

## Association of miRNA146a rs2910164 Polymorphism and Helicobacter pylori Infection in Colorectal Cancer

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**Abstract :** Colorectal cancer (CRC) is a multi-step disease, and chronic gastric infection with *H. pylori* could play a role in one or more of the steps in this pathogenic process. Polymorphisms in several miRNAs are considered to increase the risk for the development of CRC by controlling proliferation, apoptosis and *H. pylori* pathogenesis. Therefore, the aim of this study was to investigate miRNA146a rs2910164 polymorphism and *Helicobacter pylori* infection in CRC. A total of 65 patients with CRC were divided into 2 groups: 28 patients < 50 years of age and 37 patients  $\geq$  50 years of age. DNA was extracted from all samples by a standard method and *H. pylori* cagA and miRNA146a rs2910164 genotypes were determined by PCR method. The results show that there was no significant difference in the frequency of *H. pylori* cagA gene between the two groups but there was a significant difference in the distribution of rs2910164 genotypes in patients < 50 years of age with the p-value of 0.05 and odds ratio equal to 2.69. On other hand, patients < 50 years of age with genotype CC of miRNA146a showed a significant difference in CRC risk. Furthermore, there was a significant correlation between rs2910164 CC genotype with *Helicobacter pylori* infection in patients < 50 years of age. The present study suggests that the CC genotype of miRNA146a in combination with *H. pylori* infection can be effective as risk factors and molecular markers for early diagnosis and treatment of CRC.

**Keywords :** colorectal cancer, *Helicobacter pylori*, miRNA146a, rs2910164 polymorphism

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