Association between multimeric adiponectin and free leptin index with atherogenic dyslipidemia in non-diabetic obese men

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Abstrak

Latar belakang: Penelitian ini bertujuan menilai peran berbagai adiponektin dan indeks leptin bebas terhadap dislipidemia aterogenik pada pria obesitas sentral non diabetes.
Metode: Desain penelitian ini adalah potong lintang pada 120 pria obesitas sentral non-diabetes yang dilakukan di Jakarta. Parameter yang diukur adalah adiponektin total, adiponektin berat molekul tinggi, adiponektin berat molekul sedang, adiponektin berat molekul rendah, leptin, soluble leptin receptor, trigliserida, kolesterol HDL, kolesterol LDL dan apolipoprotein B (Apo B). Kriteria dislipidemia aterogenik adalah rendahnya kadar kolesterol HDL, disertai trigliserida dan small dense LDL (sdLDL) yang tinggi. Kadar sdLDL didapat dari rasio kolesterol LDL / Apo B. Indeks leptin bebas adalah rasio leptin dengan soluble leptin receptor dengan menggunakan median sebagai titik dikotomi. Dilakukan krostabulasi untuk data kategorial. Hubungan antara adiponektin multimerik, indeks leptin bebas dengan lipid aterogenik dianalisis dengan uji Spearman, selanjutnya hasil interaksi keseluruhan parameter terhadap dislipidemia aterogenik dianalisis dengan regresi logistik ganda.
Hasil: Adiponektin berat molekul tinggi berkorelasi negatif secara bermakna dengan dislipidemia aterogenik (p< 0,05), sedangkan adiponektin berat molekul sedang dan adiponektin berat molekul rendah tidak berkorelasi (p> 0,05) dengan dislipidemia aterogenik. Indeks leptin bebas berkorelasi positif secara bermakna dengan dislipidemia aterogenik (p< 0,05). Odds Rasio (OR) adiponektin berat molekul tinggi terhadap kejadian dislipidemia aterogenik adalah 3,62 (p< 0,05), sedangkan risiko dislipidemia aterogenik pada subyek dengan indeks leptin bebas rendah adalah 4,57 (p< 0,05).
Kesimpulan: Adiponektin berat molekul tinggi dan indeks leptin bebas berperan dalam meningkatkan risiko dislipidemia aterogenik. (Med J Indones 2011; 20:119-24).
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Abstract
Background: To analyze the role of various adiponectin and free leptin index on the occurrence of atherogenic dislipidemia in non-diabetic central obese men
Methods: This is a cross-sectional study on 120 non-diabetic central obese men that was done in Jakarta. The measured indicators were total adiponectin, high molecular weight adiponectin (HMW adiponectin), medium molecular weight adiponectin (MMW adiponectin), low molecular weight adiponectin (LMW adiponectin), leptin, soluble leptin receptor, triglycerides, high-density lipoprotein cholesterol (HDL cholesterol), low density lipoprotein cholesterol (LDL cholesterol) and apolipoprotein B (Apo B). Atherogenic dyslipidemia was characterized by reduced level of HDL cholesterol, and high levels of triglyceride and small dense LDL (sdLDL). Ratio of LDL cholesterol and Apo B were calculated to get sdLDL. Free Leptin Index (FLI) was the ratio between total leptin and soluble leptin receptor (sOB-R), and median values were used as cut off to defi ne high and low values of each parameter. Cross tabulation were done on categorical data. Relationships between multimeric adiponectin and free leptin index with

atherogenic lipids were analyzed by using Spearman analysis. Further, the interaction of all indicators with the occurence of atherogenic dyslipidemia was analyzed using binary logistic regression.
Results: A negative correlation of HMW adiponectin with atherogenic dyslipidemia ($p< 0.05$), whereas there were no correlation between MMW adiponectin and LMW adiponectin with atherogenic dyslipidemia ($p> 0.05$). Free Leptin Index was associated positively with atherogenic dyslipidemia ($p< 0.05$). Odds Ratio (OR) of HMW adiponectin for the occurrence of atherogenic dyslipidemia was 3.62 ($p< 0.05$), where as OR of FLI with atherogenic dyslipidemia was 4.57 ($p< 0.05$).
Conclusion: HMW Adiponectin and FLI might contribute to atherogenic dyslipidemia in central obese non-diabetic males. (Med J Indones 2011; 20:119-24).