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DISTRIBUTION OF CAPSULAR POLYSACCHARIDES OF STREPTOCOCCUS  
AGALACTIAE STRAINS FROM URUGUAY. MULTIPLEX PCR VERSUS  
CONVENTIONAL CAPSULAR SEROTYPING

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**BACKGROUND**

*Streptococcus agalactiae* (Group B *Streptococcus*, GBS) is a devastating neonatal and mother pathogen worldwide despite antenatal screening and antibiotic prophylaxis.

It is also an important cause of septicaemia in the elderly and in immunocompromised patients. Surveillance to monitor GBS capsular serotype (CPS) distribution is needed to guide development and assess feasibility of GBS conjugate vaccines. Different geographical serotype distributions are described worldwide, so active surveillance is mandatory. Capsular conventional serotyping (CS) methods of the 10 CPS are commonly used for GBS, but proportion of non typeable (NT) isolates is significant. Since 2002, PCR based molecular methods for CPS typing has been described.

**AIMS**

To improve the knowledge about CPS distribution in GBS strains isolated from colonized pregnant women and infections in Uruguay, where no other similar studies were done before, and secondly to compare CS vs a multiplex PCR of genes coding CPS.

**METHODS**

Using the PCR described by Creti et al., DNA extracts from 110 GBS strains were studied, 92 isolates from antenatal maternal screening at 35-37 weeks enacted by the Ministry of Health since 2010, and 18 strains from 2 neonatal and 16 adult infections. CS was performed by latex agglutination according to manufacturer. Certified control strains for all serotypes were used in both procedures.

**RESULTS**

The CPS distribution of 92 strains isolated from colonized pregnant women was as follow: **III** (30%), **Ia** (28%), **Ib** (20%), **V** (13%), **II** (7%), **IX** (2%). The 4 NT GBS strains by CS were resolved by PCR. Serotypes IV, VI, VII and VIII were not found in this group. Although similar results were found in both methods, some discrepancies were observed for type Ib and II. Four strains showed agglutination simultaneously for two serotypes by CS (Ib/V), but PCR identified only gene coding for CPS Ib. The two strains isolated from invasive neonatal disease belonged to serotype **II**. In the group of 16 strains from adults' infections, the predominant serotypes were **Ia** (27.8%), **II** (22.2%), **Ib** (22.2%); serotypes **III** and **V** were less found in this small studied group (11.11%). Agreement between CS and PCR results was observed for serotypes Ib, III, V and IX. Among discrepancies, one strain typed VII by CS was found Ia by PCR; and 2 strains agglutinating simultaneously for types II/IV, gave a type II by PCR.

**DISCUSSION**

Multiplex PCR typing is an approved and convenient method to type CPS of GBS in reference labs. Agreement with CS is good. Strains exhibiting 2 serotypes by CS and 1 by PCR can be explained by the fact that women can be colonized with multiple strains of different CPS types, and that latex is performed on several colonies when PCR is done from one colony.

Our CPS results showed a different distribution when compared with reported distributions from North America or Europe.

This is a small initial work in CPS typing in Uruguay. More studies involving the whole country are needed and next steps should include the study of immunogenic proteins.