ABSTRACT

ANALYSIS OF IFN-γ AND IL-10 LEVELS AS INFLAMMATORY MARKERS AND THERAPEUTIC RESPONSE TO ANTI-TUBERCULOSIS IN MDR TB PATIENTS

(Study at MDR-TB Unit of Dr. Soetomo Teaching Hospital Surabaya)

Background: Multidrug-Resistant Tuberculosis (MDR-TB) is caused by an organism that is resistant to at least isoniazid and rifampicin. Immune response against *Mycobacterium tuberculosis* infection is related to the serum levels of IFN-γ and IL-10 biomarkers. The functions of interferon-γ are to activate macrophages, to stimulate antimicrobial molecules as reactive oxygen species (ROS) and nitric oxide (NO) and to inhibit interleukin-10 marker. Interleukin-10 acts inhibiting the production of IFN-γ. It has an immunoregulatory function. IFN-γ and IL-10 biomarkers play an important role in predicting the prognosis of MDR-TB.

Objective: The aim of this study was to analyze of IFN-γ and IL-10 levels related to the clinical data of “Bandim TB Score”.

Methods: The study was an observational method by cross sectional design. There were 29 patients who received standard therapy of MDR-TB for a month to 24 months. The serum concentrations of IFN-γ and IL-10 markers were determined at the start of the study and 4 weeks after the standard therapy of TB MDR. Data was analyzed by ELISA method. This study was performed during July until December 2017 period and had been approved by Ethical Committee of Dr. Soetomo Teaching Hospital Surabaya.

Results: The mean serum levels of IFN-γ and IL-10 biomarkers after four weeks therapy showed a decrease by 39.14±139.12 pg/mL (p > 0.05) and 33.93 ± 109.20 pg/mL (p > 0.05), respectively. It was also supported by the Bandim TB Score that resulting in 93.11% of patients in this study had no change in clinical condition.

Conclusions: The results showed that the serum levels of IFN-γ and IL-10 biomarkers at intensive and advanced phases in patients who received MDR-TB regimentation after four weeks therapy did not change significantly which supported by Bandim TB Score. The inflammatory process was still progressive in MDR-TB patients.

Keyword: IFN-γ, IL-10, MDR-TB, Bandim TB Score