ERCC-1 Protein Expression and Its Correlation with Survival Rate in Patients with Advanced Non-small Cell Lung Cancer Receiving Cisplatin/Carboplatin-based Chemotherapy: a Retrospective study

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The Thai Cancer, 2016, 31.53.013

**Background:** Overexpression of the ERCC-1 gene is previously reported to associate with platinum resistance in early and advanced NSCLC patients. This study is aimed to investigate the prevalence of ERCC-1 protein expression in advanced NSCLC Thai patients and analyzed the correlation between the ERCC-1 status and the overall survival after platinum-based chemotherapy.

**Method:** The retrospective study was conducted to evaluate ERCC-1 expression in 29 advanced NSCLC patients who had sufficient tumor tissues and treated with platinum-based chemotherapy as first-line treatment in Maharaj Nakorn Chiang Mai Hospital between 2006 and 2008. Immunohistochemistry was used to assess the expression of ERCC-1.

**Results:** Twenty-nine tumor tissues were analyzed. Sixteen (55.2%) were ERCC-1 positive. ERCC-1 positive was found in 70% of men and 22.2% of women, 63.6% of squamous cell carcinoma and 50% of adenocarcinoma. Patients having ERCC1-negative tumor and treated with platinum-based chemotherapy, had a significant longer survival when compared to patients with ERCC1-positive tumor (12.4 moths v 7.1 months; \( p = 0.0141 \)).

**Conclusion:** This study confirmed previous reports that ERCC1 expression is predictive for outcome in patients treated with platinum-based chemotherapy. Patients with ERCC1-negative tumors had an increased survival compared to patients with ERCC1-positive tumors. Prevalence of ERCC-1 positive tumor was higher in men and squamous cell carcinoma. Due to limitation of retrospective study and small number of patients, the phase III randomized control trial was warranted before applying ERCC-1 expression to clinical practice.