Adiponectin, total anti-oxidant status, and high sensitivity C-reactive protein in Indonesian men with metabolic syndrome

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Abstrak

Penelitian ini bertujuan untuk menilai penanda biokimia adiponektin, status antioksidan total (SAT), dan high sensitvity C-reactive protein (hsCRP) pada individu dengan dan tanpa sindrom metabolik (SM). Metode Penelitian pontong lintang pada 36 subyek SM dan 36 subyek tanpa SM yang dilakukan di Jakarta. Indikatorindikator yang diukur adalah adiponektin, SAT dan hsCRP, di samping berat badan, tinggi badan, lingkar pinggang (LP), tekanan darah sistolik, tekanan darah diastolik, dan glukosa darah puasa. Risiko terjadinya SM dihitung dengan odds ratio (OR) adiponektin, hsCRP, dan rasio adiponektin/hsCRP dengan mengambil nilai median sebagai titik dikotomi antara nilai tinggi dan nilai rendah masing-masing parameter tersebut. Hubungan antara adiponektin, SAT, dan hsCRP dengan LP dianalisis dengan uji korelasi Spearman, sedangkan peranan keseluruhan parameter dengan SM dianalisis dengan regresi logistik. Hasil Adiponektin dan hsCRP berbeda secara signifi kan antara subjek dengan dan tanpa SM (3,1 + 1,0 vs 4,2 + 1,4 ug/mL) dan (3,35 + 3,43 vs 0,97 + 0,92 mg/L) (p < 0,01), sedangkan SAT tidak berbeda secara signifi kan (1,28 + 0,2 vs 1,24 + 0,1 mmol/L). Adiponektin berkorelasi negatif dengan LP (rs = - 0,436, p < 0,01), sedangkan SAT dan hsCRP berkorelasi positif dengan LP (masing-masing rs= 0.286, p = 0.02 dan rs = 0,597, p < 0. 01). Odds ratio (OR) adiponektin dan hsCRP untuk terjadinya SM masing-masing 4 (p = 0,01) dan ~6,8 (p < 0,01), sedangkan risiko pada subyek dengan rasio adiponektinhsCRP ≤ 2.31 adalah 25 kali lipat (p < 0,01) dibanding subyek dengan rasio adiponektin-hsCRP > 2.31. Kesimpulan Penggunaan rasio adiponektin-hsCRP meningkatkan prediksi SM 4 - 6 kali lipat dibanding bila menggunakan biomarker tunggal.

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Abstract

Aim To examine biochemical markers of adiponectin, total anti-oxidant status (TAOS) and high sensitvity C-reactive protein (hsCRP) in individuals with and without metabolic syndrome (MetS). Methods A cross-sectional study on 36 non-MetS and 36 MetS subjects was undertaken in Jakarta. Measured indicators were adiponectin, TAOS and hsCRP, apart from weight, height, waist circumference (WC), systolic blood pressure (SBP), diastolic blood pressure (DBP), and fasting blood glucose (FBG). Odds ratio (OR) of adiponectin, TAOS and hsCRP were calculated to assess risk for the development of MetS. Median values were determined as cutoffs to defi ne high and low values of each parameter. Relationships between adiponectin, TAOS and hsCRP with WC were analyzed by using Spearman correlation analysis, and the contributions of all indicators to the development of MetS were analyzed by using logistic regression. Results Adiponectin dan hsCRP differed signifi cantly between non MetS and MetS subjects (4.2 + 1.4 vs 3.1 + 1.0 ug/ mL) dan (0.97 + 0.92 vs 3.35 + 3.43 mg/L) (p < 0.01), but no signifi cant difference was found in TAOS (1.24 + 0.1 vs 1.28 + 0.2 mmol/L). Adiponectin associated negatively with WC (rs= -0.436; p < 0.01), while TAOS and hsCRP associated positively with WC (rs= 0.286, p = 0.02 and rs= 0.597, p < 0.01). The odds ratios (ORs) of adiponectin and hsCRP for the development of MetS were 4 (p = 0.01) and ~6,8 (p

< 0.01), respectively; while the risk of subjects with adiponectinhsCRP ratio of ≤ 2.31 to develop MetS was 25 times ($p < 0.01$) those with adiponectin-hsCRP ratio > 2.31. Conclusion The use of adiponectin-hsCRP ratio increases the predictive power for the occurrence of MetS by 4-6 times the predictive power of adiponectin or hsCRP alone.