



# Glutathione S-transferase pi polymorphism contributes to the treatment outcomes of advanced non-small cell lung cancer patients in a Chinese population

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**ABSTRACT.** We analyzed the association between polymorphisms in three glutathione S-transferase genes (*GSTP1*, *GSTM1*, and *GSTT1*) and the treatment outcome for advanced non-small cell lung cancer (NSCLC). We recruited 284 NSCLC patients at advanced stage from Department of Radiotherapy in Peace Hospital Attached to Changzhi Medical College between May 2009 and May 2011, who had received cisplatin-based chemotherapy. The *GSTP1*, *GSTM1*, and *GSTT1* genotyping for was determined using DNA pyrosequencing on an ABI Prism 3100 DNA analyzer. In the Cox proportional hazards model, the Ile/Val and Val/Val genotypes of *GSTP1* were associated with lower risk of disease progression compared with the Ile/Ile genotype, and the HRs (95% CIs) were 0.37 (0.18-0.74) and 0.15 (0.06-0.35), respectively. The Ile/Val and Val/Val genotypes

significantly decreased risk of death from all causes in patients with NSCLC, and the HRs (95%CI) were 0.52 (0.29-0.92) and 0.37 (0.17-0.79), respectively. No significant association was observed between *GSTM1* and *GSTT1* polymorphisms and progression-free survival and overall survival in the NSCLC patients. In summary, we suggest that *GSTP1* polymorphisms might influence the treatment outcome of advanced NSCLC patients, and our results could help improve individualized therapy.

**Key words:** *GSTP1*; *GSTM1*; *GSTT1*; Polymorphism; NSCLC