

## Study of the frequency of occurrence of polymorphisms in patients with prostate cancer in the Kazakh population.

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### Abstract

**Statement of the Problem.** The incidence of prostate cancer (PCa) due to increased life expectancy is steadily increasing. Currently, a list of polymorphisms associated with the risk of tumors, their course and treatment response has been determined, but there is no convincing evidence for their clinical use.

**Objective is to study** the frequency of occurrence of polymorphisms in healthy men and patients with prostate cancer in the Kazakh population.

**Materials and methods.** Two groups of Kazakh - patients with prostate cancer (n = 480) and control (n = 479) were recruited during 2017-2019. DNA from blood samples were genotyped with 120 SNPs chip using qPCR (QuantStudio 12K, ThermoFisher). Genotype annotation was performed with ThermoFisher cloud.

**Findings.** The main and control groups are comparable in age. The average time from the diagnosis of prostate cancer to the time of inclusion in the study was 3.1 years, with a median of 2.7 years. The stage of the disease at the time of diagnosis in the main group of men with prostate cancer was: stage I - 12.6%; stage II - 40.9%; stage III - 30.8%; stage IV - 15.7%. The minimum allele frequency (MAF) of rs10187424 SNP for the control group was 39.5% (C-allele), while in the group with PCa, the C-allele was major (64.3%). Distribution by genotypes in the control group C / C - 6.2%, C / T - 66.7% and T / T - 27.1%. In the group with prostate cancer, C / S - 55%, C / T - 18.6% and T / T - 26.4%. After Bonferroni correction, p-values were obtained using the log-additive inheritance model: LO p.value <0.001 (4.761574e-23).

**Conclusion.** Minor allele (C- allele) of rs10187424 polymorphism located on 2 chromosome in VAMP8 gene has strong association with prostate cancer in Kazakh population. It should be noted that MAF in Kazakhs is very close to East Asians (38,6%) and South Asians (35.5%).

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### Biography

Seidalin Nazar is an oncologist. He has extensive clinical experience. In addition, he conducts research, in particular the study of a genetic predisposition to the development of cancer, since it provides an understanding of the potential mechanisms of tumor development.

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