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Association of a Genetic Polymorphism in Cytochrome P450, Family 1 with Risk of Developing Esophagus Squamous Cell Carcinoma

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Abstract : Background Esophageal cancer has been reported as the eighth most common cancer universal and the seventh cause of cancer-related death in men .recent studies have revealed that cytochrome P450, family 1, subfamily B, polypeptide 1, which plays a role in metabolizing xenobiotics, is associated with different cancers. Therefore in the present study, we investigated the impact of CYP1B1-rs1056836 on esophagus squamous cell carcinoma (ESCC) patients. Method: 317 subjects, with and without ESCC were recruited. DNA was extracted and genotyped via Real-time PCR-Based Taq Man. Kaplan Meier curves were utilized to assess overall and progression-free survival. To evaluate the relationship between patients clinicopathological data, genotypic frequencies, disease prognosis, and patients survival, Pearson chi-square and t-test were used. Logistic regression was utilized to assess the association between the risk of ESCC and genotypes. Results: the genotypic frequency for GG, GC, and CC are respectively 58.6% , 29.8%, 11.5% in the healthy group and 51.8%, 36.14% and 12% in ESCC group. With respect to the recessive genetic inheritance model, an association between the GG genotype and stage of ESCC were found. Also, statistically significant results were not found for this variation and risk of ESCC. Patients with GG genotype had a decreased risk of nodal metastasis in comparison with patients with CC/CG genotype, although this link was not statistically significant. Conclusion: Our findings illustrated the correlation of CYP1B1-rs1056836 as a potential biomarker for ESCC patients, supporting further studies in larger populations in different ethnic groups. Moreover, further investigations are warranted to evaluate the association of emerging marker with dietary intake and lifestyle.

Keywords : Cytochrome P450, esophagus squamous cell carcinoma, dietary intake, lifestyle
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