

Interferon level from lymphocytes cell culture that induced with esat-6 as a diagnostic marker for latent tb infection (ltbi)

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Abstract

Treatment of active TB is not sufficient to eliminate the disease, because individuals with *latent TB infection* (LTBI) outnumber those with active TB, and LTBI can progress to active disease at any time. The diagnosis and treatment of individuals with LTBI who are at higher risk of developing active TB is an important goal of TB control programs in developed countries. However, diagnosis of LTBI is problematic because the tuberculin skin test (TST), which has been widely used for centuries, has several limitations. The aim of this study was to obtain cut-off value of IFN- γ that can be used as guidelines for the diagnosis of LTBI. The diagnosis is confirmed by the cut-off, a history of close contact and no clinical and radiological manifestations.

The study was conducted on 120 subjects consisting of 40 patients with active TB, 40 healthy and 40 subjects with suspected latent TB.

Lymphocytes were isolated from whole blood using ficoll technique, cultured on RPMI complete medium and induced with Esat-6 for 6 days. IFN- γ levels were examined from the supernatant by sandwich Elisa technique. Statistical analysis was used to determine the cut-off value of IFN- γ derived from healthy and tuberculosis patients. In this study, the concentration of IFN- γ obtained from patients with active TB is higher than that found in the other 2 groups, ie $1,044 \pm 0,23$ ng/ml, whereas in the group with suspected latent TB is $0,745 \pm 0,28$ ng/ml and the healthy group was $0,455 \pm 0,20$ ng/ml. The highest suitability index (Kappa value) that can differentiate between healthy and diseased groups is 0,925 for the concentration of IFN- γ 0,792 ng/ml. So that the levels of IFN- γ 0,792 ng/ml was considered as the cut-off value. Based on this value, from 40 suspected cases of latent TB found as many as 17 people (42.5%) and 23 were not latent TB (57.5%).

Based on this study can be concluded that the levels of IFN- γ from lymphocytes cells cultured was 0,792ng/ml. It was the cut-off value for diagnosis of LTBI, but should be combined with a history of close contact and clinical/radiological data. .



Biography

Andani Eka Putra I has completed his PhD at the age of 42 years from Gadjah Mada University. I am the director of Diagnostic and Research Centre for Infectious Disease, Andalas University and Research Director at Andalas Hospital, Padang, West Sumatera, and Indonesia. My research focus is molecular, immunology and biotechnology for infectious disease. The last research is Tuberculosis - MDR epidemiology in West Sumatera that funded by Peer Health project – NIH US. I have published more than 10 papers in reputed journals and have been serving as an editorial board in some university journal in Indonesia.

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