**ID: 7054**

**Congress:** 1st Tabriz International Life Science Conference and 12th Iran Biophysical Chemistry Conference

**Title:** Association of the length of polyalanine tract in the transforming growth factor β receptor 1 gene & risk of breast cancer

**Authors:** Elahe Kamali*¹, Manoochehr Tavassoli¹, Parisa Kheradmand¹, Simin Hematti², Foroozan Safari¹

**Corresponding Author:** Elahe Kamali  
* e.kamali67@gmail.com

**Abstract:**  
**Introduction:** Breast cancer is a disease resulting from complex interactions between environmental and genetic factors. Genetic factors such as genetic polymorphisms could modulate several important biological progress and alert susceptibility to cancer consequently. TGF-β is a multifunctional cytokine belonging to the TGF-β superfamily of secreted cytokines that plays a complex role in breast carcinogenesis. Initially TGF-β acts as a tumor suppressor by inhibiting cell proliferation, but as tumor progression occurs, malignant cells become resistant to its growth inhibitory effects. Aberrations of the TGF-β signaling pathway are frequently found in many diseases including human cancers in breast, colon, prostate or pancreas. TGFBR1 contains a common alanine coding region with a GCG repeat. Polymorphism in this region may be attributed to breast cancer. The purpose of this study is the evaluation of this polymorphism to clarify whether there is any association between them and breast cancer risk.  

**Method:** This study was a case-control study on 150 patients and 150 controls women. After DNA extraction from the blood sample of study subjects, the polymorphism expansion was amplified by the technique of Polymerase Chain Reaction (PCR). Thereafter the number and sequence of GCG was analyzed by polyacrylamide gel and direct sequencing.  

**Results:** So far we have observed alleles with different number of GCG repeats. The results of this study were shown that TGF-βR1 gene allele distribution varies between 6 to 9 repeat and (GCG)9 was the most common allele between cases and controls. Women with (GCG)6 genotype may be in a greater risk of breast cancer.  

**Conclusions:** These findings indicate a direct relationship between the number of repetitive sequence in exon1 of TGF-βR1 gene and increased risk of breast cancer.

**Breast cancer, TGF-βR1, GCG repeat, Polymorphism**

**Presentation:** Poster