

GROUP B STREPTOCOCCUS (GBS) BACTERIURIA IN PREGNANCY. COMPARISON OF FOUR CULTURE MEDIA

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EV0516

The presence of Group B Streptococcus (GBS) in urine has been associated with heavy vaginal-rectal GBS colonization and an increased risk for early-onset disease in the newborn.

CDC Guidelines for the Prevention of Perinatal Group B Streptococcal Disease recommend intrapartum antibiotic prophylaxis (IAP) for women with GBS bacteriuria in the current pregnancy.

OBJECTIVES

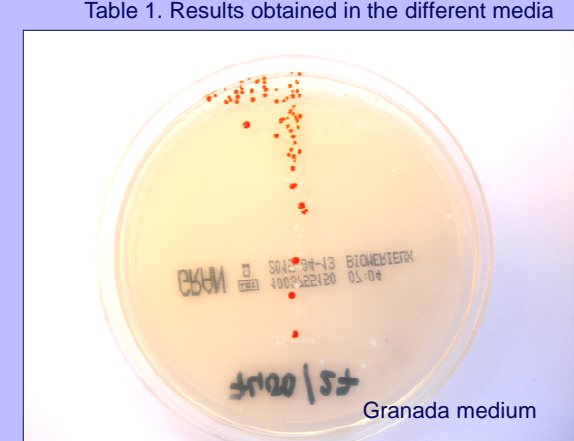
The aim of this study is to compare four different culture media to isolate GBS in urine of pregnant women.

METHODS

Pregnancy monitoring in Catalan Institute of Health (ICS) includes urine culture for screening of asymptomatic bacteriuria. Culture routine procedure of urine samples received in the Laboratori Clínic l'Hospitalet (ICS) is plating on CLED Agar and incubate overnight at 35-37°. In May and June 2014 we added three culture media to enhance the isolation and identification of GBS, CHROMagar™ StrepB, Granada medium and Columbia blood agar supplemented with nalidixic acid and colistin (CNA). CHROMagar™ StrepB was incubated at 35-37°C in aerobic atmosphere for 18-24 hours, Granada agar medium was incubated at 35-37°C in anaerobic atmosphere for 48 hours and CNA plates were incubated at 35-37° in 5% of CO₂ atmosphere for 48 hours. Orange colonies obtained on Granada do not require any further identification tests but mauve colonies on CHROMagar™ StrepB and haemolytic colonies from CNA were confirmed by CAMP test, grouping latex agglutination and Vitek2 identification when there were no pigmented colonies on Granada medium plates. We considered colony-count ≥ 10.000 cfu/mL of GBS.

RESULTS

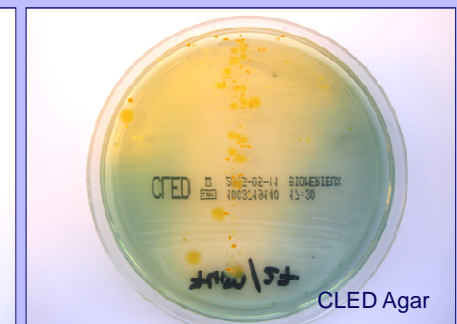
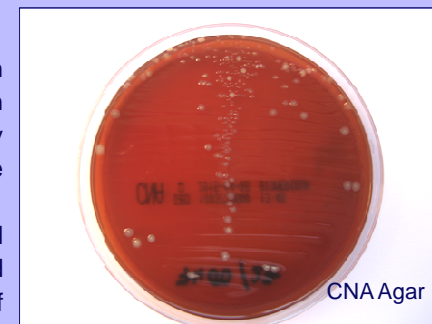
GBS urine screening was carried out in 625 women, yielding 59 isolates, achieving a prevalence of 9.44%. Results obtained in the different media are presented in Table 1. Highest sensibility was obtained on CHROMagar™ StrepB or Granada medium. Two isolates were not detected on Granada medium (non haemolytic GBS) and two on CHROMagar™ StrepB plates (low counting colonies).



CONCLUSION

GBS in urine samples is better detected on CHROMagar™ StrepB or Granada medium than in CNA or CLED agar. The last one, that is commonly used in urine cultures, shows a GBS recovery rate lower than 30%.

CHROMagar™ StrepB or Granada medium would improve the sensitivity to detect GBS carriers and CHROMagar™ StrepB would allow detection of haemolytic and non haemolytic GBS strains.



MEDIUM	POSITIVES (%) ≥ 10.000 cfu/mL	FALSE NEGATIVES	SENSITIVITY (%)
CHROMagar™ Strep B	57 (9.1%)	2	96.6
GRANADA	57 (9.1%)	2	96.6
CNA	45 (7.2%)	14	76.3
CLED	17 (2.7%)	42	28.8
TOTAL	59 (9.44%)		

Table 1. Results obtained in the different media