GENE POLYMORPHISM OF ESTROGEN RECEPTOR AND APOLIPOPROTEIN E ASSOCIATED WITH HYPERTENSION IN MEN

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Background and Aim: The most common chronic disease among the adult population of developed countries is hypertension (AH) that is the main risk factor of disability and mortality. AH is characterized by a long latent period and usually diagnosed at a late stage when end organ damage is non-reversible. Therefore, the search for early AH predictors are relevant for medical research. This study aims to examine the role of carrier state of polymorphic loci of ESR1, APOE4 and their expression product of ApoE as a factor of AH in men.

Materials and Methods: 170 men with AH 1-2 degrees (observation group, n=90) and without AH (comparison group, n=8) were surveyed. Genes polymorphism ESR1 (rs2228480) and APOE4 (rs429358) was studied using PCR in real time with melting curve analysis. In the peripheral blood ApoE level was examined using turbidimetry. Sample comparison was carried out through dispersion analysis using the Kruskal-Wallis and the median tests. Genotype distribution in the groups was estimated from the Hardy-Weinberg equilibrium using the x2 test in co-dominance and allelic inheritance models.

Results: In men with AH the minor allele of A ESR1 gene was found significantly more often than in the comparison group (27.5% in the observation group; 9.5% in the comparison group; x2 =4.43; p=0.04). A reduction of ApoE level in serum by men with AH associated with carriage of the TS genotype of the APOE4 gene (Kruskal-Wallis test, p=0.04) was determined.

Conclusions: The data obtained certifies that carriage of the minor allele A of ESR1 gene is associated with the development of AH in men. The reduction of ApoE protein level in the serum of men with AH is associated with a polymorphism of ApoE4 gene. The determined polymorphisms of candidate genes are promising for use as additional markers of hereditary predisposition to development of AH in middle aged men.

BIOGRAPHY

Nina V Zaitseva created and headed Perm Science and Research Clinical Institute of Pediatric Ecopathology at the present moment - Federal Scientific Center for Medical and Preventive Health Risk Management Technologies Centre develops the modern methods of health risk assessment associated with the impact of heterogeneous environmental factors and professionally determined as well as a system of evidences of harm to the public health, as well as medical and preventive technologies to minimize the health risk. More than 30 research works are carried out annually. More than 100 normative and methodical documents have been developed for practical implementation. She is the author of more than 850 publications and 50 patents of the RF for invention.

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