

ABSTRAK

Penelitian ini bertujuan untuk mengidentifikasi polimorfisme alel rs6923761 (*Gly168Ser*) pada gen *glucagon-like peptide-1 receptor (GLP-1R)* serta menganalisis pengaruhnya terhadap profil lipid pada pasien diabetes melitus tipe 2 (DMT2). Penelitian observasional analitik dengan rancangan potong lintang ini melibatkan 66 pasien DMT2 yang telah memenuhi kriteria inklusi dan eksklusi. Genotipe polimorfisme alel rs6923761 pada gen *GLP-1R* diidentifikasi menggunakan metode *tetra-primer amplification refractory mutation system-polymerase chain reaction (T-ARMS-PCR)*. Data profil lipid yang meliputi kolesterol total, trigliserida, *low-density lipoprotein (LDL)*, dan *high-density lipoprotein (HDL)* diperoleh dari hasil pemeriksaan laboratorium klinis. Pengaruh polimorfisme alel rs6923761 pada gen *GLP-1R* terhadap profil lipid dianalisis menggunakan uji eksak Fisher, disertai perhitungan *odds ratio (OR)* dan interval kepercayaan 95%. Genotipe pembawa alel A (G/A+A/A) ditemukan pada 64 subjek penelitian (97,0%), sedangkan genotipe *wild-type* (G/G) hanya ditemukan pada 2 subjek penelitian (3,0%). Tidak ditemukan pengaruh yang bermakna secara statistik dari polimorfisme alel rs6923761 pada gen *GLP-1R* terhadap kadar kolesterol total ($p=1,000$; OR=0,83; CI=0,05–13,83), trigliserida ($p=1,000$; OR=0,68; CI=0,04–11,44), LDL ($p=0,189$; OR=0,92; CI=0,04–19,87), maupun HDL ($p=0,189$; OR=0,92; CI=0,04–19,87). Polimorfisme alel rs6923761 pada gen *GLP-1R* ditemukan pada pasien DMT2, tetapi tidak menunjukkan pengaruh yang signifikan terhadap profil lipid pada populasi yang diteliti.

Kata kunci: Diabetes melitus tipe 2; GLP-1R; rs6923761; polimorfisme genetik; profil lipid

ABSTRACT

This study aimed to identify the rs6923761 (Gly168Ser) allele polymorphism of the *glucagon-like peptide-1 receptor* (*GLP-1R*) gene and to analyze its effect on the lipid profile in patients with type 2 diabetes mellitus (T2DM). This analytical observational study with a cross-sectional design involved 66 patients with T2DM who met the inclusion and exclusion criteria. The rs6923761 allele polymorphism of the *GLP-1R* gene was genotyped using the tetra-primer amplification refractory mutation system-polymerase chain reaction (T-ARMS-PCR) method. Lipid profile data, including total cholesterol, triglycerides, low-density lipoprotein (LDL), and high-density lipoprotein (HDL), were obtained from clinical laboratory examinations. The effect of the rs6923761 allele polymorphism of the *GLP-1R* gene on the lipid profile was analyzed using Fisher's exact test, accompanied by the calculation of the odds ratio (OR) and the 95% confidence interval. The A allele carrier genotype (G/A+A/A) was identified in 64 study subjects (97.0%), whereas the wild-type genotype (G/G) was identified in only 2 study subjects (3.0%). No statistically significant effect was found between the rs6923761 allele polymorphism of the *GLP-1R* gene and total cholesterol ($p=1,000$; OR=0,83; CI=0,05–13,83), triglycerides ($p=1,000$; OR=0,68; CI=0,04–11,44), LDL ($p=0,189$; OR=0,92; CI=0,04–19,87), or HDL ($p=0,189$; OR=0,92; CI=0,04–19,87) levels. The rs6923761 allele polymorphism of the *GLP-1R* gene was identified in patients with T2DM, but did not show a significant effect on the lipid profile in the studied population.

Keywords: Type 2 diabetes mellitus; GLP-1R; rs6923761; genetic polymorphism; lipid profile.