Association of Single Nucleotide Polymorphism rs6983267 with Esophageal Cancer Grades

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Introduction: Esophageal cancer is the sixth causes of cancer-related death worldwide. Recent genome-wide association studies have identified single-nucleotide polymorphisms (SNPs) which might be effective in increasing the risk of different cancers. Some of these studies have demonstrated strong evidence for associations of various genetic variants such as rs6983267 on chromosome 8q24 with susceptibility to prostate, colorectal, breast, bladder, ovarian, thyroid and some other cancers in different populations. Therefore, rs6983267 can be a good candidate as a multicancer susceptibility marker. This polymorphism is a G/T single nucleotide variation. It has been reported that individuals with the GG genotype of rs6983267 are more likely to develop the mentioned cancers.
Materials & Methods: In the current study to determine the relationship between the three genotypes of rs6983267 and grades of esophageal cancer, we analyzed these variants in 110 esophageal cancer patients in Mashhad, Iran. Genomic DNA was extracted from 5 ml blood and the rs6983267 SNP was genotyped using Taqman real time PCR method.
Results: The Chi-square test was used to compare the association between genotypes of rs6983267 and grades of cancer. Significant differences were observed between various genotypes and the grades of tumors. Our results indicated that patients with higher grades of tumors were mostly genotyped with G allele.
Conclusion: In conclusion, our findings suggest that different genotypes of rs6983267 SNP have significant association with grades of esophageal cancer. However, larger populations in further studies are required to confirm the association between the risk allele of G and higher grades of esophageal cancer.