Role of *GSTM1*, *GSTT1*, and *GSTP1* Ile105Val gene polymorphisms in the response to chemotherapy and overall survival of advanced non-small cell lung cancer

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Received September 17, 2015
Accepted June 7, 2016
Published September 23, 2016
DOI http://dx.doi.org/10.4238/gmr.15037668

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**ABSTRACT.** We evaluated the association between *GSTM1*, *GSTT1*, and *GSTP1* Ile105Val gene polymorphisms and treatment outcomes of advanced non-small cell lung carcinoma. Between January 2010 and December 2012, a total of 244 patients with non-small cell lung carcinoma were recruited from Yiwu Central Hospital. The *GSTM1*, *GSTT1*, and *GSTP1* Ile105Val gene polymorphisms were analyzed by polymerase chain reaction-restriction fragment length polymorphism and the results were statistically analyzed. Conditional regression analysis, showed that individuals carrying the null *GSTM1* were associated with an increased risk of response to chemotherapy when...
compared to the present \textit{GSTM1} (odds ratio = 1.88, 95% confidence interval (CI) = 1.01-3.47). Moreover, the GG genotype of \textit{GSTP1} Ile105Val was associated with a better response to chemotherapy compared to the AA genotype (odds ratio = 2.77, 95%CI = 1.14-6.64). The null \textit{GSTM1} genotype was associated with a lower risk of death from all causes when compared with the present \textit{GSTM1} genotype (hazard ratio = 2.16, 95%CI = 1.10-4.38). Moreover, the GG genotype of \textit{GSTP1} Ile105Val was correlated with a reduced risk of death from all causes compared with the AA genotype (hazard ratio = 2.94, 95%CI = 1.11-8.68). In conclusion, we found that the null \textit{GSTM1} and the GG genotype of \textit{GSTP1} Ile105Val were correlated with a good response to chemotherapy and improved overall survival of advanced non-small cell lung carcinoma patients.

\textbf{Key words:} Advanced non-small cell lung carcinoma; Polymorphism; \textit{GSTM1}, \textit{GSTP1}, and \textit{GSTT1} Ile105Val