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Short communication

Genetic polymorphisms of *CYP2D6*, *GSTM1*, and *GSTT1* genes and bladder cancer risk in North IndiaR.C. Sobti ^a  , A.I. Al-Badran ^a, S. Sharma ^a, S.K. Sharma ^b, A. Krishan ^c, H. Mohan ^dShow more 

Outline



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Abstract

The study consisted of 100 patients (97 males and 3 females) suffering from bladder cancer and 76 matching controls. The maximum number of patients in this study was in the age group of 61–70 years. The prevalence of genetic polymorphism in the *CYP2D6*, *GSTM1*, and *GSTT1* genes has been investigated to find their association with risk of bladder cancer. While there was no association between the heterozygous (HEM) genotype of the *CYP2D6* gene with the risk of bladder cancer [odds ratio (OR) = 1.00; 95% confidence interval (CI) = 0.46 – 2.16], it was 1.5-fold with poor metabolizers (PM) genotype. When stratified according to different grades of bladder cancer, a significant association was found with an OR = 3.54 (95% CI = 0.89 – 13.98) in grade II, 3.3 (95% CI = 0.12 – 20.6) in grade III, and 1.67 (95% CI = 0.15 – 18.45) in grade IV. When stratified in relation to smoking status, significant association of the disease was found in heavy smokers with an OR = 2.13 (95% CI = 0.71 – 6.43). Subjects with the null genotype for *GSTM1* had a slightly

significant association with the bladder cancer risk and the risk increased to 2-fold with the *GSTT1* null genotype. Smoking status also revealed an impact on the prevalence of bladder cancer in the individuals with *GSTM1* and *GSTT1* null genotypes. The results indicated that there is a 3-fold increase in risk of developing this cancer in the presence of one copy of the variant *CYP2D6* (HEM) allele and null *GSTT1*.

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