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Group B streptococcus colonization among pregnant women in Uruguay

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Synopsis

The prevalence of group B streptococcus colonization in pregnant women was 17.3% in the largest maternity hospital in Uruguay.

Keywords

Colonization; Group B streptococcus; Pregnant women; Uruguay

Group B streptococcus (GBS) is one of the most common causes of neonatal sepsis. In the United States, 5%–10% of neonatal deaths are caused by this organism [1]. Early-onset GBS disease is defined as an infection occurring in the first week of life and accounts for approximately 70% of all GBS diseases in the first 3 months of life [2]. Sepsis develops in approximately 1% of neonates born to colonized women. It has been estimated that between 10%–30% of pregnant women are colonized by GBS. These figures have been reported mainly from high-income countries, with few studies from Latin America [1]. The objective of the present study was to determine the prevalence of GBS colonization in pregnant women using the method recommended by the Centers for Disease Control and Prevention (CDC) [2].

Pregnant women admitted to the Pereira Rossell Hospital, the largest public maternity unit in Uruguay, were asked to participate in the study. Inclusion criteria were pregnant women in labor or admitted for elective cesarean delivery; gestational age between 32 and 41 weeks; and signed consent forms. If a woman had been tested for GBS during prenatal care and the culture was positive, she received treatment after the study sample had been obtained. Exclusion criteria were pregnant women who had received antibiotics within 1 week before being admitted to hospital and women who declined to participate.

During a 2-month period in 2008, a total of 300 pregnant women were selected at random from a total of 846 women eligible women admitted to the hospital. The random allocation scheme was derived from a computer-generated list of numbers using sealed envelopes that were opened at the moment of enrollment. Treating physicians were instructed to collect a specimen with one swab that collected specimens from the vagina and rectum. The swab was placed into a recommended container with adequate transport medium. As recommended by the CDC [2], the specimens were incubated in Todd-Hewitt broth supplemented with nalidixic acid and

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gentamicin. After 18–24 hours of incubation at 35 ± 2 °C in ambient air, specimens were subcultured onto a sheep blood agar plate, and a Granada medium plate was made and incubated at the recommended incubation conditions [3]. Observation of cultures was conducted at 24 hours and all negative culture plates were reincubated for an additional 18–24 hours and then re-examined. All GBS isolates were tested for drug susceptibility as recommended by the CDC [2], including clindamycin and erythromycin.

The characteristics of the participants are shown in Table 1. The study population was similar to the population of pregnant women who had received care in the hospital during the previous year. A total of 52 pregnant women from the sample of 300 were found to be colonized with GBS (17.3%; 95% CI, 13.2–21.1). This percentage was similar to that reported previously [1]. In other studies conducted in our region, a wide range of between 3% and 21% has been reported [4]. Fifteen (16.7%) of the 90 pregnant women with one or more clinical risk factors for early-onset GBS defined by the CDC were colonized by GBS; for the preterm birth group the prevalence was 23.9% (Table 2). All isolated samples were susceptible to Penicillin G (100%). It is important to highlight that 70% of the study group did not show any risk factor during labor associated with early-onset GBS disease.

In conclusion, the prevalence of GBS colonization at the Pereira Rossell Hospital was 17.3%, which is similar to the figures reported for other countries in South America. All the colonized women were susceptible to Penicillin, and consequently this antibiotic should be the first line therapy to prevent early-onset GBS disease.

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References

1. Heath PT, Schuchat A. Perinatal group B streptococcal disease. Best Pract Res Clin Obstet Gynaecol 2007;21(3):411–424. [PubMed: 17336588]
2. Schrag S, Gorwitz R, Fultz-Butts K, Schuchat A. Prevention of perinatal group B streptococcal disease. Revised guidelines from CDC. MMWR Recomm Rep 2002;51(RR11):1–22. [PubMed: 12211284]
3. Rosa-Fraile M, Rodriguez-Granger J, Cueto-Lopez M, Sampedro A, Gaye EB, Haro JM, et al. Use of Granada medium to detect group B streptococcal colonization in pregnant women. J Clin Microbiol 1999;37(8):2674–2677. [PubMed: 10405420]
4. Zusman AS, Baltimore RS, Fonseca SN. Prevalence of maternal group B streptococcal colonization and related risk factors in a Brazilian population. Braz J Infect Dis 2006;10(4):242–246. [PubMed: 17293904]

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Table 1

Comparison of characteristics between the hospital population and the study sample [a]

Characteristics	Hospital population [b] (n=8185)	Study sample (n=300)	*P* value [c]
Maternal age, y			
<20	1981 (24.2)	84 (28.0)	
20–34	5346 (65.3)	190 (63.3)	0.336
≥35	858 (10.5)	26 (8.7)	
Parity			
Nulliparous	3469 (42.4)	119 (39.7)	0.346
≥1	4716 (57.6)	181 (60.3)	
Preterm birth, wk			
<37	1284 (15.7)	46 (15.3)	0.865
<35	659 (8.1)	15 (5.0)	0.071
Cesarean delivery rate	1760 (21.5)	65 (21.7)	0.949

[a] Values are given as number (percentage).

[b] Total hospital population available for 2007.

[c] Using the χ^2 test.

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Table 2

Prevalence of group B streptococcus for different groups

	No.	GBS prevalence No. (%)	95% Confidence Interval
Population	300	52 (17.3)	13.22–21.10
Preterm birth (<37 weeks)	46	11 (23.9)	11.10–36.72
PROM	54	9 (16.7)	0.06–26.93
Adolescent (<20 years old)	84	20 (23.80)	14.51–33.10
Maternal age >34 years	26	5 (19.23)	2.99–35.46
One or more risk factors for early onset neonatal sepsis [a]	90	15 (16.7)	8.81–24.51

[a] Defined by CDC as maternal fever, prolonged rupture of membranes, previous GBS infected infant, prenatal GBS bacteriuria, and preterm birth.