

RISK FACTOR OF ADIPOQ AND RETN GENE POLYMORPHISM COMPARE WITH ADIPONECTIN AND RESISTIN PROTEIN IN PREDICTING TYPE 2 DIABETES MELLITUS

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ABSTRACT

Background: Genetic factors such ADIPOQ and RETN gene polymorphism are thought to contribute the increasing incidence of diabetes mellitus. This study aimed to analyze the risk factors of ADIPOQ and RETN gene polymorphism compared with adiponectin and resistin protein in type 2 diabetes mellitus.

Subjects and Method: This was cross-sectional study using secondary data from non-communicable disease cohort study in Bogor 2019. All adult aged 25-65 were included in study. The dependent variable was type 2 diabetes mellitus. The independent variables were biomarkers single nucleotide polymorphisms (SNPs) on ADIPOQ rs6773957 and RETN rs3745367 gene. Data were analyzed using logistic regression.

Results: ADIPOQ rs6773957 gene showed that the G/G and A/G genotypes had an approximately 2 times risk in developing DM compared to homozygous A/A (OR=1.95; CI95%=1.39 to 2.75; p<0.001). RETN rs3745367 gene showed that the genotype at risk of A/A and G/G (homozygous) had a risk of developing DM or prediabetes about 1.6 times (OR=1.65; CI95%=1.12 to 2.44; p<0.01) and 2 times compared to the genotypes of G/G and A/G (heterozygous) (OR=2.07; CI95%=1.21 to 3.54; p<0.01). However, the protein expression changes were most prominent in the pre-diabetes group.

Conclusion: ADIPOQ and RETN mutant gene alleles increase risk of type 2 diabetes mellitus.

Keywords: diabetes, polymorphisms, ADIPOQ, RETN, gene, adult

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