A study of relationship between polymorphism p53 in codon 72 With oxidative stress indicators in patients with Esophageal cancer and control group

Abstract

Introduction: Esophageal cancer is the third most common malignancy in the digestive system worldwide. Risk factors for esophageal cancer include environmental, biological and genetic factors and among them, environmental factors lead to develop esophageal malignancy through increasing oxidative stress. p53 is one of the most important protein in serum which has considerable role in suppressing oxidative stress. The aim of present study is evaluation the relationship of polymorphism p53 gen in codon 72 With oxidative stress indicators in patients with Esophageal cancer and control group.

Method and material: In a case-control study, 64 individuals (32 patients with Esophageal cancer as a case Group and 32 healthy subjects as a control group) were followed for one year in Sayyad Shirazi hospital and Daziani clinic, Gorgon city. Then, the serum levels of the SOD, GPX, p53, MDA, were measured and the polymorphism p53 gen were determined in blood samples. Results were analyzed by t-test, ANOVA and chi-square, descriptive statistical tests.

Results: Results indicated that frequency percent of Arginine – Arginine and Arginine –proline and proline - proline genotypes were 18/75, 37/5 and 43/75 in case Group and 9/53, 56/25 and 34/37 in control group. Mean of serum levels of GPX and MDA in case group is higher than control group (p = 0/001) while there is not any significant difference between two groups in their serum levels of SOD and P53 protein. There is not any significant relationship between polymorphism p53 gen in codon 72 and GPX ,SOD,MDA indicators of oxidative stress in control and case groups.
Conclusion: Results of present study showed that proline – proline had highest rate of frequency in case group. Distribution of arginine- arginine was very less in its frequency rate in two groups and Arginine –proline had highest rate of frequency in control group. With respect to that there was not any significant relationship in distribution of two groups, there was significant relationship between GPX and MDA level in two groups and there was not any significant relationship between SOD and P53 serum protein in two groups, increasing oxidative stress indicators serum level are high risk factors for Esophageal cancer.

Keywords: Esophageal cancer, oxidative stress, Polymorphism, p 53 protein, eating factors, Gorgan.