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Source

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Abstract

Lung cancer is a complex disease, and many factors, including environmental and occupational exposure, cigarette smoking, and genetics, contribute to its progression. Angiotensin-converting enzyme (ACE) is an important regulator of blood pressure and cardiovascular homeostasis. Plasma levels of ACE depend on an insertion/deletion (I/D) polymorphism in its gene. Current correlation data between lung cancer and the ACE I/D polymorphism are contradictory or insufficient. We investigated whether the ACE I/D polymorphism is associated with a risk for lung cancer development in the Croatian population, representing the first report in a population of Slavic origin. A total of 308 lung cancer patients and 353 control subjects were genotyped for the ACE I/D polymorphism by polymerase chain reaction. The observed distribution of genotypes and alleles showed no significant difference between total patients and controls (p>0.050). However, in a subgroup of nonsmall cell lung cancer patients with squamous cell carcinoma, a significantly higher frequency of the DD genotype (37.7% vs. 27.8%, p=0.030, OR=1.57, 95% CI=1.05-2.36) and D allele was observed compared with the control group (61.3% vs. 52.8%, p=0.015, OR=1.41, 95% CI=1.07-1.87). The DD genotype of ACE may contribute to a higher risk of developing squamous cell carcinoma in the Croatian population.

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