

عنوان مقاله:

The role of the APC gene in Colorectal Cancer

محل انتشار:

دهمین کنفرانس بین المللی بهداشت، درمان و ارتقای سلامت (سال: 1401)

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خلاصه مقاله:

Introduction: Most colorectal cancers are due to aging and lifestyle factors, and a small number of cases are caused by genetic disorders (۱). There are many genes that cause colorectal cancer such as APC, TP۵۳, KRAS, etc. Adenomatous polyposis Coli (APC) is a protein-negative regulator that regulates beta-catenin concentrations and interacts with E-cadherin, which is involved in cell adhesion. APC is classified as a tumor suppressor gene, preventing the uncontrolled growth of cells that may result in cancerous tumors (۲). Material and methods: First, by examining the types of cancers based on the prevalence and related research on the Genomic Data Commons (GDC) Data Portal/Atlas Cancer website, colorectal cancer was selected. Using the DisGeNET database, potential genes were obtained based on Digital Sequence Information on Genetic Resources (DSI), PLI (Probability of being Loss-of-function Intolerant), and score filters. The genes were evaluated based on their P values. The role of the APC gene was examined in the Tumor Portal database and some filters such as gender, age, ethics, vital status, and types of mutations were applied. Finally, colorectal cancer was investigated in terms of clinical characteristics, the rate of affected people, and the relationship between genotype and phenotype of potential genes through the Genotype-Phenotype Integrator/Phenotype Selection dbGap and Online Mendelian Inheritance in Man (OMIM) website. Results: According to the DisGeNET website, the disease specificity index (DSI) for APC was low and this shows high specificity for this cancer. The score for APC was ۱ representing a high degree of association between the gene and the disease, and for PLI was ۱, which indicates that the loss of function of this gene is dangerous for humans. The tumor portal website revealed ۱۷۳/۲۳۳ patients, i.e. ۷۸% of patients with mutations in this gene. Conclusion: The APC gene is more frequent than other genes, and the survival rate for people who carry mutations in the APC gene is less likely to survive than for those who do not. Men are more likely than women to develop colorectal cancer, and most of these cancers are primary tumors. The survival rate for colorectal cancer is relatively high and only a small number of people die.

کلمات کلیدی:

Colorectal Cancer, APC gene, Genomic Data Commons (GDC) Data Portal, Atlas Cancer website, DisGeNET

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