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Genetic variant in the CYP17 gene and risk of premature coronary artery disease.

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Abstract

INTRODUCTION:

Sex hormones are well known to increase the risk of coronary artery disease (CAD). The CYP17 gene encodes the enzyme cytochrome P450c17, which functions at key steps during the process of human sex steroid hormone synthesis. A T/C polymorphism in the 5 promoter region of the CYP17 gene influences its expression and the resulting serum levels of androgens and estrogens. The aim of this casecontrol study was to investigate the role of a T/C CYP17 polymorphism in premature CAD and the occurrence of myocardial infarction (MI) in the Caucasian Greek population.

METHODS:

Our study group consisted of 230 CAD patients, aged less than 58 years, while 200 healthy individuals served as controls. The genotyping of the T/C CYP17 polymorphism was carried out using the PCRRFLP method.

RESULTS:

The frequencies of TT, TC, and CC genotypes were 0.38, 0.42, and 0.20, respectively, in the patient group, and 0.35, 0.44, and 0.21, respectively, in the control group. Allele frequencies for the patient group were 0.58 and 0.42 for T and C, respectively, and 0.57 and 0.43, respectively, for the control group. Statistical analysis revealed no significant differences between patients and controls in genotype frequencies (p=0.8746) or allele frequencies (p=0.6783).

CONCLUSIONS:

These findings do not support the hypothesis that the genetic variation T/C of the promoter of the CYP17 gene is an important contributing factor in the aetiology of premature CAD or occurrence of MI in the Caucasian Greek population.

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