



Identification of *p53* gene internal promoter mutations in patients with gastric cancer in Ardabil

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Abstract

Gastric cancer is one of the most common cancers and it is the third cause deaths from cancer in the world. $\Delta 133p53$ isoform has anti-apoptotic role and it is expressed from an internal promoter that located in intron 4 of *p53* gene. Mutations in sequences of intron 4 by changing the transcription factors binding sites can change internal promoter activity and expression of $\Delta 133p53$ isoform. The aim of this study is the identification of mutations of intron 4 of *p53* gene in patients with gastric cancer. In this study tumor and control tissues isolated via endoscopy from 48 patients with gastric cancer who had referred to Imam Khomeini hospital in Ardabil and they had no family history of stomach cancer. Genomic DNA of tissues extracted and the sequence of intron 4 of the *p53* gene amplified and sequenced. Finally, tumor samples sequence compared with normal tissues sequence from the same individual. Also the personal information of patients collected using questionnaires and analyzed. The results of sequencing showed that there is a T to G transversion mutation at the 141 position of intron 4 in 27.3% of tumor samples and G to T transversion mutation at the 291 position of intron 4 in 18.2% of tumor samples. The most common type of tumor in this study was intestinal adenocarcinoma. 80.4% of patients were over 60 years old, and 41.37% of patients had a history of smoking more than five years. The results show that Intron 4 of *p53* gene mutations can be raised as an increasing factor of gastric cancer risk and the mutations of this region can be considered as a molecular marker for genetic study of patients with gastric cancer.

Keywords: gastric cancer, *p53* gene, intron 4, internal promoter