

POLIMORFISME +62G>A GEN RESISTIN (*RETN*) TIDAK BERHUBUNGAN DENGAN KADAR RESISTIN PADA INDIVIDU OBES ETNIS JAWA

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INTISARI

Latar Belakang. Obesitas telah menjadi masalah kesehatan masyarakat dunia. Obesitas terjadi karena keseimbangan energi positif yang menyebabkan perluasan jaringan adiposa. Jaringan adiposa putih sebagai organ endokrin mensekresi resistin. Resistin pada orang obes dihasilkan oleh sel imun karena terjadi inflamasi tingkat rendah yang kronis sehingga dapat mengakibatkan kadar resistinnya lebih tinggi. Resistin berdasarkan beberapa penelitian merupakan penghubung antara obesitas, resistensi insulin dengan diabetes. Polimorfisme +62G>A gen *RETN* telah dilaporkan berkaitan dengan kadar resistin yang rendah dengan alel A sebagai alel protektif.

Tujuan Penelitian. Mengetahui distribusi frekuensi genotip dan alel gen *RETN* +62G>A dan kaitannya dengan kadar resistin. Mengetahui perbedaan kadar resistin pada subyek obes dan kontrol. Mengetahui korelasi antara kadar resistin dengan IMT.

Metode. Rancangan penelitian digunakan studi kasus kontrol dengan total subyek 122 orang berusia 18-40 tahun, terbagi merata menjadi kelompok kasus ($IMT \geq 27 \text{ kg/m}^2$) dan kelompok kontrol ($IMT 18,5-24,9 \text{ kg/m}^2$). Subyek merupakan etnis Jawa dan tidak menderita diabetes mellitus. Subyek berpuasa minimal 8 jam sebelum pengambilan darah. Plasma darah kemudian digunakan untuk mengukur kadar GDP dan kadar resistin. Analisis genotip menggunakan teknik PCR-RFLP. Data dianalisis menggunakan uji *Mann Whitney*, *Fisher exact*, *Chi-square*, *Kruskal-Wallis*, dan *Spearman Correlation* ($p < 0,05$).

Hasil. Hasil analisis genotip menunjukkan tidak ada perbedaan signifikan distribusi frekuensi genotip dan alel antara genotip polimorfisme gen *RETN* +62G>A dengan status obesitas ($p=0,680$ dan $p=1$) dan dengan kadar resistin ($p=0,537$). Tidak terdapat perbedaan signifikan kadar resistin antara kelompok kasus dengan kelompok kontrol ($p=0,770$). Kadar resistin berkorelasi negatif dengan IMT pada kelompok obesitas ($p=0,05$; $r=-0,25$).

Kesimpulan. Tidak ada perbedaan signifikan distribusi frekuensi genotip dan alel polimorfisme gen *RETN* +62G>A dengan status obesitas dan kadar resistin antara kelompok kasus dan kontrol. Kadar resistin berkorelasi negatif dengan IMT.

Kata kunci: obesitas, kadar resistin, SNP *RETN* +62G>A (rs3745368)

RETN GENE POLYMORPHISM +62G>A (rs3745368) IS NOT ASSOCIATED WITH RESISTIN LEVEL IN OBESE JAVANESE ETHNIC

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ABSTRACT

Background. Obesity has become a global public health problem. It occurs due to positive energy balance leading to adipose tissue expansion. White adipose tissue was an endocrine organ which secreted resistin. Resistin also produced by immune cells due to low chronic level inflammation might cause higher resistin level in obese people. Resistin based on several studies were a link between obesity, insulin resistance to diabetes. Polymorphism +62G>A RETN gene was reported has relationship with low resistin level and A allele as protective allele.

Objectives. This study aimed to determine genotype and allele frequency distribution in relation with resistin level in obese and control group. Another objective aimed to determine the difference of resistin level between obese and control group and to knowing the correlation between resistin level with body mass index.

Methods. The design of research was a case control study with 122 people (18-40 y.o.), divided equally in the case group (BMI ≥ 27 kg/m²) and control group (BMI 18.5-24.9 kg/m²). Subjects were Javanese without diabetes mellitus. Blood was taken after fasting minimal 8 hours. Plasma was used to measure fasting glucose and resistin level. DNA genotyping was analyzed using PCR-RFLP. Data was analyzed using Mann Whitney test, Fisher exact test, Chi-square test, Kruskal-Wallis test, and Spearman Correlation.

Results. Genotyping result showed three genotype of RETN gene +62G>A polymorphism (GG, GA, AA). There was no significant difference in genotype and allele frequency distribution related to obesity status ($p=0.680$; $p=1$) and resistin level ($p=0.537$) between case and control group. There was no significant difference resistin level between case and control group ($p=0.770$). Resistin level was correlated with BMI in obese group ($p=0.05$; $r=-0.25$).

Conclusions. Present study concludes that there is no significant difference in genotype and allele frequency distribution related to obesity status and resistin level between case and control group. Resistin level has negative correlation with BMI.

Keywords: obesity, resistin level, SNP *RETN* +62G>A (rs3745368)