



***CYP1A2*-163C/A (rs762551) polymorphism and bladder cancer risk: a case-control study**

Y.L. Song^{1,2}, L. Wang², J.C. Ren¹ and Z.H. Xu¹

¹Department of Urology, Qilu Hospital, Shandong University, Jinan, China

²Department of Urology, Zaozhuang Municipal Hospital, Zaozhuang, China

Corresponding author: Z.-H. Xu

E-mail: xuzhonghuaqlurol@126.com

Genet. Mol. Res. 15 (2): gmr.15026298

Received July 24, 2015

Accepted November 10, 2015

Published April 26, 2016

DOI <http://dx.doi.org/10.4238/gmr.15026298>

ABSTRACT. To date, no study has investigated the association between *CYP1A2*-163C/A polymorphism and bladder cancer risk in a Chinese population. Here, we extracted genomic DNA from peripheral white blood cells, and differentiated *CYP1A2* alleles by polymerase chain reaction-based restriction fragment length polymorphism methods. Differences in genotype frequencies between the cases and controls were evaluated using a chi-square test. The odds ratio (OR) and its 95% confidence interval (CI) were calculated using an unconditional logistic regression model. This revealed that the -163A allele was present at a significantly increased frequency in bladder cancer patients compared to healthy controls (44.10 vs 22.25%, $P < 0.001$). The prevalence of CC genotype, CA genotype, and AA genotype was 34.91, 41.98, and 23.11% in bladder cancer patients, and 64.00, 27.50, and 8.5% in the controls, respectively. Therefore, significant differences in the frequencies of -163 genotypes were found between bladder cancer patients and controls ($P < 0.001$). We found that the AA genotype was significantly associated with increased bladder cancer risk (OR = 3.72; 95%CI = 1.55-7.16; $P = 0.02$), and the -163A carriers were at increased risk of bladder cancer in a multivariate COX regression model (OR = 4.89, 95%CI = 2.78-10.87, $P = 0.01$). We conclude that the *CYP1A2*-

163C/A polymorphism is associated with increased susceptibility to bladder cancer in the Chinese population.

Key words: CYP1A2; Polymorphism; Bladder cancer; Risk