

Concentrated specimen smear microscopy utilising a polymer membrane sandwich filtration vessel for the detection of acid-fast bacilli in health facilities in Sabah, East Malaysia

ABSTRACT

A simple, ready-to-use concentrated specimen smear microscopy method employing a nanometer silicon polyvinylidene fluoride (PVDF) polymer membrane sandwich filtration vessel to concentrate acid-fast bacilli (AFB) in samples (SFV-CSSM, Hunan-Tech New Medical System Co. Ltd. China) was compared with direct sputum smear microscopy (DSSM) to determine its performance using culture on modified Ogawa agar as reference. The results for 4114 clinical samples collected from health facilities in Sabah were interpreted with reference to culture results, sample collection-transportation conditions and clinical data including responses to anti-TB drug treatment. The SFV-CSSM showed higher sensitivity than DSSM (79.4% versus 60.5%) and less background interference. Its ability to detect low levels of AFB at an affordable cost makes it an excellent tool for the screening of paucibacillary samples as well as for active case finding in TB control programs.