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The impact of Breast Cancer Polymorphism on Breast Cancer

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Abstract : Breast cancer is the most common malignancy type among women with about 1 million new cases each year. The immune system plays an important role in the breast cancer development. OX40L (also known as TNFSF4), a membrane protein, which is a member of the tumor necrosis factor super family binds to its receptor OX40 and this co-stimulation has a crucial role in T-cell proliferation, survival and cytokine release. Due to the importance of the T-cells in anti-tumor activities of OX40L we studied the association of rs3850641 (T→C) polymorphism of OX40L gene with breast cancer. The study included 123 women with breast cancer and 126 healthy volunteers with no signs of cancer. Genomic DNA was extracted from blood leucocytes. Genotype and allele frequencies were determined in patients and control cases with the method of polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) and the analysis was performed by Med Calc. The prevalence of genotype frequencies of TT, CT and CC were 60.9%, 30.08% and 8.9 % in patients with breast cancer and 74.6 %, 18.25 % and 7.14 % in healthy volunteers while the T and C allelic frequency was 76.01% and 23.98 % in patients and 83.73% and 16.26% in healthy controls. Respectively Statistical analysis has shown no significant difference from the comparison of either genotype (P=0.06). According to these results, the rs3850641 SNP has no association with the susceptibility of breast cancer in a population in northern Iran. However, further studies in larger populations including other genetic and environmental factors are required to achieve conclusion.

Keywords : OX40L, gene, polymorphism, breast cancer
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