Multidisciplinary Cancer Investigation **Original Article**

Supplement Issue1: International Tehran Breast Cancer Congress (TBCC9)

The Prognostic Value of HER1 R497K in Patients with Breast Cancer

Soodabeh ShahidSales [1,*], Masoumeh Baderi [2], Kazem Anvari [1], Amir Avan [2,3,*]

[1] Cancer Research Center, Mashhad University of Medical Sciences, Mashhad, Iran
[2] Department of Modern Sciences and Technologies, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
[3] Metabolic syndrome Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

** Corresponding authors: Soodabeh ShahidSales, Cancer Research Center, Mashhad University of Medical Sciences, Mashhad, Iran. E-mail: ShahidSaless@mums.ac.ir*

Amir Avan, Metabolic syndrome Research Center, Mashhad University of Medical Sciences, Mashhad, Iran. E-mail: avana@mums.ac.ir & amir_avan@yahoo.com

DOI: 10.21859/mci-supp-13

Keywords:
Breast Cancer
HER1
HER2
Genotype
Biomarker

Abstract

Introduction Breast cancer is among the leading cause of cancer death in women. Despite extensive efforts to identify novel prognostic and predictive clinical biomarkers, a very small number of markers have been reported as risk stratification biomarker (e.g., BRCA1/2 and HER2). The substitution of arginine with lysine in codon 497 of HER1 497 has been suggested as a potential marker in breast cancer. The aim of current study was to explore the association between HER1 497 gene polymorphisms with pathological and clinical information of breast cancer patients.

Materials and Methods: 110 breast cancer patients were recruited followed by genomic DNA extraction and genotyping using RFLP_PCR and sequencing.

Results: Our data showed that 9.43% of cases had AA genotype, while these frequencies in AC and CC genotypes were 77.35 and 13.20%. Moreover, we found that 78.4% of breast cancer patients with M0 had AA+AC genotypes, while 21.6% of CC cases had M0 status. Also, 22.7% of these cases with CC genotype had N0/1. Interestingly we observed that most of the patients with CC genotype had lower HER2 expression.

Conclusions: Our finding showed the potential association of CC genotype of HER1 497 gene polymorphism with better prognosis of patients with breast cancer. Further studies are warranted to explore the prognostic value of this marker in a larger and multi center setting in breast cancer.