

Perpartum antibioprophyllaxis : comparison of Group B *Streptococcus* detection rates of two chromogenic media and blood agar for its isolation in pregnant women vaginal swabs.

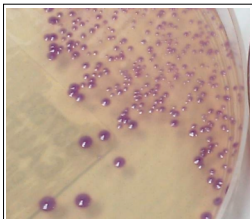
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Background. Prenatal detection of Group B *Streptococcus* by culture on the CHROMagar™ StrepB chromogenic medium, was presented on the RICAI 2009 by Charron *et al.*. The results could not be statistically analyzed since the samples were limited to 143 perpartum vaginal swabs, and other non pregnancy-related specimens. However, this medium seemed to be sensitive, predictive and fast.

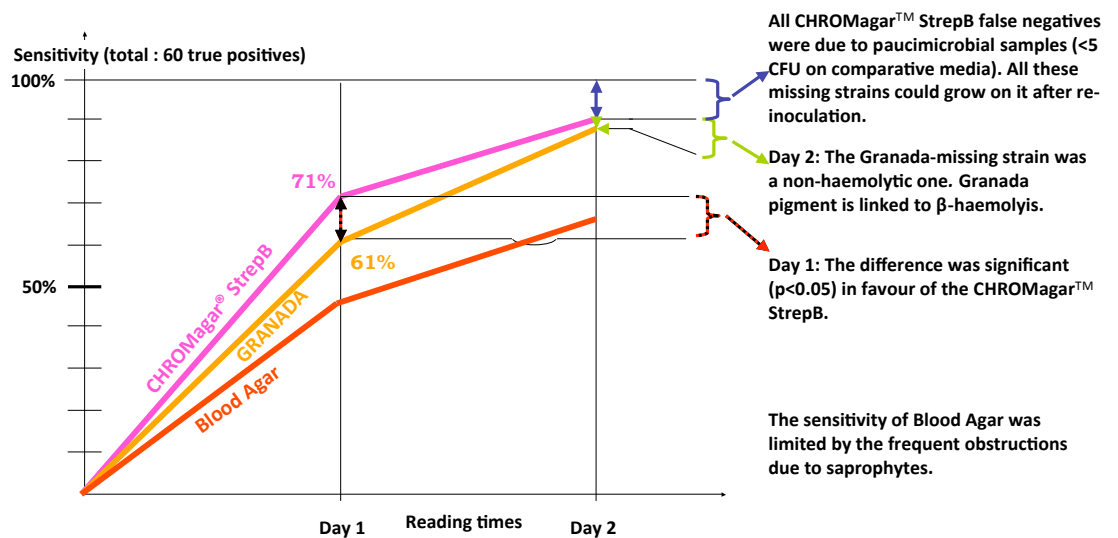
Patients. This study took place in the Hospital of Orléans (France) in 2009, including 528 consecutive vaginal swabs from pregnant women, who were addressed for prepartum screening, cerclage follow-up, or premature rupture of membranes. This study was an observation study.

The purpose of the present study was to evaluate the Day 1 and Day 2 detection rates of CHROMagar™ StrepB, Granada and blood agar media, for Group B *Streptococcus* isolation, including a statistically relevant number of samples.

Methods. Swabs were isolated on an aerobic blood agar plate (COH-BioMérieux), an anaerobic Granada agar and the aerobic CHROMagar™ StrepB. Every media were incubated at 37°C and read on Day 1 and Day 2.



Streptococcus B Colonies On CHROMagar™ StrepB. After aerobic incubation.
The mauve coloration of colonies is independent of the haemolytic properties.
(Picture from DM Poisson)



Results .

In sum, 60 *Streptococcus* B were isolated from 528 swabs (11.4%). Sensitivity of **CHROMagar™ StrepB** was 71% on Day 1 and 90% on Day 2. 79% of its positive results occurred on Day 1. The 10 false negatives of CHROMagar™ StrepB were due to paucimicrobial samples (<5 CFU on comparative media). Every missed strains could grow on it and yield the expected colour on Day 1 reading. Predictivity of CHROMagar™ StrepB was 100% on Day1 and 85% on Day 2.

Granada medium was significantly less sensitive on Day 1 : 61% (p<0.05). The most likely reason is, on CHROMagar™ StrepB the colonies are mauve as soon as they appear, while on Granada they first grow translucent and will exhibit their carotenoid colour only after a full 24h incubation. In usual routine the Day 1 reading most often allows only a 16 hours incubation. On Day 2, Granada was equivalent but failed to produce pigment from one non haemolytic strain.

Blood agar medium was significantly less sensitive than both chromogenic media : 47% on Day 1 and 67% on Day 2. This underperformance was mostly originating in obstructing saprophytes cultures.

Discussion.

Since the perpartum antibioprophyllaxis was enacted, restrictedly to Group B *Streptococcus*-carrying women (ANAES, 2001) (Schrag, 2002), the incidence of the Early Onset Disease was reduced down to 0,28 p.1000 live births (Jourdan-Da Sylva, 2008) (Van Dyke, 2009).

Nevertheless, a relevant number of women will still present in labour without an available Group B *Streptococcus* status (Van Dyke, 2009). For these women remains the need for a test, able to produce quickly a reliable result, in order to avoid the prophylaxis, which is mandatory in case of unknown status. Molecular techniques require a 24h-enrichment to achieve the same sensitivity as culture, and do not allow the follow up of the antibiotic susceptibility.

CHROMagar™ StrepB was the most sensitive on Day 1. It works in aerobic conditions. The availability of its colonies allows susceptibility testing to alternate antibiotics for penicillin-allergic women, and more generally, to look out for resistance apparition.

Literature References.

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