

INFLUENCE OF GAMMA-GLUTAMYL CARBOXYLASE (GGCX) ON WARFARIN DOSE

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Introduction. Warfarin is an oral anticoagulant which is popular in cardiology for the prevention and treatment of thromboembolic events in patients with deep vein thrombosis. Patients usually treated according to the clinical data. However, incorrect dose of the treatment can be followed with side effects such as excessive bleeding and thrombosis. To avoid these side effects patients need genetic tests for specific genes which are responsible for the sensitivity of patient to warfarin. GGCX is one of the genes which have a role in dose of the warfarin.

Methods. Genomic DNA has been extracted from the patients' (n=52) blood samples. Patients of the case group have been implanted with mechanical left ventricular assist devices (LVAD) and treated with warfarin. Dose of the warfarin is assigned according to the patients' criteria such as age, sex, diet, weight, height and International Normalized Ratio (INR). The minimum dose was 0,625 mg/day and maximum 6,875 mg/day. On the other hand, control group of the people (n=95) were also included in the research. DNA samples of both groups were genotyped for polymorphism of GGCX (rs11676382) by using TaqMan SNP genotyping assays.

Results. According to the literature review GGCX rs11676382 C>G was associated with decreased dose requirements. In the results of the genotyping, there was no expression of G allele in both groups. GC alleles were expressed rare in our population. One person from the case group and eight people (8.4%) from the control. On the other hand, there was high expression of CC alleles in both groups.

Conclusion. The aim of the research is to develop dosing algorithm by considering clinical data and genotyping results. The results of the genotyping will be used in identification of the correct dose on <http://warfarindosing.org/>. There are other genes (VKORC1, CYP2C9 and etc.) included in the research that have major effects on warfarin sensitivity. All the genotyping results will be analyzed and used for dose correction.