Influence of ABCB1 2677G > T Single Nucleotide Polymorphism on Warfarin Maintenance Therapy among Patients with Prosthetic Heart Valve

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Abstract: The dose requirement of warfarin to achieve target INR range varies in patients with prosthetic heart valve. This variation is affected by both genetic and non-genetic factors. Earlier studies have identified role of CYP2C9 and VKORC1 genetic polymorphisms on warfarin dose requirement. Warfarin being a substrate for drug transporter, P-glycoprotein coded by ABCB1 gene, may also be influenced by its genetic polymorphisms. This study was aimed to study the effect of single nucleotide polymorphism (SNP), ABCB1 2677G > T on warfarin maintenance dose requirement in patients with steady-state International Normalized Ratio (INR). The median dose requirement was significantly different between the genotype groups GG vs. GT (35 ± 20; 42.5 ± 18, p < 0.05), GG vs. TT (35 ± 20; 41.25 ± 25, p < 0.05). There was no significant difference between GT vs. TT. In conclusion, patients with variant allele require a higher weekly maintenance dose of warfarin compared to patients without variant allele.

Keywords: warfarin pharmacogenetics, pharmacogenomics of warfarin, ABCB1 and warfarin, pglycoprotein and warfarin

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