

عنوان مقاله:

Promoter Methylation of Four Tumor Suppressor Genes in Human Papillary Thyroid Carcinoma

محل انتشار:

فصلنامه آسیب شناسی ایران، دوره 14، شماره 4 (سال: 1398)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Fatemeh Khatami - *Chronic Diseases Research Center, Endocrinology and Metabolism Population Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran*

Bagher Larijani - *Endocrinology and Metabolism Research Center, Endocrinology and Metabolism Clinical Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran*

Ramin Heshmat - *Chronic Diseases Research Center, Endocrinology and Metabolism Population Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran*

Shirzad Nasiri - *Department of Surgery, Tehran University of Medical Sciences, Shariati Hospital, Tehran, Iran*

خلاصه مقاله:

Background & Objective: Papillary thyroid cancer (PTC) is considered to be the most common type of thyroid malignancies. Epigenetic alteration, in which the chromatin conformation and gene expression change without changing the sequence of DNA, can occur in some tumor suppressor genes and oncogenes. Methylation is the most common type of epigenetic alterations that can be an excellent indicator of PTC invasive behavior. **Methods:** In this research, we determined the promoter methylation status of four tumor suppressor genes (SLC5A8, RASSF1, MGMT, and DNMT1) and compared the results of 55 PTC cases with 40 goiter patients. For methylation, we used the methylation-sensitive high resolution melting (MS-HRM) assay technique. The resulting graphs of each run were compared with those of 0%, 50%, and 100% methylated controls. **Results:** Our data showed that the promoter methylation of SLC5A8, Ras association domain family member 1 (RASSF1), and MGMT were significantly different between PTC tissue and goiter with P-value less than 0.05. The most significant differences were observed in RASSF1; 77.2% of hyper-methylated PTC patients versus 15.6% hyper-methylated goiter samples ($P < 0.001$). **Conclusion:** RASSF1 promoter methylation can be a PTC genetic marker. RASSF1 promoter methylation is under the impact of the methyltransferase genes (DNMT1 and MGMT), protein expression, and promoter methylation.

کلمات کلیدی:

Tumor suppressor genes, Methylation, Papillary thyroid cancers

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