

PS-71729-10 A comparison of MGIT versus LJ culture by smear status in pulmonary TB in gold miners in South Africa

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Objective: To compare the use of Mycobacterial Growth Indicator Tube (MGIT) and Löwenstein-Jensen (LJ) culture with respect to yield, time to positivity and contamination rate.

Methods: Sputum specimens obtained during screening prior to TB preventive therapy and from TB suspects with no prior history of TB presenting to health services were examined by fluorescence microscopy and cultured on MGIT and LJ. Organisms were identified using MPB64 monoclonal antibody assay and standard biochemical tests.

Results: Of the 702 samples, 89% were smear-negative. For smear negatives, the percentage contaminated on LJ and MGIT was 15.6% and 21.0%, and amongst smear positives it was 12.3% and 1.4%, respectively. Yield of MGIT and LJ, time to positivity and organism identification, by smear status, are summarized in Table 1 below. Among 76 MGIT positive cultures, 2(2.6%) samples were identified as *Mycobacterium tuberculosis* (MTB) with MPB64 but *M. kansasii* with standard biochemical tests.

Conclusion: MGIT increases the culture positive yield among smear negative isolates but not for smear positives. For both smear negative and positives, the time to positivity is shorter for MGIT than LJ. There is little benefit to doing both MGIT and LJ cultures.

	Overall N = 398	Smear negative n = 341	Smear Positive n = 57
MGIT and LJ results (column %)*			
Positive on MGIT and LJ, n (%)	97 (24.4)	42 (12.3)	55 (96.5)
Positive on MGIT only, n (%)	39 (9.8)	37 (10.8)	2 (3.5)
Positive on LJ only, n (%)	2 (0.5)	2 (0.6)	0
Negative on MGIT and LJ, n (%)	260 (65.3)	260 (76.2)	0
Time to positivity (days)**			
On MGIT, median (range)	12 (4-59)	15 (4-59)	8 (4-31)
On LJ, median (range)	19 (4-54)	26 (8-54)	15 (4-53)
Organism identification (on MGIT)			
MTB	46	20	26
Overall NTMs	29	22	7
<i>M. kansasii</i> , n (%)	15 (51.7)	8 (36.4)	7 (100)
<i>M. avium</i> complex, n (%)	7 (24.1)	7 (31.8)	0
NTM (unspecified), n (%)	7 (24.1)	7 (31.8)	0

* Restricted to samples where both MGIT and LJ results available.

** Restricted to samples that were positive on MGIT and positive on LJ.