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# Hormone receptorrelated gene polymorphisms and prostate cancer risk in North Indian population

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# **Abstract**

The purpose of this study was to analyse the frequency and type of mutations in the coding region of androgen receptor (AR) and to determine the role of polymorphisms in the intron 1 of  $ER\alpha$ , exon 5 of  $ER\beta$ , intron 7 of progesterone, exon 7 of the aromatase (CYP19) and exon 9 of VDR genes in the risk of prostate cancer. PCR-RFLP analysis of all above the genes was on 100 prostate cancer patients and an equal number of matching controls. The study also included PCR-SSCP analyses of exons 2-8 of AR gene. The genotype containing -/- allele of  $ER\alpha$  gene was statistically significant for the risk of prostate cancer pose (OR, 2.70; 95% CI, 1.08–6.70, P = 0.032) Rr genotype of  $ER\beta$  gene also have a higher risk (OR, 1.65; 95% CI, 0.52-5.23) for prostate cancer. The Cys allele of CYP19 gene was also associated with statistically significant increased risk of prostate cancer (OR; 2.28, 95% CI, 1.20–4.35, P = 0.012). tt genotype of codon 352 of VDR gene showed an OR of 0.43 for (95% CI, 0.13-1.39) and an OR for Tt genotype was 0.65 (95% CI, 0.36-1.16). Taken together, the results showed that in North Indian population,  $ER\alpha$  and CYP19 genes may be playing a role in the risk of prostate cancer.

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