

5th World Congress on **Cancer Therapy**

September 28-30, 2015 Atlanta, USA

Association between GSTP1 genotypes and hormone receptors phenotype in invasive ductal carcinomas of breast

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Eighty six cases of invasive ductal breast carcinomas were utilized to investigate GSTP1 polymorphism and susceptibility to certain immunohistochemistry (IHC) subtypes of breast cancer with respect to ER, PR and HER2 expressions which were assessed using IHC stain. The frequency of wild allele homozygote, heterozygote and variant allele homozygote genotypes were 46.51%, 52.33% and 1.16% respectively; Whereas, 54.29% of the control subjects were GSTP1 wild type allele homozygous, 40% were heterozygous and 5.71% mutant allele homozygous. There was dramatic inverted relation between positive IHC ER stain and increased grade of tumors in general (100%, 88.64%, 40.41) and especially among tumors with heterozygote genotype of GSTP1 (70%, 35.36%, 22.72). There was increase in positive IHC HER2 stain consistent with higher grades in general (20%, 29.55%, 50%), especially among tumors with GSTP1 wild allele homozygote genotype (5%, 9.1%, 31.82%). A remarkable reversed relation was also observed between the fraction of IHC hormone receptor phenotype ER+/PR+/ HER2- and increased grade of tumors (60%, 45.45%, and 27.27%) especially among tumor with GSTP1 heterozygote genotype, and alike link was noted regarding ER+/PR-/ HER2- and tumor grades. Whereas, there was increase in frequency of ER-/PR-/ HER2- (0%, 6.8%, and 18.18%) and ER-/PR-/ HER2+ (0%, 4.54%, and 40.91%) consistent with the higher grades of tumors in general and especially GSTP1 heterozygote genotype tumors. conclusion, there is no correlation between GSTP1 polymorphism and increased risk of breast cancer i.e. the mutant allele is randomly distributed in cancer and control cases. However, there is a link between GSTP1 genotypes and hormone receptor expression status and certain phenotypes of breast cancer, which may have clinical importance.

Biography

Marwan A. Bakarman has completed his MBBS at the age of 26 years from King Abdulaziz University and postdoctoral studies from King Faisal University School of Medicine. He is the Chairman of Family & Community medicine dep., Rabigh College of Medicine. He has published more than 10 papers in reputed journals and has been serving as an editorial board member of reputed journals.

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