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CYP17, *SRD5A2*, *CYP1B1*, and *CYP2D6* Gene Polymorphisms with Prostate Cancer Risk in North Indian Population

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Abstract

To investigate the involvement of the CYP17, SRD5A2, CYP1B1, and CYP2D6 variants with prostate cancer, a case–control study of 100 patients and an equal number of age-matched control men was conducted. There appears to be a nonsignificant increase with risk of prostate cancer for individuals carrying one copy of the CYP17 A2 allele (OR, 1.80; 95% CI, 0.99–3.29, $P = 0.05$). The risk was increased in individuals having two A2 alleles (OR; 2.81, 95% CI, 1.06–7.40, $P = 0.03$). Compared with men having the VV genotype of SRD5A2 gene, there was no significant association between the VL genotype and the risk of prostate cancer (OR; 0.54, 95% CI; 0.29–1.03, $P = 0.06$). There was no difference in the occurrence of the genotype LL between controls and prostate cancer patients (OR; 0.90, 95% CI; 0.43–1.89, $P = 0.79$). There was a nonsignificant increased risk of prostate cancer for individuals carrying the *CYP1B1Leu/Val* genotype (OR, 1.70, 95% CI, 0.91–3.17, $P = 0.09$), which was increased in those having the *Val/Val* allele (OR, 3.38; 95% CI, 1.13–10.07,$P = 0.02$). Relative to men homozygous for the wild-type allele in CYP2D6 gene, those heterozygous for the B allele had an odds ratio of 1.78 (95% CI, 0.76–4.17, $P = 0.18$) for patients, and for homozygous individuals, it was 1.95 (0.55–6.93, $P = 0.30$). These observations have suggested that the *CYP17 A2/A2, CYP1B1 Val/Val*, and *CYP2D6* genotypes may be associated with an altered risk of prostate cancer, while the CYP2D6 and *SRD5A2* V89L polymorphism have no association with its risk in the North Indian population.