Comparison of Flurochrome , Ziehl-Neelsen and Tan Thiam Hok Staining Methods for Detection of *Mycobacterium tuberculosis* in Sputums of Patients with Pulmonary Tuberculosis

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Abstract

Background and objectives: Direct smear microscopy, because of its simplicity, rapidity, low cost and relatively sensitive is a suitable method to detecting pulmonary tuberculosis. This experiment was aimed at determining the best method for detecting Mycobacterium tuberculosis among three kinds of staining methods: Fluorochrome, Ziehl Neelsen and Tan Thiam Hok .

Material and Methods: The sputum specimens (N=714) were obtained from people with suspected pulmonary tuberculosis and identified by three staining procedures. We determined the sensitivity, specificity, and the positive and negative predictive value of them and compared results by growth on Lowenstein-Jensen medium as gold standard.

Results: Ninety-three (13%) of 714 sputum specimens were positive in culture method. The sensitivity of Tan Thiam Hok, Ziehl Neelsen and Fluorochrome are 89.2%, 91.3% and 95.6%, respectively, while their specificity and positive predictive value were 100%. Their negative predictive values were 98.3%, 98.7 %, 99.3 %, respectively.

Conclusion: We conclude that Ziehl Neelsen can still be a reliable procedure for detecting AFB in sputum specimens because it has the appropriate sensitivity and specificity in comparison with another method of staining.

Key words: pulmonary tuberculosis, Tan Thiam Hok staining, Ziehl-neelsen staining , Flurochrome staining