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Factors Predicting Sputum Smear Conversion and Treatment Outcomes in New Smear-Positive Pulmonary Tuberculosis

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Abstract

Background: Epidemiological studies indicated that the proportion of TB patients who remained smear-positive after two months of treatment could be greater than 20%. The lack of smear conversion in the second month of treatment was one of the predictors of treatment failure and relapse.

Objective: To determine factors associated with the persisting positive smear after two months of treatment and its value in predicting treatment failure.

Material and Method: A 3-year retrospective cohort study was conducted in a 1,200-bed government hospital in Thailand. New smear-positive tuberculosis patients who had pretreatment drug susceptibility test, the result of 2-month sputum smear, and treatment outcomes were selected. The pretreatment drug susceptibility pattern and statistically differences on variables between groups of patients were described.

Results: Three hundred fifty six patients were included in the present study. The level of pretreatment isoniazid resistance and multi-drug resistance were 13.8% and 3.1% respectively. Factors associated with the 2-month positive smear were male sex, high initial sputum acid-fast bacilli grades, and cavitary diseases. The presence of human immuno-deficiency virus infection, drug resistance and the 2-month positive smear were significantly associated with treatment failure.

Conclusion: Male sex, high initial sputum acid-fast bacilli grades, and cavitary diseases were factors associated with the 2-month positive smear and increasing risk of treatment failure.

Keywords: Sputum conversion, Treatment failure

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