A n important field of modern medicine is the search for informative biomarkers of persistent infections that can be used to assess the potential risk of developing and realizing its clinical phenotypes [1].

Recent studies have shown that polymorphisms of the genes of the innate immunity receptors (TLR) are associated with the development of gram-positive infections, tuberculosis [3], infective endocarditis [5] and sepsis [4].

It has been established that single-nucleotide mutations (SNP) in the regions responsible for external (LRR) and internal (TIR) domains of receptors, the transformation of structures and functions of which cause defects of signal within the cell, are key among polymorphisms affecting TLR functions [1].

It is known that the violation of expression and function of TLR is manifested in a decrease in the production of cytokines determining the intensity of reactions of congenital and adaptive immunity and promotes the development of persistent infection [2].

The aim of the study was to study the gene polymorphism of the congenital immunity receptor – TLR2 Arg-753Gln (rs5743708) in patients with sero-resistant, early and late latent syphilis.

Material and Methods. Immunogenetic studies were performed in 100 people with syphilitic infection of the East Slavic population of the Southern region of Russia. It has been established that genotypic variants of 753 Arg/Gln and 753 Gln/Gln, as well as the presence of Gln/753 allele, are molecular-genetic markers of increased risk of syphilis development.

Keywords: syphilis, gene polymorphism, receptors of innate immunity

Immunogenetic studies were performed in 100 people with syphilitic infection of the East Slavic population of the Southern region of Russia. It has been established that genotypic variants of 753 Arg/Gln and 753 Gln/Gln, as well as the presence of Gln/753 allele, are molecular-genetic markers of increased risk of syphilis development.

Results and Discussion. When assessing the distribution of polymorphism alleles 753 Arg/Gln (rs5743708) the predominant existence of the wild allele Arg/in the homozygous state was noted both in the patients with syphilis (96 %), and in healthy donors (71 %). At the same time, a significant increase in the frequency of occurrence of a rare allele Gln/753 was marked in patients with syphilis 78/200 (0.39) (OR=20.7, CI: 6.33–67.6).

It should be noted that the homozygous state of the minor allele Gln/753 in the syphilis patients group was 10 times more common than in healthy donors (0.21 and 0.02, p<0.01).

When calculating odds ratios, a significant increase in the risk of syphilis in carriers of homozygous Gln/Gln (OR=13.0, CI: 1.70–90.0) and heterozygous Arg/Gln (OR=4.26, CI: 0.52–35.1) genotypes was observed.
In the analysis of individual clinical forms, a significant decrease in the frequency of the major allele (Arg/753) and an increase in the prevalence of the mutant allele (Gln/753) are established, both with sero-resistant and with latent forms of syphilis. The risk of disease development in residents of Gln/753 with early latent syphilis was 8.1 (CI: 2.23–29.4), with late latent – 7.46 (CI: 1.92–23.0), with sero-resistant it increased dozens of times – 65.8 (CI: 19.1–227.1).

Patients of all groups showed a decrease in the frequency of occurrence of the homozygous genotype by the dominant allele (Arg/Arg). Whilst, only in the group with serous-resistant syphilis a significant increase in the prevalence of the homozygous variant of the genotype by a rare allele (Gln/Gln) was determined.

The relative risk of disease development in residents of the homozygous genotype of the polymorphism TLR2 – 753Arg/Arg (rs5743708) was extremely low.

References

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THE PLACE OF EVALUATION VASCULAR RIGIDITY IN PROCESS OF STUDENT’S HEALTH SCREENING

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МЕСТО ОЦЕНКИ СОСУДИСТОЙ РИГИДНОСТИ В ПРОЦЕССЕ СКРИНИНГА СТУДЕНЧЕСКОГО ЗДОРОВЬЯ

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Cardio-ankle vascular index (CAVI) has a high prognostic significance for development of cardiovascular events. However, its values in the young population are quite vague still. In 149 students (55 boys, 94 girls) from 17 to 22 years old were assessed the vascular wall by indicators of CAVI using the device Vasera VS-1500 (Fukuda Denshi, Japan). Percentile analysis showed that the 95th percentile for boys at R-CAVI and L-CAVI was 7.1 and 7.2, and for