XRCC1 Gene Polymorphisms and Risk of Lung Cancer in Turkish Patients

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ABSTRACT Polymorphisms in the X-ray repair cross complementing 1 (XRCC1) gene have been found to be associated with susceptibility to various types of cancers. We investigated the association between the XRCC1 gene Arg399Gln polymorphism and the susceptibility to lung cancer in Turkish patients. To determine the association of this polymorphism with the risk of lung cancer in Turkish patients, a hospital-based case-control study was designed, involving 67 patients with lung cancer and 60 control subjects with no cancer history who were matched for age and gender. XRCC1 genotypes (Arg/Arg, Arg/Gln, and Gln/Gln) were determined using polymerase chain reaction–restriction fragment length polymorphism (PCR-RFLP) analysis on genomic DNA. No statistically significant relationship was determined between the lung cancer and control groups (p>0.05). Among the patients, 61% were Arg/Arg, 28% were Arg/Gln, and 11% were Gln/Gln. Among the controls, 50% were Arg/Arg, 38% were Arg/Gln, and 12% were Gln/Gln. There was no difference in the distribution of XRCC1 genotypes or the frequencies of the Arg (75% versus 69%) and Gln (25% versus 31%) alleles between the lung cancer patients and controls. Our results suggest that the XRCC1 gene Arg399Gln polymorphism is not associated with an increased risk for the development of lung cancer in Turkish patients.