CHROMAGAR™ STREP B AND GRANADA MEDIA FOR DETECTION OF GROUP B STREPTOCOCCUS IN VAGINAL/RECTAL PRENATAL SCREENING

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Introduction

Early-onset group B Streptococcus (GBS) disease cases occur among infants born to women with negative prenatal GBS screening at a higher proportion than expected. According to data from the CDC a total of 4% GBS isolates from invasive early-disease were nonhemolytic.
The aim of this study was to evaluate the usefulness of CHROMagar™ Strep agar, an aerobic chromogenic medium, for vaginal/rectal Group B Streptococcus screening, compared to Granada agar medium.

Methods

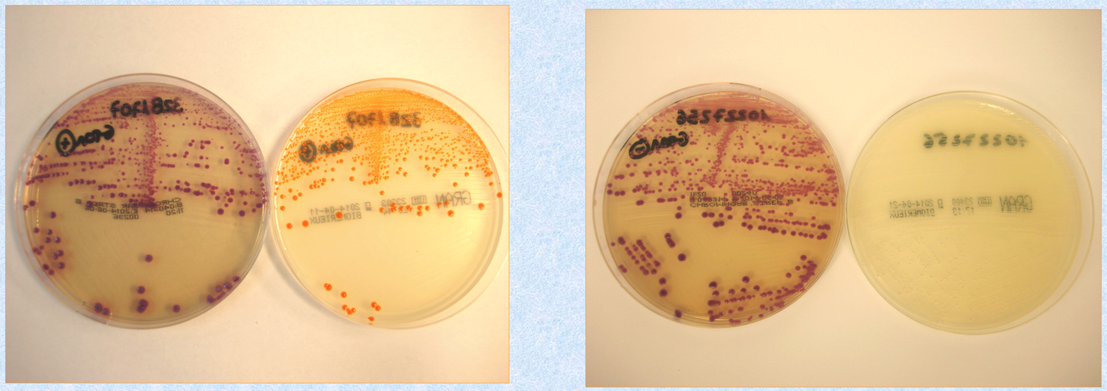
The prenatal GBS screening was carried out at 35-37 weeks of pregnancy according to Spanish recommendations and CDC guidelines for the Prevention of Perinatal Group B Streptococcal Disease. The usual processing of rectovaginal swabs received in the Laboratori Clínic l'Hospitalet for prenatal GBS screening included direct plating on Granada agar medium and placing on enrichment broth (LIM broth) and subculture on Granada medium plates. Enrichment broth was incubated at 35-37ºC for 18-24 hours and Granada medium plates were incubated at 35-37ºC in anaerobic atmosphere for 48 hours. In October and November 2013 we added subculture of LIM broth on CHROMagar™ StrepB agar that was incubated at 35-37ºC in aerobic atmosphere for 18-24 hours. Orange colonies obtained on Granada do not require any further identification tests but mauve colonies on CHROMagar™ StrepB were confirmed by CAMP test, grouping latex agglutination and Vitek2 identification when there were no pigmented colonies on Granada medium plates.

Results

The GBS screening was carried out in 678 women, yielding 152 isolates, achieving a prevalence of 22.4%. Results are presented in Table 1. We obtained a high sensitivity by combining direct plating on Granada medium and subculture after enrichment on CHROMagar™ StrepB.
Nine of the isolates (5.9%) were nonhemolytic and recovered only from CHROMagar™ StrepB. We obtained five isolates only from direct Granada medium corresponding to paucimicrobial samples.
The subculture after LIM broth enrichment on CHROMagar™ StrepB is 6.6% more sensitive than on Granada medium, and can be incubated 24 hours instead of 48 hours required for Granada medium.

Medium	Positives	False negatives	Sensitivity %
Granada (direct)	136	16	89.4
CHROMagar (enrichment)	143	9	94.1
Granada (enrichment)	133	19	87.5
Granada (direct) or CHROMagar	150	2	98.7

Table 1. Results of GBS in rectovaginal swabs



Chromagar and Granada plates: hemolytic and non hemolytic GBS colonies

Conclusion

A screening GBS protocol that includes direct plating on Granada medium and subculture after broth enrichment, on a chromogenic medium like CHROMagar™ Strep B would improve the sensitivity and allow the detection of hemolytic and nonhemolytic GBS.

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