Original Paper

Increased risk of gastric cancer in the CC genotype -31C/G polymorphism in *Survivin* gene promoter

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Abstract

Background and Objective: Gastric cancer is the most common cancers worldwide. The *survivin* gene which encodes an apoptosis protein inhibitor plays an important role in maintenance and integrity of the gastric mucosa. The gene is necessary for the normal physiologic function of the stomach, but its expression increases in gastric cancer. Regarding with the role of polymorphisms of the promoter region in genes expression, this study was done to determine the association of single-nucleotide polymorphism (rs9904341) -31C/G in promoter *survivin* gene with risk of gastric cancers.

Methods: In this case-control study, 101 patients with gastric cancer and 101 matched age and gender healthy subjects as the control were examined by PCR-RFLP technique.

Results: Genotype CC was significantly increased the risk of gastric cancer up to 2.4 folds (95% CI=1.03–5.61, P<0.04) and allele C, as risk allele, significantly increased the risk of gastric cancer up to 1.5 folds (95% CI=1.02–2.30, P<0.03). Also, CC + GC genotypes significantly increased the risk of diffuse type of gastric cancer by 4.4-fold (95% CI=1.30-15.10, OR=4.4, P<0.01).

Conclusion: This study showed that single- nucleotide polymorphism (rs9904341) -31C/G in promoter *survivin* gene significantly increase the risk of gastric cancers.

Keywords: Gastric cancer, *Survivin* gene, Single nucleotide polymorphism- rs9904341

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