

Aktivitas Enzim Fosfatase Asam Makrofag Pasien Tuberkulosis Resisten Obat Serta Kaitannya dengan Kemampuan Fagositosis Dibandingkan dengan Tuberkulosis Laten dan Subjek Sehat = The Activity of Acid Phosphatase Enzymes Monocyte Derived Macrophages in Drug-Resistant Tuberculosis Patients and Their Relation with Phagocytic Ability Compared to Latent Tuberculosis and Healthy Subject

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Abstrak

Pendekatan sistem imun pada pejamu *M. tuberculosis* merupakan salah satu pilihan dalam pengembangan terapi tuberkulosis, terutama pada kasus tuberkulosis (TB) resisten obat. Tujuan penelitian ini adalah untuk menganalisis perbedaan fungsi makrofag pada penderita TB resisten obat dibandingkan dengan kontak erat yang terinfeksi laten dan sehat. Sel Monosit Darah Tepi (SMDT) diisolasi dan dikultur selama 7 hari. Fagositosis dinyatakan jika terdapat minimal satu sel darah merah domba tampak melekat pada membran makrofag. Kemampuan lisosom diperiksa dengan uji aktivitas enzim fosfatase asam. Enam pasien TB-RO dan 18 kasus kontak erat (8 TB laten; 10 sehat) di RS Universitas Indonesia direkrut sebagai subjek penelitian. Hasil menunjukkan bahwa aktivitas fagositosis kelompok infeksi laten lebih tinggi dibandingkan kelompok sehat dan TB RO (one-way ANOVA, $p < 0,05$). Aktivitas enzim fosfatase asam lebih tinggi pada kelompok TB RO. Perbedaan fungsi makrofag ini diharapkan dapat menjadi referensi selanjutnya dalam terapi TB RO ataupun terapi pencegahan.

.....The immune system approach to the host of *M. tuberculosis* is an option in developing tuberculosis therapy, especially in drug-resistant tuberculosis (DR-TB) cases. This study aimed to analyze the differences in macrophage function in drug-resistant TB patients compared to close contacts who were latently infected and healthy. Peripheral Blood Mononuclear Cell (PMBC) was isolated and cultured for seven days. Phagocytosis is expressed when at least one sheep red blood cell appears attached to the macrophage membrane. The ability of lysosomes was examined by testing the activity of the acid phosphatase enzymes. Six DR-TB patients and 18 close contact cases (8 LTBI; 10 healthy) at Universitas Indonesia Hospital were recruited as research subjects. The results showed that the phagocytosis activity of the latent infection group was higher than that of the healthy and TB RO groups (one-way ANOVA, $p < 0.05$). Acid phosphatase activity was higher in the DR-TB group. The difference in macrophage function is expected to be a further reference in DR-TB treatment or preventive therapy.