Comparision of Conventional Solid and Rapid Liquid Culture Method to Grow Mycobacterium Tuberculosis

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It is very important to detect Mycobacterium tuberculosis in patient samples to confirm tuberculosis. Smear microscopy is the fastest and the most easy method for this purpose. However, its sensitivity is lower than culture methods. This is because, at least in some parts, it can not distinguish live or dead bacteria and needs certain numbers of bacteria in samples (over 5,000 bacteria in 1 ml). This made culture as a golden standard to diagnose of tuberculosis. Because of its slow growing character, usually it takes several weeks to 2 months in solid media to confirm the results and early diagnosis based on culture other than solid media has been developed. ITRC introduced one liquid media based culture system (BacT/ ALERT) years ago and established new liquid culture system (MGIT960) an year ago. We compared both fast culture systems to smear microscopy and conventional egg based solid media. We also adapted fluorescent smear in conjunction with ZN smear method. As reported previously, fluorescent smear produced enhanced sensitivities (10%) especially when there are small numbers of bacteria scored as scanty. MGIT960 could detect slightly more than BacT/ALERT in LJ media culture positives (119 vs 106 in 130 LJ culture positives) but in LJ negatives, BacT/ALERT detect more than MGIT960 (20 vs 13). Contaminations during culture in liquid media were higher than LJ media (15:15:8, MGIT960:BacT/ALERT:LJ). This data will be updated on the poster.