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Meta-analysis of epidemiological studies of association of P53 codon 72 polymorphism with bladder cancer

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ABSTRACT. Although there have been many studies investigating a possible association between p53 codon 72 polymorphism and risk of bladder cancer, the results have been inconsistent. We conducted a meta-analysis of six epidemiological studies, which included 597 bladder cancer cases and 731 controls. Patients with bladder cancer had a significantly lower frequency of Pro/Arg [odds ratio (OR) = 0.80, 95% confidence interval (CI) = 0.64-0.99], when compared to controls. Stratifying for race, we found that among Caucasians, patients with bladder cancer had a significantly higher frequency of Arg/Arg (OR = 1.64, 95%CI = 1.18-2.28) and a lower frequency of Pro/Arg (OR = 0.62, 95%CI = 0.44-0.86), compared to controls. Stratifying various studies by the stage of bladder cancer, we found that invasive bladder cancers had a significantly lower frequency of Arg/Arg (OR = 0.58, 95%CI = 0.36-0.93) and a higher frequency of Pro/Arg (OR = 0.62, 95%CI = 0.44-0.86) than did non-invasive bladder cancers. No significant association

was found between this genotype and human papilloma virus. Based on our meta-analysis, we suggest that p53 codon 72 polymorphism is associated with bladder cancer and that genotypic distribution of this polymorphism varies with the stage of bladder cancer.

Key words: Bladder cancer; p53 codon 72; Gene polymorphism; Meta-analysis

