

## Analysis of ZBTB17 Gene rs10927875 Polymorphism in Relation to Dilated Cardiomyopathy in Slovak Population

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**Abstract :** Dilated cardiomyopathy (DCM) is a primary myocardial disease, it is characterized by progressive systolic dysfunction due to cardiac chamber dilatation and inefficient myocardial contractility with estimated prevalence of 37 in 100 000 people. It is the most frequent cause of heart failure and cardiac transplantation in young adults. About one-third of all patients have a suspected familial disease indicating a genetic basis of DCM. Many candidate gene studies in humans have tested the association of single nucleotide polymorphisms (SNPs) in various genes coding for proteins with a known cardiovascular function. In our study we present the results of ZBTB17 gene rs10927875 polymorphism genotyping in relation to dilated cardiomyopathy in Slovak population. The study included 78 individuals, 39 patients with DCM and 39 healthy control persons. The mean age of patients with DCM was  $50.7 \pm 11.5$  years; the mean age of individuals in control group was  $51.3 \pm 9.8$  years. Risk factors detected at baseline in each group included age, sex, body mass index, smoking status, diabetes and blood pressure. Genomic DNA was extracted from leukocytes by a standard methodology and screened for rs10927875 polymorphism in intron of ZBTB17 gene using Real-time PCR method (Step One Applied Biosystems). The distribution of investigated genotypes for rs10927875 polymorphism in the group of patients with DCM was as follows: CC (89.74%), CT (10.26%), TT (0%), and the distribution in the control group: CC (92.31%), CT (5.13%), and TT (2.56%). Using the chi-square ( $\chi^2$ ) test we compared genotype and allele frequencies between patients and controls. There was no difference in genotype or allele frequencies in ZBTB17 gene rs10927875 polymorphism between patients and control group ( $\chi^2=3.028$ ,  $p=0.220$ ;  $\chi^2=0.264$ ,  $p=0.608$ ). Our results represent an initial study, it can be considered as preliminary and first of its kind in Slovak population. Further studies of ZBTB17 gene polymorphisms of more numerous files and additional functional investigations are needed to fully understand the role of genetic associations.

**Keywords :** dilated cardiomyopathy, SNP polymorphism, ZBTB17 gene, bioscience

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