



***ERCC1* mRNA expression is associated with the clinical outcome of non-small cell lung cancer treated with platinum-based chemotherapy**

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ABSTRACT. We conducted a prospective study to analyze the expression of the excision repair cross-complementing group 1 (*ERCC1*) and ribonucleotide reductase subunit M1 (*RRM1*) genes in 297 Chinese patients with advanced non-small cell lung cancer (NSCLC). The goal of this study was to evaluate these genes as potential biomarkers for prediction of tumor response and clinical outcome. Patients with unresectable, locally advanced or metastatic NSCLC were enrolled between September 2007 and September 2009, and they were followed up until September 2012. A fluorescence-based real-time detection method was used to quantify relative levels of *ERCC1* and *RRM1* cDNA. Relative amounts of *ERCC1* and *RRM1* cDNA were calculated by comparing to actin. By

the end of follow-up, 132 patients had died and 165 patients experienced progression. The median overall survival time was 18.7 months (range, 1-60 months). The median levels of *ERCCI* and *RRMI* were 2.46×10^{-2} and 0.97×10^{-2} , respectively. Patients with low *ERCCI* expression had a significantly higher rate of complete response to chemotherapy, with an OR (95%CI) of 1.56 (1.03-2.47). Moreover, individuals with low levels of *ERCCI* had longer overall survival than patients with high expression, with an adjusted hazard ratio (95%CI) of 0.57 (0.35-0.93). In summary, low *ERCCI* mRNA expression was associated with better response to chemotherapy and correlated with longer survival in advanced NSCLC patients treated with platinum-based chemotherapy.

Key words: Excision repair cross-complementing group 1; mRNA; Non-small cell lung cancer; Survival; Response to chemotherapy; Ribonucleotide reductase subunit M1