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PRINT: ISSN 0972-3757 ONLINE: 2456-6360

Int J Hum Genet, 5(1): 19-25 (2005)
DOI: 10.31901/24566330.2005/05.01.03

HLA DQB1*03 Genotypes and Susceptibility to Cervical Cancer in Indian Women

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KEYWORDS Cervical cancer; human papillomavirus; HLA DQB1*03 genotypes; age of subjects

ABSTRACT DNA from i) fresh tissues derived out of 89 women with CaCx (61 HPV16/18 positive) and ii) cervical scrapes from 213 cytologically normal women (73 HPV16/18 positive) were genotyped for HLA DQB1*03 by PCR and RFLP. The distribution of the genotypes of HLA DQB1*03 differed significantly between the malignant and control subjects ($p=0.022$). The homozygous genotype was overrepresented among those having CaCx ($OR_{age-adjusted}=2.94$, 95% CI= 1.49-5.81, $p=0.002$), or HPV16/18 positive CaCx ($OR_{age-adjusted}=2.32$, 95% CI= 1.07-5.01; $p=0.033$), when this was compared to the other genotypes (HLADQB1*03 non-homozygous, i.e. heterozygous and null together). Analysis restricted to the HPV16/18 positive CaCx and cytologically normal subjects failed to show such association. The heterozygous genotype, instead, showed a negative association with HPV16/18 positive CaCx over the null genotype ($OR_{age-adjusted}=0.42$, 95% CI= 0.18-0.96; $p=0.040$) when HPV16/18 positive CaCx cases were compared with HPV negative cytologically normal controls. The association of HLA DQB1*03 homozygosity with CaCx was noted among those of age < 47 years. The genotypes of HLA DQB1*03 are likely to be important in determining the susceptibility to HPV or HPV16/18 related CaCx in Indian women.

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