Relationship between CYP17 gene polymorphisms and risk of prostate cancer

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ABSTRACT. Cytochrome P450 17α-hydroxylase (CYP17) plays a critical role in androgen biosynthesis. Polymorphisms of the CYP17 promoter have been proposed as risk factors for prostate cancer; however, some studies have produced inconclusive or controversial results. We investigated the relationship between polymorphisms of the CYP17 gene and the risk of prostate cancer. A total of 176 patients with prostate cancer were enrolled in the study, and 168 healthy individuals acted as the control group. The participants were divided into those <71 years old and those ≥71 years old. Restriction fragment length polymorphism-polymerase chain reaction was used to confirm the genotype of CYP17 in the samples. The prostate-specific antigen (PSA) concentrations were also measured in all subjects. When T/C and C/C were compared with T/T, the ORs were 0.478 (P = 0.489) and 0.814 (P = 0.367), respectively. There was no significant difference in PSA concentration among the three genotypes in the <71 group, whereas there were statistically significant differences in the ≥71 group (P = 0.003 and 0.012, respectively). There was no significant difference in free PSA and total PSA levels between the three groups and the control group. The T/C and C/C genotypes were not associated with the risk of prostate cancer, and there were no significant differences between them. In the ≥71 group, the T/C and C/C genotypes were closely associated with...
prostate cancer, which suggests that the CYP17 gene might be a risk factor for prostate cancer in males of advanced age.

**Key words:** Prostate cancer; CYP17 gene; Polymorphism