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Association between the pre-miR-196a2 rs11614913 polymorphism and gastric cancer susceptibility in a Chinese population

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ABSTRACT. We did a case-control study to provide a more comprehensive evaluation of the association of the pre-miR-196a2 rs11614913 polymorphism with gastric cancer. Between January 2013 and December 2014, 182 patients newly diagnosed with primary gastric cancer and 182 control subjects were recruited at Zhengzhou People's Hospital. For SNP genotyping, we used the Assay Designer 3.1 to design the primers of polymerase chain reaction. Using the chi-square test, we found that patients with gastric cancer were more likely to be alcohol drinkers ($\chi^2 = 4.4$, $P = 0.04$), to have a family history of cancer in the first relatives ($\chi^2 = 5.29$, $P = 0.02$), and to be infected with *Helicobacter pylori* ($\chi^2 = 23.39$, $P < 0.001$). A significant difference in the genotype distributions of rs11614913 was observed in our study ($\chi^2 = 6.66$, $P = 0.04$). By logistic regression analysis, we found that the *CC* genotype of rs11614913 was associated with an increased risk of gastric cancer in a codominant model (OR = 2.68, 95%CI = 1.17-6.44). By stratification analysis, we found that the *CC* genotype was associated with a strongly increased risk of gastric cancer in drinkers when compared with the *TT+TC* genotype (OR = 5.63, 95%CI = 1.54-

30.76). In conclusion, the results of our study suggest an association between the rs11614913 gene polymorphism and an elevated risk of gastric cancer, especially in drinkers.

Key words: Gastric cancer; Pre-miR-196a2; Rs11614913; Genotype

