SUMY STATE UNIVERSITY
MEDICAL INSTITUTE

«BIOMEDICAL PERSPECTIVES»

ABSTRACT BOOK

International Scientific and Practical Conference
of Students, Postgraduates and Young Scientists

(Sumy, October 16-18, 2019)

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ASSOCIATION OF THE C+70G POLYMORPHIC SITE OF THE EDNRA GENE WITH LARGE ARTERY STROKE DEVELOPMENT IN SMOKERS AND NON-SMOKERS

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Introduction. It is known that endothelial dysfunction plays a leading role in the pathogenesis of vascular brain disorders. One of the driving factors that contributes to the development of endothelial dysfunction is a potent endogenous vasoconstrictor – endothelin-1, which exerts its effects through interaction with a specific type A receptor. Given that smoking is an important risk factor for endothelial disorders and stroke, the relevance of its study is undeniable.

Aim. To study the association of the C+70G polymorphic site of the endothelin type A receptor gene (EDNRA) with large artery stroke (LAS) development in smokers and non-smokers.

Materials and Methods. For analysis, the venous blood of 170 LAS patients was used (42.4% women and 57.6% men), aged 40 to 85 years (mean age 64.7 ± 0.73 years). The control group consisted of 124 apparently healthy donors (36.3% women and 63.7% men), with an average age of 76.7 ± 0.93 years. The groups did not differ in the ratio of two sexes ($P = 0.294$ for the χ^2 test), but the mean age of the control group (76.7 ± 0.93 years) was significantly higher than for the second group ($P < 0.001$). C+70G (rs5335) polymorphism of the EDNRA gene was determined by polymerase chain reaction, followed by restriction fragment length analysis. Statistical analysis was performed using SPSS-17 software package. The value of $P < 0.05$ was considered as significant.

Results. During genotyping, it was detected that correlation of homozygote by major allele (C/C), heterozygote (C/G) and homozygotes by minor allele (G/G) while analyzing C+70G polymorphism of EDNRA gene among non-smokers in control group was 30.1 %, 48.4 % and 21.5 %, and among LAS patients – 26.7 %, 55.0 %, 18.3 % correspondingly ($P = 0.629$ by χ^2-test). In the group of smokers genotype distribution according to studied polymorphism also didn't significantly differ (25.8 %, 54.8 %, 19.4 % in the control in comparison with 18.0 %, 64.0 %, 18.0 % for LAS patients; $P = 0.657$ by χ^2-test).

Conclusion. Investigated C+70G polymorphic site of EDNRA gene was not associated with development of LAS neither among smokers nor in the group of non-smokers.

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