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Preliminary results of the study of polymorphisms associated with remodeling of the myocardium and carotid arteries in hypertension in the Kazakh population

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Introduction: Cardiovascular Disease (CVD) is the leading cause of death in Kazakhstan. In the structure of CVD, hypertension takes the first place and leads to remodeling of the myocardium and carotid arteries, which significantly increases cardiovascular risk. A number of studies have been carried out that established the genetic characteristics associated with the risk of hypertension and target organ damage in hypertension, but not in Kazakh population.

The aim of this project is to study the molecular genetic predictors of remodeling of the cardiovascular system in HTN in Kazakh population.

Materials and methods:

The sample size is 1000 people.

There were 4 groups of 250 hypertensive individuals, age- up to 61 years.

1. Group without remodeling
2. with carotid artery remodeling (CR), intima-media complex (IMC) > 0.9 mm
3. with myocardial remodeling (MR) LVMI \geq 115 in men, \geq 95 in women, relative wall thickness \geq 0.43
4. with remodeling of the myocardium and carotid artery.

Clinical, laboratory, instrumental data were collected. Biological samples were taken for genotyping for 120 SNPs known by association with a thickening of IMC or with left ventricular hypertrophy based on GWAS Catalog- EMBL-EBI and Varsome Clinical and PubMed publications. Genotyping was performed using QuantStudio 12K Flex Real-Time PCR System using array technology.

Preliminary results: According to a preliminary analysis of 120 SNPs, four polymorphic variants (rs923109, rs4238884, rs11646213, rs2407103 ($p < 0.05$)) are associated with MR or and CR. Probably, rs923109 and rs4238884 are associated with lower chances of MR or/and CR. rs11646213 and rs2407103 are associated with higher chances of MR or/and CR.

Biography

Ainur Sibagatova is an aspiring researcher. She holds a master degree in health administration. Currently she works in the Gerontology center of Medical Centre Hospital of President's Affairs Administration of the Republic of Kazakhstan. The interest of her research is the prevention of the age of associated diseases, mainly cardiovascular diseases.

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