PLAGIAT MERUPAKAN TINDAKAN TIDAK TERPUJI

ABSTRAK

Diabetes melitus tipe 2 merupakan penyakit metabolik yang ditandai dengan hiperglikemia akibat penurunan sekresi dan sensitivitas insulin. Metformin merupakan terapi lini pertama yang bekerja melalui penurunan produksi glukosa hati, penurunan absorpsi glukosa usus, serta peningkatan sensitivitas insulin. Transporter *Organic Cation Transporter 1* (OCT1) yang dikodekan oleh gen *SLC22A1* bersifat polimorfik, dan polimorfisme rs594709 (G>A) diduga berpengaruh terhadap respons terapi metformin, termasuk profil lipid. Penelitian ini bertujuan menganalisis hubungan variasi genetik *SLC22A1* rs594709 dengan kadar *Low Density Lipoprotein* (LDL) pada pasien diabetes melitus tipe 2 pengguna metformin di Kabupaten Sleman.Penelitian menggunakan desain observasional analitik dengan pendekatan cross-sectional pada 60 pasien Program Prolanis di 10 Puskesmas Kabupaten Sleman. Variasi genetik *SLC22A1* rs594709 dianalisis menggunakan metode T-ARMS PCR, sedangkan hubungan genotipe/alel dengan kadar LDL dianalisis menggunakan uji *Chi-square* serta perhitungan *odds ratio* (OR) dan 95% *confidence interval* (CI) dengan batas signifikansi p<0,05.Distribusi genotipe menunjukkan keberadaan GG dan GA**,** tanpa genotipe AA. Analisis menunjukkan bahwa tidak terdapat hubungan signifikan antara variasi rs594709 dan kadar LDL pada tingkat genotipe (p = 0,678; OR = 0,614; CI 95% = 0,134–2,811) maupun tingkat alel (OR = 1,034; CI 95% = 0,429–2,492; p = 1,000). Variasi genetik *SLC22A1* rs594709 tidak menunjukkan pengaruh signifikan terhadap kadar LDL.

Kata kunci : Diabetes melitus tipe 2, Metformin, *SLC22A1* rs594709, LDL

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ABSTRACT

Type 2 diabetes mellitus is a metabolic disease characterized by hyperglycemia due to decreased insulin secretion and sensitivity. Metformin is a first-line therapy that works by decreasing hepatic glucose production, decreasing intestinal glucose absorption, and increasing insulin sensitivity. The Organic Cation Transporter 1 (OCT1), encoded by the SLC22A1 gene, is polymorphic, and the rs594709 (G>A) polymorphism is thought to influence metformin therapy response, including lipid profiles. This study aims to analyze the relationship between SLC22A1 rs594709 genetic variation and Low-Density Lipoprotein (LDL) levels in type 2 diabetes mellitus patients using metformin in Sleman District. The study used an analytical observational design with a cross-sectional approach in 60 Prolanis Program patients at 10 Community Health Centers in Sleman District. The SLC22A1 rs594709 genetic variation was analyzed using the T-ARMS PCR method, while the relationship between genotype/allele and LDL levels was analyzed using the Chi- square test and calculation of odds ratio (OR) and 95% confidence interval (CI) with a significance level of $p<0.05$. The genotype distribution showed the presence of GG and GA, without the AA genotype. The analysis showed that there was no significant relationship between the rs594709 variation and LDL levels at the genotype level ($p = 0.678$; OR = 0.614; 95% CI = 0.134–2.811) or allele level (OR = 1.034; 95% CI = 0.429–2.492; $p = 1.000$). The SLC22A1 rs594709 genetic variation did not show any effect on on LDL levels

Keywords : Type 2 diabetes mellitus, Metformin, SLC22A1 rs594709, LDL