IJAE
Vol. 123, n. 1 (Supplement): 173, 2018
ITALIAN JOURNAL OF ANATOMY AND EMBRYOLOGY

Analysis of gene-gene interactions among patients with endometriosis

I.V. Ponomarenko[1], E.N. Krikun[2], M.I. Churnosov[1], R.F. Kapustin[3], M.V. Masnaya[2]

[1] Department Biomedical Sciences, Belgorod National Research University, Belgorod, Russia
[2] Belgorod National Research University, Medical College, Belgorod, Russia
[3] Department of Morphology and Physiology, Belgorod State Agrarian University Named After V.J. Gorin, Maiskii, Russia

Endometriosis is a process when benign growth of tissue is found outside of the uterus, the morphological and functional properties of such are alike endometrial [1-4]. The purpose of the study is an analysis of the role of a combination of four genes rs1514175, rs2241423, rs13111134 and rs5930973 in the formation of endometriosis among the population of the Central Chernozem Region of Russia.

Material and methods: 1376 individuals were involved in the study group: 395 patients with endometriosis and 981 female control group. Women of Russian nationality who are native of the Central Chernozem Region of the Russian Federation and who aren't relatives were included in the samples of patients and controls. Venous blood was material for the study in a volume of 6 ml taken from the median cubital vein of the proband. The allocation of genomic DNA from peripheral blood was carried out by phenol-chloroform extraction. Study of the polymorphism was carried out using the method of polymerase chain reaction using appropriate primers and probes on the thermocycler IQ5. Results: genotyping of the four studied molecular-genetic markers was conducted. Studying of the distribution of genotypes at the studied loci among the patients with endometriosis and in the control group revealed that Hardy-Weinberg equilibrium ($p>0.05$) is performed for them. It was found that among patients with endometriosis was the lowest frequency of combinations of genetic variants with rs1514175 with A rs2241423 with A rs13111134 and G rs5930973 (of 8.55%) compared to the control group (13,54%, $p=0.006$; OR=0,60, 95% CI: 0,40-0,89). Conclusions. In the study it was found that the combination of genetic markers with rs1514175 with A rs2241423 with A rs13111134 and G rs5930973 (OR=0,60) reduces the risk of developing endometriosis among women of the Central Chernozem Region of Russia.

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Key words

Endometriosis, gene-gene interactions.

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