

**KORELASI ADIPONEKTIN, PROTEIN C-REAKTIF, DAN
RASIO ADIPONEKTIN PROTEIN C-REAKTIF
DENGAN *CASTELLI RISK INDEX-II* PADA
INDIVIDU DEFISIENSI VITAMIN D**



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KORELASI ADIPONEKTIN, PROTEIN C-REAKTIF, DAN RASIO ADIPONEKTIN PROTEIN C-REAKTIF DENGAN *CASTELLI RISK INDEX-II* PADA INDIVIDU DEFISIENSI VITAMIN D

ABSTRAK

Latar Belakang: Defisiensi vitamin D berhubungan erat dengan penyakit kardiovaskular (PKV). Inflamasi kronis dan aterosklerosis merupakan faktor utama aterosklerosis, berperan dalam patogenesis PKV. Adiponektin dan protein C-reaktif memiliki efek berlawanan terhadap inisiasi dan progresivitas aterosklerosis, serta berperan penting sebagai prediktor PKV. Penelitian ini bertujuan mengetahui korelasi adiponektin, protein C-reaktif, dan rasio adiponektin protein C-reaktif dengan *Castelli risk index-II* (CRI-II) pada individu defisiensi vitamin D.

Metode: Penelitian analitik dengan rancangan potong lintang dilakukan terhadap 59 individu defisiensi vitamin D di RSUP Dr. M. Djamil Padang mulai Januari 2020 hingga Maret 2021. Pemeriksaan 25-hidroksivitamin D total, adiponektin, *high sensitivity-C-reactive protein* (hs-CRP) menggunakan metode ELISA. Pemeriksaan K-LDL menggunakan metode tidak langsung dengan formula Friedewald. Pemeriksaan K-HDL menggunakan metode kolorimetri enzimatis homogen. Rasio adiponektin protein C-reaktif dan CRI-II diperoleh melalui perhitungan. Data dianalisis dengan uji korelasi Pearson, bermakna jika $p < 0,05$, selanjutnya dilakukan uji multivariat regresi linear.

Hasil: Rerata umur subjek penelitian 34 tahun, rentang 23-57 tahun. Subjek penelitian terbanyak perempuan, 50 orang (85%). Rerata adiponektin, protein C-reaktif, K-LDL, K-HDL, CRI-II adalah 4,38(2,51) $\mu\text{g/mL}$, 4,17(2,86) mg/L , 121,8(30,1) mg/dL , 47,9(11,0) mg/dL , 2,7(0,9) dan median rasio adiponektin protein C-reaktif adalah 1,2 (0,2-47,0). Analisis korelasi menunjukkan adiponektin berkorelasi negatif sedang ($r = -0,502$, $p = 0,000$) dan rasio adiponektin protein C-reaktif berkorelasi negatif lemah ($r = -0,364$, $p = 0,005$) dengan CRI-II, sedangkan protein C-reaktif tidak berkorelasi ($r = 0,167$, $p = 0,206$). Analisis regresi linear menunjukkan adiponektin sebagai parameter paling berkorelasi dengan CRI-II ($p = 0,000$).

Simpulan: Adiponektin dan rasio adiponektin protein C-reaktif berkorelasi dengan CRI-II, sedangkan protein C-reaktif tidak berkorelasi. Adiponektin merupakan parameter paling berkorelasi dengan CRI-II pada individu defisiensi vitamin D.

Kata Kunci: adiponektin, protein C-reaktif, rasio adiponektin protein C-reaktif, *Castelli risk index-II*, defisiensi vitamin D

**CORRELATION OF ADIPONECTIN, C-REACTIVE PROTEIN,
AND ADIPONECTIN C-REACTIVE PROTEIN RATIO WITH
CASTELLI RISK INDEX-II IN VITAMIN D
DEFICIENT SUBJECTS**

ABSTRACT

Background: Vitamin D deficiency is closely related to cardiovascular disease (CVD). Chronic inflammation and atherogenicity are main factors of atherosclerosis which play important role in pathogenesis of CVD. Adiponectin and C-reactive protein (CRP) have opposite effect on initiation and progression of atherosclerosis, and play important role as predictors of CVD. This study aims to determine the correlation of adiponectin, CRP, and adiponectin CRP ratio with Castelli risk index-II (CRI-II) in subjects with vitamin D deficiency.

Methods: This study was an analytical study with cross-sectional design conducted on 59 subjects with vitamin D deficiency at Dr. M. Djamil General Hospital from January 2020 to March 2021. 25-hydroxyvitamin D total, adiponectin, and high-sensitivity-CRP (hs-CRP) levels were measured using ELISA method. LDL-C levels were measured using indirect method, namely Friedewald formula. HDL-C levels were measured using homogeneous enzymatic colorimetry method. Adiponectin CRP ratio and CRI-II were calculated. Data were analyzed using Pearson correlation test, significant if $p < 0.05$, then linear regression test was performed.

Results: Mean age was 34 years with range of 23-57 years. Most of subjects were 50 women (85%). Mean levels of adiponectin, CRP, LDL-C, HDL-C, and CRI-II were 4.38 (2.51) $\mu\text{g/mL}$, 4.17 (2.86) mg/L , 121.8 (30.1) mg/dL , 47.9 (11.0) mg/dL , and 2.7 (0.9), respectively, and median level of adiponectin-CRP ratio was 1.2 (0.2 - 47.0). Results of correlation analysis showed that adiponectin and adiponectin CRP ratio had moderate negative correlation ($r = -0.502$, $p = 0.000$) and weak negative correlation ($r = -0.364$, $p = 0.005$) with CRI-II, respectively, while CRP did not have correlation with CRI-II ($r = 0.167$, $p = 0.206$). Results of linear regression showed that adiponectin was the most correlated parameter with CRI-II.

Conclusion: Adiponectin and adiponectin CRP ratio had correlation with CRI-II, whereas CRP was not correlated with CRI-II. Adiponectin was the most correlated parameter with CRI-II in subjects with vitamin D deficiency.

Keywords: adiponectin, C-reactive protein, adiponectin C-reactive protein ratio, Castelli risk index-II, vitamin D deficiency