

Tesis

**KORELASI PROFIL LIPID DENGAN INTERLEUKIN-12
PADA DIABETES MELITUS TIPE 2**



**PROGRAM PENDIDIKAN DOKTER SPESIALIS I PATOLOGI KLINIK
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ABSTRAK

Latar Belakang: Dislipidemia pada diabetes melitus (DM) dapat menimbulkan kelainan kardiovaskular. Interleukin-12 (IL-12) merupakan sitokin proinflamasi dan meningkat pada DM tipe 2 berkontribusi terhadap terjadinya inflamasi hingga perkembangan plak aterosklerosis. Aterosklerosis pada DM tipe 2 disebabkan hiperglikemia, hiperlipidemia, hiperinsulinemia, dan stres oksidatif menyebabkan disfungsi endotel. Tujuan penelitian mengetahui korelasi profil lipid dengan IL-12 pada DM tipe 2.

Metode: Penelitian analitik potong lintang terhadap 30 pasien DM tipe 2 yang memenuhi kriteria inklusi dan eksklusi serta melakukan pemeriksaan darah di Instalasi Laboratorium Sentral RSUP Dr. M. Djamil Padang September 2016-Agustus 2017. Pemeriksaan profil lipid (kolesterol total, *high density lipoprotein*/HDL, trigliserida, *low density lipoprotein*/LDL) dengan kolorimetrik enzimatik, IL-12 di Laboratorium Biomedik Fakultas Kedokteran Universitas Andalas dengan *sandwich* ELISA. Data dianalisis dengan korelasi Spearman, bermakna jika $p<0,05$.

Hasil: Rerata kadar kolesterol total, HDL, trigliserida dan LDL berturut-turut pada DM tipe 2 adalah $204,2 \pm 42,8$ mg/dL; $46,8 \pm 9,3$ mg/dL; $57 \pm 53,4$ mg/dL; $132,97 \pm 41,0$ mg/dL. Rerata kadar IL-12 pada DM tipe 2 adalah $160,15 \pm 99,05$ pg/mL. Uji korelasi Spearman menunjukkan korelasi kolesterol total, HDL, trigliserida dan LDL dengan IL-12 berturut-turut adalah $r= 0,228$ ($p=0,225$); $r= -0,234$ ($p= 0,212$); $r= 0,415$ ($p= 0,031$); $r= 0,215$ ($p= 0,291$) dan analisis regresi linear menunjukkan korelasi positif sedang dan bermakna antara kadar trigliserida dengan IL-12 ($r=0,512$; $p<0,05$).

Simpulan: Terdapat korelasi positif sedang antara trigliserida, positif lemah antara kadar kolesterol total dan LDL dengan IL-12. Serta korelasi negatif lemah antara HDL dengan IL-12 pada DM tipe 2.

Kata Kunci: diabetes melitus tipe 2, interleukin-12, profil lipid

CORRELATION OF LIPID PROFILE WITH INTERLEUKIN-12 IN TYPE 2 DIABETES MELLITUS

ABSTRACT

Background: Dyslipidemia is one of the common disorders which is seen in most of the diabetes mellitus (DM) patients causes cardio vascular disorders. Interleukin-12 (IL-12) is an important inflammation cytokine and its concentration is elevated in type 2 DM (T2DM) which may contribute in inflammation and accelerates the development of atherosclerotic plaque formation. Atherosclerosis in T2DM is caused by hyperglycemia, hyperlipidemia, hiperinsulinemia and oxidative stress that lead to endothelial dysfunction. The aim of this study to determine the correlation of lipid profile with IL-12 in T2DM.

Methods: This was an analytical study with cross-sectional design in 30 patients T2DM meet the inclusion and exclusion criteria and conduct blood tests at the Central Laboratory Instalation of Dr. M. Djamil Hospital Padang in September 2016-August 2017. Level of lipid profile performed by enzymatic colorimetric method. Level of IL-12 was performed by sandwich ELISA in Biomedic Laboratory Medical Faculty of Andalas University. Spearman correlation was used, significant if $p < 0,05$.

Results: The mean levels of total cholesterol, high density lypoprotein, (HDL), tryglicerides and low density lypoprotein (LDL) in T2DM were $204,2 \pm 42,8$ mg/dL; $46,8 \pm 9,3$ mg/dL; $57 \pm 53,4$ mg/dL; $132,97 \pm 41,0$ mg/dL. The mean level of IL-12 in T2DM is $160,15 \pm 99,05$ pg/mL. Spearman correlation test of total cholesterol, (HDL), tryglicerides and (LDL) with IL-12 are $r = 0,228$ ($p = 0,225$); $r = -0,234$ ($p = 0,212$); $r = 0,415$ ($p = 0,031$); $r = 0,215$ ($p = 0,291$) and analysis linear regresion showed a moderate correlation between the levels tryglicerides and Il-12 with $r = 0,512$ and $p < 0,05$.

Conclusion: There is moderate positive correlation between tryglicerides, weak between total cholesterol and LDL with IL-12. Negative correlation between HDL with IL-12 in T2DM.

Keywords: Interleukin-12, Lipid profile, Type 2 Diabetes Mellitus.