ISSN: 2161-0436

Analysis of polymorphism of the association of allelic variants and genotypes of the ADRB3 gene on the risk of developing fetal loss syndrome in Uzbekistan.

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Introduction:

Until now, the problem of miscarriage of pregnancy (FLS) remains urgent in the world health care. FLS is a universal, integrated response of the female body to the adverse effects of exogenous and endogenous factors on the health of the pregnant woman and fetus [. Jia G.,Yang S.,Yang C., Jiana X., et al., 2009]. There is no unified classification of the cause of spontaneous termination of pregnancy. Despite the contradictions of multiple opinions about the causal effect of factors on the development of FLS, a number of authors still consider the first spontaneous miscarriage an evolutionary mechanism for the elimination of defective offspring. The aim of our research was to study allelic variants and the association of polymorphism of the genotypes of the ADRB3 gene on the risk of non-gestation. Materials and methods of research. We examined 79 pregnant women aged 20 to 40 years who were under the supervision of an obstetrician–gynecologist in outpatient and inpatient conditions. As part of the study, a genetic analysis of biological blood samples from 79 female patients was performed to determine the genotypic polymorphism of the ADRB3 gene consisting of T/C alleles (rs4994). DNA/RNA isolation from all biological blood samples was performed using the Ribot-prep kit (Interlabservice, Russia). To identify polymorphism of the genotype consisting of T/C alleles (rs4994 of the ADRB3 gene, allele-specific primers from the manufacturer were selected from DNA samples The results of molecular genetic studies have shown that the possible connection of the unfavorable variant allele "C" polymorphism rs4994 of the ADRB3 gene, leading to the replacement of T with C at position 4994 of the amino acid sequence, with the development of miscarriage in pregnant women. It was found that the risk of fetal abnormality in pregnant women in the presence of a variant polymorphism allele in the genome increased by 1.7 times (OR=1.8). The obtained result also indicates that the heterozygous genotype of the rs4994 polymorphism of the ADRB3 gene is a genetic determinant, which is a predisposition factor for the development of this pathology, increasing its risk by 1.7 times (OR=1.8). The data obtained requires close attention from obstetricians and gynecologists. Conclusions. Thus, the data of our study showed the connection of the "C" allele and the heterozygous T/C genotype of the rs4994 polymorphism of the ADRB3 gene, with the development of non-miscarriage of pregnancy. At the same time, the risk of pathology formation with the carrier of the "C" allele and the T/C genotype increases by 1.5 (OR=1.51) and 1.8 (OR=1.75) times, respectively. The presence of the wild allele and genotype of the rs4994 polymorphism of the ADRB3 gene in a pregnant woman with plays a protective role in relation to the formation of FLS.

Biography:

In 2019, Dr. Nigora defended her dissertation for the degree of Doctor of Philosophy (PhD) in the specialty 14.00.01. – obstetrics and gynecology on the topic: "Molecular genetic prediction of the risk of fetal loss syndrome and improvement of diagnostics". In 2022, she completed her doctoral dissertation on the topic (DSc) “Molecular genetics and autoimmune mechanism of development of fetal growth restriction syndrome". She is the author of 54 scientific papers, including 4 patents for invention, 2 monographs and 6 methodological recommendations.

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Received: 30 January 2023 | **Accepted:** 07 February 2023 | **Published:** 05 May 2023