NSCLC, metastatic

A LABORATORY PROGNOSTIC INDEX MODEL FOR PATIENTS WITH ADVANCED NON-SMALL CELL LUNG CANCER

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Aim: We aimed to establish a laboratory prognostic index (LPI) in patients with advanced non-small cell lung cancer (NSCLC) based on clinical and histological characteristics, hematologic and biochemical basal parameters and their effects on survival. The predictive value of LPI on NSCLC survival was evaluated.

Methods: The study retrospectively reviewed 462 patients with advanced NSCLC diagnosed between the years of 2000-2009 in a single institution. Twenty one clinical, hematological and biochemical factors were evaluated with univariate and multivariate analysis. A laboratory prognostic index (LPI) was developed based on WBC, LDH, ALB, CA and ALP levels with univariate and multivariate stepwise Cox regression analyses. LPI was classified into 3 groups as LPI 0: normal laboratory findings, LPI 1: one abnormal laboratory finding, and LPI 2: at least 2 abnormal laboratory findings.

Results: Among 462 patients, 87.7% of them were male and the rate of non-squamous carcinoma was 58.2%. The median follow up period was 44 months, median OS and median PFS was 11 months (9.85-12.15) and 6 months (5.42-6.58), respectively. In multivariate analyses revealed that ECOG PS ≥ 2 (p = 0.014), high LDH level (p = 0.047), serum albumin <3 g/dL (p = 0.037), serum calcium >10.5 g/dL (p = 0.011), number of metastasis > 2 (p < 0.001), presence of liver metastasis (p = 0.016), presence of malignant pleural effusion (p = 0.001), chemotherapy cycles >3 (p < 0.001) were independent prognostic factors on OS in advanced NSCLC patients. 1-year overall survival rates according to LPI 0, LPI 1 and LPI 2 were 54%, 34% and 17% (p < 0.001) and 6-month PFS rates were 44%, 27% and 15% (p < 0.001) respectively. LPI is a significant predictor for OS (HR: 1.41; 1.05-1.88, p < 0.001) and PFS (HR: 1.48; 1.14-1.93, P < 0.001). A multivariate Cox's regression analyses identified ECOG PS (< 0.001), number of metastasis (< 0.001) and number of chemotherapy cycles (< 0.001) as independent prognostic factors for NSCLC according to LPI.

Conclusions: LPI is an independent prognostic index for advanced NSCLC and might be helpful to predict the survival when combined with clinical parameters. LPI is an inexpensive an easily accessible indicator which might be used for treatment decisions and patient follow-up.

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