



ORIGINAL ARTICLE

Levels of TGF- β Serum Positively Correlated with Levels of IgM Anti PGL-1 In Household Contacts of Multibacillary Leprosy Patients

Putu Yunita Primasari¹, Luh Made Mas Rusyati^{1*}, I Gusti Ayu Agung Dwi Karmila¹, Ketut Kwartantaya Winaya¹, Nyoman Suryawati¹, Ni Luh Putu Ratih Vibriyanti Karna¹

¹Department of Dermatology and Venerology, Faculty of Medicine, Udayana University, Prof. Dr. IGNG Ngoerah Central General Hospital Denpasar, Bali, Indonesia, 80114

 rusyatiluhmas@yahoo.co.id

 <https://doi.org/10.56186/jbk.xxx>

ABSTRACT

Background

Leprosy is a progressive chronic infectious disease. Phenolic glycolipid-1 (PGL-1) is an antigen of *Mycobacterium leprae* which can trigger the host's antibody response. Transforming growth factor- β (TGF- β) plays an immunosuppressive role when host exposed to PGL-1 antigen or other *M. leprae* antigens. This study aims to know correlation of TGF- β levels with IgM anti PGL-1 levels in household contacts of multibacillary leprosy patients.

Methods

Analytical observational study with a cross-sectional approach. The sample consisted of 48 household contact subjects and 24 non-household contact subjects aged 15-65 who were selected through consecutive sampling according to the inclusion and exclusion criteria. Samples of 3 milliliters of venous blood were taken, which would then be examined for IgM anti PGL-1 and TGF- β with the ELISA kit. Data analysis was carried out using SPSS version 23, and p-value <0.05 was significant.

Results

The average level of IgM anti PGL-1 in household contact group was 685.46 ± 290.79 u/ml, while in non-household contact group, it was 345.50 ± 206.58 u/ml. The average TGF- β level in household contact groups was 256.69 ± 127.41 pg/ml, while in non-household contact group was 144.85 ± 36.73 pg/ml. This study found a moderate positive relationship ($r=0.450$, $p<0.001$) between levels of TGF- β and IgM anti PGL-1.

Conclusions

IgM anti PGL-1 and TGF- β levels in household contacts are higher than in non-household contacts with a significant difference. There is a moderate positive significant relationship between levels of TGF- β and IgM anti PGL-1.

Keywords: Leprosy; Contacts, IgM anti PGL-1; TGF- β

ABSTRAK

Latar Belakang

Kusta merupakan penyakit menular kronik progresif. *Phenolic glycolipid-1* (PGL-1) merupakan komponen antigen dari *Mycobacterium leprae* yang memicu respon antibodi dari penjamu. *Transforming growth factor-β* (TGF-β) berperan immunosupresif saat tubuh terpapar antigen PGL-1 maupun antigen *M. leprae* yang lain. Penelitian ini bertujuan untuk mengetahui korelasi kadar TGF-β dengan kadar IgM anti PGL-1 pada narakontak serumah pasien kusta tipe multibasiler.

Metode

Studi observasional analitik dengan pendekatan potong lintang. Sampel pada penelitian ini terdiri dari 48 subjek narakontak dan 24 subjek bukan narakontak berusia 15-65 tahun yang dipilih melalui *consecutive sampling* sesuai kriteria inklusi dan eksklusi. Sampel dilakukan pengambilan 3 mililiter darah vena yang kemudian diperiksa kadar IgM anti PGL-1 dan TGF-β dengan kit ELISA. Analisis data dengan SPSS versi 23 dan nilai $p < 0.05$ bermakna signifikan.

Hasil

Rerata kadar IgM anti PGL-1 kelompok narakontak yaitu $685,46 \pm 290,79$ u/ml sementara pada kelompok bukan narakontak yaitu $345,50 \pm 206,58$ u/ml. Rerata kadar TGF-β serum kelompok narakontak yaitu $256,69 \pm 127,41$ pg/ml sementara pada kelompok bukan narakontak yaitu $144,85 \pm 36,73$ pg/ml. Penelitian ini mendapatkan hubungan positif sedang nilai ($r=0,450$, $p < 0,001$) antara kadar TGF-β serum dengan kadar IgM anti PGL-1.

Kesimpulan

Kadar IgM anti PGL-1 dan kadar TGF-β serum pada narakontak lebih tinggi dari bukan narakontak dengan perbedaan yang signifikan. Terdapat hubungan positif sedang yang signifikan antara kadar TGF-β serum dan kadar IgM anti PGL-1.

Kata Kunci: Kusta; Narakontak; IgM anti PGL-1; TGF-β