

history and laboratory investigations are clearly warranted in order to definitively identify MRSA colonisation.

Conflict of interest statement

None declared.

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Group B streptococcal colonisation in pregnant women: turnaround time of three culture methods

Madam,

Group B streptococci (GBS) are a major cause of perinatal and neonatal infection worldwide. Methods allowing fast and accurate detection of maternal intrapartum GBS colonisation are necessary. The Centers for Disease Control and Prevention recommend screening for vaginal introitus and anorectal colonisation of all pregnant women between 35 and 37 weeks gestation, using a selective broth medium Todd–Hewitt (SMB).¹ This method needs at least 48 h to give a positive or negative evaluation (without specific identification and susceptibility testing) for perinatal colonisation of pregnant women. A more rapid and sensitive method would be beneficial, especially when dealing with women who have had no prenatal care. Other rapid and sensitive methods, such as polymerase chain reaction, are not readily available for routine laboratories. There are new media that support and stimulate the growth of GBS and enable identification. Granada is a selective and differential medium that has been developed to detect the ability of GBS to produce an orange-red pigment anaerobically. Differing only in the proportion of agar 3 and 10 g/L, there are two types of media: Granada LB and Granada agar, respectively.² In Portugal, there are no official recommendations for screening pregnant women. At Hospital São Marcos – Braga, in 2005, the prevalence of colonisation of pregnant women who came to the hospital for delivery was 34.9%; in the same period, the incidence of neonatal infection was 9/1000 live births.³

These results in our hospital and the importance of a sensitive, timely detection of GBS-colonised pregnant women led to a comparative study of three culture methods: Granada medium, Granada LB and SMB. Regarding sensitivity, specificity, negative predictive value and efficiency test of the three methods, no significant statistical differences were found. SMB was more time-consuming and work-demanding and had a longer response time, because in 93% of the tests an adequate isolation of GBS was not possible. In the heavily contaminated specimens, the inhibition effect of the antibiotics present in SMB was somewhat inefficient and subculture contamination with *Enterococcus faecalis* and *Proteus* spp. were frequently observed. This subculture contamination may mask the presence of GBS and lead to the necessity of further subculture, thus delaying the

turnaround time. Granada agar was the most efficient method, with a sensitivity as high as 98.48%; it has the advantage of a prompt result after 24 h of anaerobic incubation. GBS orange-red colonies are clearly seen even in heavily contaminated specimens. The characteristic pigment, in Granada medium, is specific for GBS; therefore, more formal identification was not necessary. There are no GBS false-positive results based on pigment identification.^{2,4–6}

Similarly to Granada agar, Granada LB was a sensitive and specific test. Because it is incubated in air, it was possible to observe it whenever necessary without needing to alter the ambient atmosphere. So in a second study, the Granada LB turnaround time for detection of GBS in vaginal introitus and anorectal swabs was evaluated. Of the 309 specimens studied, 58 (18.7%) were positive for GBS. Table 1 summarises the results of the serial observations of Granada LB.

Granada LB showed that 41.37% of the specimens were positive for GBS after 10 h of incubation and 91.37% were positive after 24 h. Thus this method has a shorter turnaround time compared with the other methods. The Granada agar (because of its incubation in an anaerobic atmosphere) and SMB needed 48 h for a reported result. With Granada LB, it was possible to obtain positive results after 8 h incubation.

Another advantage is that it is possible to use it for direct inoculation by the clinician and later transport it to the laboratory. Heelan *et al.* has demonstrated that direct inoculation in Granada LB in the collection site allows an increased recovery of GBS, especially in lightly colonised women.⁵ Other studies support this idea, having an increased sensitivity from 90.3 to 97.6% when Granada LB was used for transport and detection of GBS.⁶

Penicillin remains the agent of choice for intrapartum antibiotic prophylaxis in non-allergic patients. As GBS isolates with confirmed resistance to penicillin have not been observed to date and because Granada medium is highly specific (100%) for GBS, there is no need to isolate GBS for

identification and susceptibility studies. This method therefore reduces the time of work, the need for reagents and the turnaround time, becoming very cost-effective.

In conclusion, we consider Granada LB a fast, easy, specific and highly sensitive method for the screening detection of GBS in vaginal introitus and anorectal specimens in order to identify GBS colonisation in pregnant women.

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Table 1 Results of the serial observations for group B streptococci after Granada LB incubation

Granada LB	4 h	8 h	10 h	24 h	48 h	Final result
Negative	307	291	274	252	251	251
Doubtful	2	7	10	4	2	–
Positive	–	11	24	53	56	58
Not observed	–	–	1	–	–	–
Total	309	309	309	309	309	309

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