INTISARI

HUBUNGAN POLIMORFISME GEN GHRELIN LEU72MET DAN KADAR GHRELIN PLASMA SERTA SEKRESI INSULIN PADA OBESITAS DI ETNIK JAWA

Latar Belakang. Ghrelin berperan dalam regulasi intake makanan, metabolisme glukosa, dan keseimbangan energi. Polimorfisme gen *GHRL* Leu72Met berhubungan dengan obesitas, resistensi insulin dan rendahnya kadar ghrelin plasma pada beberapa populasi.

Tujuan Penelitian. Penelitian ini bertujuan untuk mmengetahui hubungan polimorfisme gen *GHRL* Leu72Met dan kadar ghrelin serta sekresi insulin pada obesitas di etnik Jawa.

Metode. Penelitian ini terdiri dari 98 subjek kontrol dan 102 subjek obes. Semua subjek diukur antrophometrinya, gula darah puasa diukur dengan metode GOD-PAP, insulin plasma puasa dan ghrelin plasma puasa diukur menggunakan ELISA. Polimorfisme gen *GHRL* Leu72Met di deteksi menggunakan PCR-RFLP.

Hasil. Konsentrasi ghrelin plasma pada kelompok obes lebih tinggi dibandingkan pada kelompok dengan berat badan normal (P<0,05). Ghrelin plasma puasa berkorelasi negatif dengan indeks massa tubuh (r = -0,314 P<0,001 dan sekresi insulin (Kontrol r = -0,083 P= 0,415; Obes r = -0,014 P=0,887). Subjek pembawa alel Met72 lebih berisiko mengalami obesitas dibandingkan dengan subjek alel Leu72 (*odds ratio* = 4,928, *Confidence Interval* 95%= 2,424-10,01). Frekuensi alel Met72 sebanyak 10,01% dikelompok kontrol dan 35,6% dikelompok obes. Frekuensi alel Leu72 sebanyak 89,9% dikelompok kontrol dan 64,4% dikelompok obes.

Kesimpulan : Polimorfisme Leu72Met berperan pada kejadian obesitas, akan tetapi pada penelitian ini tidak ditemukan pengaruh polimorfisme leu72met terhadap kadar ghrelin dan sekresi insulin.

Kata kunci : Ghrelin, Obesitas, Polimorfisme Leu72Met, Sekresi insulin

ABSTRACT

ASSOCIATION OF THE GHRL GENE LEU72MET POLYMORPHISM WITH GHRELIN PLASMA AND INSULIN SECRETION IN OBESITY IN THE ETHNIC JAVANESE

Background. Ghrelin plays a role in the regulation of food intake, glucose metabolism, and energy balance. The *GHRL* gene Leu72Met polymorphism associated with obesity, insulin resistance, and low levels of plasma ghrelin in some populations.
Objective. In this study, we investigated the relationship GHRL Leu72Met gene polymorphism, levels of ghrelin, and insulin secretion in the obese group in the ethnic Javanese.
Method. The present study was conducted on 98 control subjects with normal BMI and 102 obese subjects. All subjects were measured anthropometric, fasting blood glucose was measured by the method of GOD-PAP, plasma insulin and plasma ghrelin were measured using ELISA. Insulin secretion was calculated using homeostasis model assessment (HOMA) analysis. The Leu72Met polymorphism of the ghrelin gene was screened using PCR-RFLP.
Results: Plasma ghrelin concentration was decreased in obese as compared with lean (P<0,05). Fasting plasma ghrelin was negatively correlated with body mass index (r =0, 314; P<0,001), and insulin secretion (Control: r = -0,083; P= 0,415; Obese: r = -0,014 P=0, 887). Subject Met72 allele carries a higher risk of obesity than the subject Leu72 allele (odds ratio = 4,928, Confidence Interval 95%= 2,424-10,01). Met72 allele frequencies as much as 10.01% in the control group and 35.6% in the obese group. Leu72 allele frequencies as much as 89.9% in the control group and 64.4% in the obese group.
Conclusion: Leu72Met polymorphisms play a role in obesity, but in this study, we haven't foundd the effect of polymorphisms Leu72Met against ghrelin levels and insulin secretion.

Keywords: Ghrelin, Obesity, Leu72Met Polymorphism, Insulin secretion