LUNG CANCER—NON-SMALL CELL METASTATIC

Utility of the Lung Immune Prognostic Index (LIPI) in prognostication and disease control prediction in advanced NSCLC patients treated with nivolumab.

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Abstract

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Background: The lung immune prognostic index (LIPI) has been proposed as a new biomarker to select advanced non-small cell lung cancer (NSCLC) patients for anti-programmed cell death-1 or programmed death ligand 1 therapy. In this study, we investigate the prognostic and predictive utility of the LIPI in a multicentric nivolumab monotherapy-based cohort. **Methods:** 153 patients with available baseline LIPI were included. Survival estimates were calculated by the Kaplan-Meier method, and groups were compared with the log-rank test. The impact of the baseline LIPI on survival (PFS and OS), and DCR and ORR was assessed by Cox and logistic regression models respectively, adjusted for age, sex, ECOG-PS, smoking status, histology, TNM stage at diagnosis, presence of brain metastases and number of prior regimens. All p values were 2-sided, and those less than 0.05 were considered statistically significant. **Results:** 50.3% (n = 77) of the patients had a good (0 factors) LIPI, while 41.2% (n = 63) and 8.5% (n = 13) had intermediate (1 factor) and poor (2 factors) LIPI respectively. No significant differences were observed between the LIPI groups according to clinicopathologic characteristics. A high LIPI was significantly associated with poor OS in univariate (HR = 3.12, 95% CI 2.12 – 4.60; p < 0.0001) and multivariate (HR = 3.10, 95% CI 2.09 – 4.58; p < 0.0001) analyses. A high LIPI was associated with poor PFS (HR = 1.49, 95% CI 1.07 – 2.07; p = 0.02), but this correlation did not reach a statistical significance in multivariate analysis (HR = 1.37, 95% CI 0.98 – 1.92; p = 0.07). A higher LIPI was associated with a lower disease control rate in univariate (OR = 0.50, 95% CI 0.29 – 0.85; p = 0.01) and multivariate (OR = 0.55, 95% CI 0.31 – 0.98; p = 0.04) analyses. **Conclusions:** This study confirms the utility of the LIPI in prognostication and disease control prediction in advanced NSCLC patients treated with nivolumab in the second line of therapy or beyond.