The study of p53 polymorphism at codon 72 in patients with thyroid cancer in East Azerbaijan province

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Abstract: Introduction: Thyroid cancer is the most common malignancy of the endocrine system. Ethnic and geographic discrepancies are involved in cancers. Cancer associated with mutation in tumor suppressor genes and oncogene. In addition to mutation, genetic polymorphisms are involved in incidence of cancer.

Purpose: The purpose of this investigation was studying polymorphism at codon 72 of p53 gene in patients with thyroid cancer in East Azerbaijan province.

Material and Methods: In case-control study 60 patients with thyroid cancer in different age and sex groups, as well as 99 healthy individuals as controls were collected in East Azerbaijan. After extraction of DNAs from these people bloods by Proteinase K protocol, different genotypes of 72th codon of p53 gene were determined by amplification refractory mutation system (ARMS) and presence of probable mutation, single strand conformation polymorphism (SSCP) technique was conducted. Also for confirm the results, Exon 4 of p53 gene was investigated by DNA sequencing.

Result: In the control group, the genotype distribution of p53 polymorphism for Arg/Arg, Arg/Pro and Pro/Pro genotypes was 30.3%, 50.5% and 19.2% respectively. In the cancer groups, the distribution was 31.67%, 51.67%, 16.67% respectively for the same order of genotypes.

Discussion: This study indicates that polymorphism at codon 72 p53 gene is not a genetic predisposing factor for thyroid cancer in this population due to from ethnic, geographic discrepancies and p53 mutation.

thymroid cancer, p53 gene, codon 72, polymorphism

Presentation: Poster