

ABSTRACT

Comparison of Sputum Culture Conversion Time in Drug Resistant Tuberculosis With Diabetes Melitus and Without Diabetes Melitus in RSUD Dr. Soetomo from 2014 to 2015 Period

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Diabetes melitus is known to be Tuberculosis comorbid factor, but the relationship between diabetes and tuberculosis is still being studied and there were differences in the results of recent studies.. Diabetes plays a role in decreasing immunity and worsen the condition of patients with drug resistant tuberculosis. The aim of this study was to research the comparison of sputum culture conversion time in patients drug resistant tuberculosis with diabetes and those without diabetes. This research was conducted by retrospective cohort method using medical record analysis at MDR-TB division of Pulmonology Department at dr. Soetomo Public Hospital for all data in range of January 2014 to December 2015.

Result: Drug resistant tuberculosis patients with diabetes had a longer sputum culture conversion time than drug resistant patients without diabetes. This difference is statistically significant ($p = 0.048$).

In drug resistant tuberculosis patients with diabetes, hyperglycemia causes a decrease in alveolar macrophages activation caused by AGEs (Advanced Glycation End Products), a glycation in binding sites protein that inhibit formation of granulomas in the lung. There also occurs cytokine disturbance produced by Th-1 resulting in increased impaired IFN- γ and TNF- α but not with increased of function. This causes the burden of bacteria to increase and the immune system cannot kill the bacteria effectively so it may lead to longer sputum culture conversion time.

In conclusion, there was a difference between culture conversion time in drug resistant tuberculosis with diabetes patients compared with drug resistant tuberculosis patients without diabetes.

Keywords : *drug resistant tuberculosis, diabetes melitus, sputum culture conversion, AGEs*