



Investigating the role of polymorphisms in miR-146a, -149, and -196a2 in the development of gastric cancer

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ABSTRACT. Here, we performed a case-control study to investigate the role of miR-146a, miR-149, and miR-196a2 polymorphisms in the development of gastric cancer using a hospital-based case-control design. A total of 186 gastric cancer patients and 186 control subjects were enrolled from Ren Ji Hospital between January 2012 and October 2014. MicroRNAs miR-146a, miR-149, and miR-196a2 were genotyped by polymerase chain reaction coupled with restriction fragment length polymorphism. Univariate logistic regression analysis revealed that patients with gastric cancer were more likely to be infected with *Helicobacter pylori* [odds ratio (OR) = 1.68, 95% confidence interval (CI) = 1.07-1.96]. Conditional multiple logistic regression analysis revealed that the TT genotype of miR-196a2 was associated with an increased risk of gastric cancer compared to the CC genotype (OR = 2.40; 95%CI = 1.26-4.61). Moreover, patients carrying both the TC and TT genotypes of miR-196a2 were correlated with an elevated risk of gastric cancer compared to those expressing the CC genotype alone (OR = 1.67, 95%CI = 1.01-2.75; P = 0.03). In conclusion, the results of

our study indicated that the miR-196a2 polymorphism was associated with gastric cancer development.

Key words: miR-146a; miR-149; miR-196a2; Polymorphism; Gastric cancer