distribution or in the distribution of isolates from neonatal EOD, through the decade, serotype V became relatively more common.

RESULTS

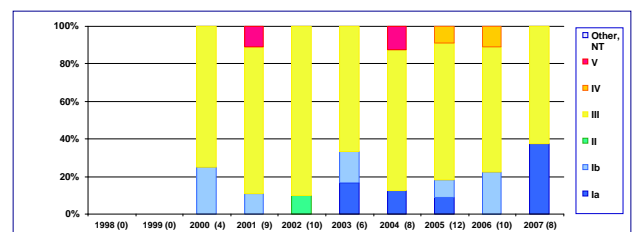
Distribution (%) of serotypes of GBS isolated in Belgium from different groups of patients, from 1998 through 2007.

Serotypes	Neonatal EOD	Neonatal LOD	Non-pregnant adults
Ia	14.0	9.4	19.3
Ib	10.2	9.4	12.6
II	13.1	1.6	11.1
III	43.2	75.0	20.9
IV	3.0	3.1	4.4
V	11.0	3.1	22.0
VI	0	0	0.1
VII	0.4	0	0.7
VIII	0	0	0.1
NT	5.1	0	8.6
Total Number	236	64	721

Annual distribution of serotypes of GBS isolated from neonatal EOD.



Annual distribution of serotypes of GBS isolated from neonatal LOD.



Annual distribution of serotypes of GBS isolated from non-pregnant adults.

