



Predictive potential role of glutathione *S*-transferase polymorphisms in the prognosis of breast cancer

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ABSTRACT. The current study aimed at evaluating the association between GSTM1 null/present, GSTT1 null/present, and GSTP1 Ile105Val polymorphisms and clinical response to chemotherapy and treatment outcome of breast cancers patients. Genotyping of GSTP1 rs1695, GSTT1 deletion, and GSTM1 deletion was performed by Polymerase Chain Reaction Restriction Fragment Length Polymorphism (PCR-RFLP) assay. We found that patients with GG genotype of GSTP1 Ile105Val and null genotype of GSTM1 were more likely to have a poorer response to chemotherapy than homozygotes of the most frequent genotype; the ORs(95%CI) were 0.37(0.18-0.74) and 0.59(0.36-0.97), respectively. By the Cox proportional hazards model, patients with the GG genotype of GSTP1 Ile105Val and null genotype of GSTM1 were found to be correlated with shorter overall survival of breast cancer; the adjusted HR (95%CI) were 2.51(1.17-5.32) and 2.00(1.15-3.48), respectively. Thus, our findings provided statistical evidence that the variants of GSTP1 and GSTM1 polymorphisms could

influence the response to chemotherapy and overall survival in breast cancer patients treated with chemotherapy.

Key words: Glutathione *S*-transferases; Polymorphism; Breast cancer