Association of CTLA4 gene polymorphism with dilated cardiomyopathy

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Funding Acknowledgements: Type of funding sources: Public Institution(s). Main funding source(s): Prof. V.F. Voino-Yasenetsky Krasnoyarsk State Medical University

Aim. To evaluate the Association of rs231775 polymorphism of the CTLA4 gene with dilated idiopathic cardiomyopathy (DCMP) and myocardial dilation of ischemic origin (DMI).

Subjects and methods. The study included patients with ICMP and DMI in the number of 221 people. The average age of the subjects was in the range of 55.30 ± 9.69 years.

We divided the patients into 2 groups: the first – patients diagnosed with idiopathic dilatation cardiomyopathy and the second-patients with myocardial dilatation of ichemic origin. The number of patients in the first group was 111, including 99 men (89.2%) and 12 women (10.8%). The average age of patients in this group is 51.73 ± 9.74 years, in men 51.00 ± 8.96 years, in women 57.75 ± 3.71 years.

The second group included patients with myocardial dilatation of ischemic origin. Their number is 110 people, including 100 men (91.5%) and 10 women (8.5%). The average age of respondents is 58.68 ± 8.38 years, for men 58.29 ± 8.46 years, for women 62.90 ± 6.29 years.

The control group included patients who had no manifestations of cardiovascular diseases. Their number is 121 people (average age 53.6 ± 4.8 years).

The patients underwent laboratory and instrumental studies, as well as molecular and genetic studies of the 49A/G polymorphism of the CTLA4 gene (rs231775). All patients underwent coronary angiography. Based on the anamnesis data and instrumental studies, those patients who could be said to have no risk factors for the development of dilatation of the heart cavities were identified in the first group. And those patients who were reliably diagnosed with CHD were in the second group, that is, dilatation of the heart cavities is due to a previous myocardial infarction, existing angina pectoris.

Results. In the group with DCMP 34.2% of patients were carriers of the common homozygous 49AA genotype, the heterozygous 49AG genotype-48.6%, and the rare homozygous 49GG genotype-17.1%. In the control group 33.5% of patients were identified as carriers of a homozygous genotype by a common allele, and 49.3% were carriers heterozygous genotype, and homozygous genotype for a rare allele – 17.2%. The analysis revealed a statistically non significant increase in the frequency of carrying the homozygous AA genotype in patients with DCMP compared to the control group of the rs231775 polymorphism of the CTLA4 gene. In the group with DMI, there was no association with the rs231775 polymorphism of the CTLA4 gene.

Conclusion. A statistically significant association of rs231775 of the CTLA4 gene with DCMP was not found. The association of DMI c rs231775 could not be confirmed.