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TERT polymorphisms rs2853669 and rs7726159 influence on prostate cancer risk in Russian population

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Abstract

© 2014, International Society of Oncology and BioMarkers (ISOBM). Telomere length and telomerase activity have been hypothesized to play a role in cancer development. The aim of our study was to investigate the association of allelic variants of three functional polymorphisms rs2853669, rs2736100, and rs7726159 in the telomerase reverse transcriptase (TERT) gene with the risk of the breast cancer and prostate cancer in Russian population. Six hundred sixty women with breast cancer, 372 men with prostate cancer, and corresponding control groups of 523 women and 363 men were included in the present case–control study. We observed an association of allele rs2853669 C with increased risk of prostate cancer (co-dominant model TC vs. TT OR = 1.65, P = 0.002; additive model OR = 1.42, P = 0.005; dominant model: OR = 1.64, P = 0.001) and allele rs7726159 A with reduced risk of this malignancy (co-dominant model: AA vs. CC OR = 0.42, P = 0.002; additive model: OR = 0.69, P = 0.002; dominant model: OR = 0.67, P = 0.01; recessive model: OR = 0.48, P = 0.005). None of the studied polymorphisms showed an association with the risk of breast cancer. Our results provide evidence that the TERT gene variability modulate prostate cancer predisposition in ethnical Russians.

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Keywords

Breast cancer, Prostate cancer, Russian population, SNP, TERT