JOURNAL OF CLINICAL MICROBIOLOGY, Feb. 1996, p. 484
0095-1137/96/$04.00+0
Vol. 34, No. 2

Letters to the Editor

Additional Data about the Influence of an Inhibitory Factor on Growth of *Mycobacterium kansasii* in BACTEC 12B Medium

We read with interest the article of Conville et al. (2) concerning the possible presence in PANTA of a factor inhibiting the growth of *Mycobacterium kansasii* in BACTEC 12B medium.

After two isolates of *M. kansasii* from two patients showed slow growth in BACTEC 12B medium compared with their more rapid growth on solid media, the authors performed an in vitro study with eight *M. kansasii* isolates from eight patients. They found that nalidixic acid alone exerts some degree of inhibition on the growth of *M. kansasii.*

We made a retrospective 18-month study of *M. kansasii* isolates in order to assess the real impact of that finding in a clinical laboratory. The rate of recovery and time to detection of *M. kansasii* from clinical specimens were measured for the BACTEC TB system (12B medium) and conventional Lowenstein-Jensen (LJ) medium. Between January 1994 and June 1995, a total of 49 *M. kansasii* isolates (45 from respiratory specimens, 2 from stool specimens, and 2 from tissue biopsy specimens) from 17 patients were recovered. Of these, 47 (95.9%) and 41 (83.7%) were detected on BACTEC and on LJ medium, respectively. Of the 39 (79.6%) isolates recovered in both types of media, 31 (79.5%) grew first on BACTEC (mean for BACTEC, 11 days, range, 4 to 20 days, versus mean for LJ medium, 19 days, range, 9 to 41 days) and 5 (12.8%) grew in LJ medium (mean for LJ, 18 days, range, 14 to 22 days, versus mean for BACTEC, 23 days, range, 16 to 35 days). Three isolates were detected in both types of cultures at the same time. On the other hand, LJ medium did not grow eight *M. kansasii* isolates which did grow in the BACTEC system. This medium failed to isolate two *M. kansasii* isolates that grew on LJ medium. Therefore, we have determined the effect of the different concentrations (0.05, 0.1, and 0.2 ml) of PANTA (Becton Dickinson) on the growth of these two isolates not recovered in BACTEC. Inhibition of the growth was observed with $\geq$0.1 ml of PANTA, and only slow growth (1 week after growth on LJ medium) was detected with 0.05 ml of PANTA.

Our data confirm the findings of Conville et al. (2) regarding the effect of PANTA on the growth of *M. kansasii* in BACTEC 12B medium. These findings could have important clinical implications in some cases (e.g., blood cultures with PANTA or small amounts of specimens) in which the BACTEC system is the only medium included. Therefore, although BACTEC is the most efficient system for mycobacterium detection (1), our data support using both types of media simultaneously in the initial culture setup whenever possible.

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Authors' Reply

The findings of Alcaide et al. confirm and extend the results we reported previously (1). Their much larger series of 49 clinical isolates of *M. kansasii* included 5 which grew sooner in LJ medium than in BACTEC 12B medium and 2 which initially did not grow in BACTEC 12B medium at al. (The BACTEC medium was presumably supplemented with PANTA in each case.). These data by themselves are only suggestive of inhibition by a component of the 12B plus PANTA combination, as the differences in organism detection could be explained by differences in the amount of organism inoculated into the different media. However, further study by Alcaide et al. of the two isolates which did not initially grow in BACTEC 12B medium at all demonstrated complete growth inhibition at the concentration of PANTA usually employed and delayed growth at one-half the usual concentration. This finding suggests that the delayed growth of their other five isolates in 12B compared with growth in LJ may have been due to inhibition by a component of PANTA (presumably the nalidixic acid). It should not be overlooked, however, that the majority of their isolates were detected first in BACTEC 12B medium, with 8 of their 49 isolates not detected in LJ medium at all; this aspect of their results demonstrates the usefulness of BACTEC 12B medium for the rapid detection of most isolates of *M. kansasii.* Alcaide et al. recommend the use of both LJ medium and BACTEC 12B medium to optimize the isolation of *M. kansasii* from clinical specimens; we had also noted the importance of including a nonselective medium in the initial culture setup. The only caveat we would raise relates to their comment about blood cultures with PANTA; as blood is ordinarily sterile, we would not recommend routinely adding PANTA to blood cultures in either BACTEC 12B or 13A medium. The manufacturer of BACTEC 13A medium (Becton Dickinson Diagnostic Instrument Systems), a medium specifically designed for mycobacterial blood culture, suggests the addition of PANTA only in cases of possible polymicrobic infections or in bottles with bacterial contamination (2).

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