

SENSITIVITY OF THE THIN LAYER AGAR METHOD COMPARED TO MGIT 960 FOR THE EARLY DETECTION OF *M. TUBERCULOSIS* IN CLINICAL SAMPLES

Anandi MARTIN^{1,2}, Junko Nakatsuka², Kristien Eggermont¹, Jaime Robledo³, Francis Varaine², Juan Carlos Palomino¹, Françoise Portaels¹

¹Institute of Tropical Medicine, Antwerp, Belgium; ²Médecins Sans Frontières, Paris, France;

³Corporación para Investigaciones Biológicas, and Universidad Pontificia Bolivariana, Medellin, Colombia

Conventional culture of sputum samples on Löwenstein-Jensen (LJ) medium is more sensitive than smear microscopy, but requires several weeks to give results, while the more rapid automated MGIT 960 liquid culture system or molecular tests are too expensive and not readily available in resource-limited settings. The Thin Layer Agar (TLA) method is a new and promising low-cost approach for culture of sputum samples that reduce the time for tuberculosis diagnosis. The method is based on microscopic detection of early mycobacterial growth using a solid medium. TLA has already been evaluated in a multicentre study and compared to culture on LJ. In the present study we compared the sensitivity and time to detection of growth in TLA as compared to MGIT 960. Sputum samples were collected, decontaminated, and inoculated in parallel in the MGIT 960 system and TLA. The time required to detect positivity was compared in both system. TLA was able to detect growth within 9–11 days allowing at the same time the identification of *M. tuberculosis* by microscopical observation of colony morphology and growth in the presence of PNB (para-nitrobenzoic acid). Sensitivity obtained by TLA was comparable to the MGIT 960 system. TLA is an inexpensive and rapid alternative method for laboratories in low-income countries.