CUT OFF VALUE PLEURAL FLUID ADENOSINE DEAMINASE FOR TUBERCULOSIS PLEURAL EFFUSION DIAGNOSIS IN THE DR. SOETOMO HOSPITAL SURABAYA

ABSTRACT

Introduction. Tuberculosis is the most common cause of pleural effusion in developing countries such as Indonesia. Pleural effusion Tuberculosis (PET) is the commonest manifestation of extra-pulmonary TB infection. There is often a delay in the diagnosis of TB because it is usually asymptomatic, therefore the patient does not go to the health facility. *Mycobacterium tuberculosis* (MTB) culture is a gold standard for diagnosing TB, unfortunately it takes a longer time and often the results are negative. DNA detection of MTB is expensive and it depends on the skill of examiners and equipment availability. Therefore, fast and accurate examination methods are required. This study aims to determine the *cut-off* value of pleural fluid adenosin deaminase (ADA) for determining the diagnosis of tuberculosis pleural effusion in the Dr. Soetomo Hospital Surabaya.

Method. Research subjects were 126 patients with pleural tuberculosis and non tuberculosis treated in the Pulmonology Ward of the Dr. Soetomo Hospital, Surabaya. This research was analytical observational with cross-sectional design.

Examination of ADA activity was performed in pleural fluid with non-enzymatic photometric method using a reagent Erba Giusti and XL 600 instrument.

Results. Out of 126 patients, 47 patients were diagnosed as TB (37.3%) while 79 patients were diagnosed as non TB (62.7%). The mean ± SD of ADA activity was higher in the TB group (57,509 ± 37.567 U/L) than non-TB (14.932 ± 19.599 U/L). Area under the curve (AUC) for ADA was 0.913. ADA optimal cutoff values of pleural fluid was 28.5 with a sensitivity of 80.9% and a specificity of 88.6%, PPV of 80.9% and NPV of 88.6%.

Conclusion. ADA activity in TB patients was higher than non TB (57,509 ± 37.567 U/L versus 14.932 ± 19.599 U/L). ADA pleural fluid optimal cutoff value was 28.5, with a sensitivity of 80.9% and a specificity of 88.6%.

Key words. Adenosine deaminase, pleural fluid, diagnosis, tuberculosis pleural effusion.