

## Comparative study of ZN Microscopy and LED Fluorescent microscopy along with solid culture for the diagnosis of pulmonary Tuberculosis

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### Abstract

**Background:** The sputum microscopy is most effective method for detection of pulmonary tuberculosis in endemic countries. The Ziehl Nelsen (ZN) staining is highly specific but less sensitive compared to fluorescent microscopy. LED Fluorescent microscopes have now replaced the Mercury vapor lamp fluorescent Microscopes. The objective of the study was to assess the sensitivity and specificity of ZN microscopy and Light Emitting Diode Fluorescent microscopy (LED FM) among the pulmonary tuberculosis suspects. **Methods:** A spot and an early morning sample were collected in a sterile container from pulmonary tuberculosis suspects. The specimen was processed under ZN staining, fluorescent staining and inoculated in Lowenstein Jensen Media after decontamination. **Results:** Of the 383 pulmonary tuberculosis suspects, 102 (26.6%) were positive for Mycobacterium tuberculosis by culture, 12 (3.1%) contaminated and 269 (70.3%) culture negative after 8 weeks. Sensitivity and specificity of LED FM were 80.17% and 97.4% compared to ZN microscopy was 62.7% & 98.14% respectively. **Conclusions:** LED fluorescence microscopy is a reliable alternative to conventional methods i.e. ZN microscopy in rural and high workload settings. Furthermore LED FM is cost effective.