

## **Evaluation of Tp53 codon 72 polymorphism and resulted protein in breast cancer patients in Yazd city**

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### **Abstract**

**Background:** Breast cancer is the most common cancer in women. P53 is the most important tumor suppressor genes and genetic polymorphism of p53 is known as a risk factor for breast cancer. P53 mutation has been seen in 20-40% of breast cancer patients. DNA damage causes p53 phosphorylation and p53 accumulation in nucleus. Therefore the aim of this study is assess the evaluation of p53 Arg/Pro polymorphism at codon 72 and expression of p53 protein in breast cancer women in Yazd city.

**Methods:** In case-control study, 104 patients with breast cancer and 104 matched controls in Yazd city were chosen. After DNA extraction, P53 codon 72 polymorphism was determined by ARMS-PCR technique and P53 overexpression was evaluated by immunohistochemistry method.

**Results:** In breast cancer patients group, the distribution of codon 72 polymorphism for Arg/Arg, Pro/Pro and Arg/Pro is 49.04, 21.15 and 29.81 percent respectively and in control group is 21.15, 26.92 and 51.93 percent respectively. The significant difference was seen between distribution of Arg/Arg and Arg/Pro genotype in breast cancer patients and control group ( $P < 0.05$ ). Also P53 negative was observed in 71.15% and p53 positive in 28.85 % of breast cancer patients. Therefore, significant difference was seen between p53 positive and negative ( $P < 0.01$ ).

**Conclusion:** The results of this study showed that Arg/Arg genotype is a talented genetic factor for breast cancer, while Arg/Pro genotype has protective role against breast cancer. Also the tumor tissues of breast cancer patients have shown different levels of p53 protein.

**Keywords:** Polymorphism codon 72, p53 gene, Breast cancer.