Liquid Granada Medium for Detection of Group B Streptococci

Heelan et al. (5) recently presented data on the sensitivity of a liquid Granada medium (9) (GBS broth) for detection of *Streptococcus agalactiae*. We have tested this medium, and it contains, as Granada medium, starch, proteose peptone 3, methotrexate, a Good’s buffer, serum, glucose, and selective agents. So, we agree with the authors that detection of orange-red colonies in GBS broth is 100% specific for the presence of beta-hemolytic group B streptococci (GBS). Nevertheless, some statements in this paper need clarification.

The authors claim that sometimes Granada agar lacks sensitivity for GBS detection, but no comparison between GBS broth and Granada agar is reported. In the two references cited to support this claim (3, 7), it is acknowledged that the batches of Granada agar used were probably spoiled (10). Moreover, the flurry of references (1, 2, 4, 6, 8, 9, 14, 15) that support a very good sensitivity of Granada agar to detect GBS are not mentioned.

Regarding sensitivity of GBS broth, the figures reported are somewhat confusing. One-hundred fifty-eight GBS strains were recovered from 580 swabs, but only in 108 cases were red colonies detected, so GBS broth sensitivity is 68.3% instead of the 87.8% or 90.3% reported. GBS pigment was not observed in 35 tubes that later (after subculture) proved to be positive (25% of all positives), and this figure makes the usefulness of this medium for direct GBS detection doubtful. When (study 1) GBS broth was used as a detection medium, 9 of 75 GBS strains (12%) were completely lost (positive in subculture from LIM broth but negative in subculture from GBS broth). When (study 2) GBS broth was used as a detection and transport medium, 6 of 83 GBS (7%) were also completely lost. This failure to detect (even after subculture) some GBS-positive vaginorectal samples can be an important drawback of GBS broth. Another fact is the dramatic failure of LIM broth to recover GBS (21 of 83 positive samples were lost in study 2) found in Heelan’s work. This finding needs further evaluation, as enrichment in LIM broth is an accepted procedure for GBS detection in the Centers for Disease Control and Prevention guidelines (13).

Poor performance in detecting GBS could be explained by the fact that when liquid Granada media are kept refrigerated the starch precipitates (retrogradation) (16), producing an opaque white mass, where GBS colonies are sometimes barely noticeable. However, if not kept refrigerated the medium deteriorates in a few days (12). We have observed that when media containing folate antagonists (as methotrexatate) are used as transport media and swabs are kept in these media for several hours before starting incubation, the number of GBS CFU nosedives. This renders the use of such media as transport media unsafe. For these reasons, in our view, the use of liquid selective Granada media as transport media for detection of GBS colonization in pregnant women cannot be recommended.

REFERENCES


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