Prognostic Value of Neutrophil-to- Lymphocyte Ratio in Advanced Non-Small- Cell Lung Cancer

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\textbf{Background:} Non-Small Cell Lung Cancer (NSCLC) is the most common lung cancer diagnosis. Determining predictive factors for survival is essential for management of patients with NSCLC. Neutrophil to Lymphocyte Ratio (NLR) is a simple and non-expensive marker used to predict survival mostly in developed countries. However, data on the utility of NLR as a predictor for survival is limited in Thailand.

\textbf{Objective:} To evaluate the correlation between NLR and progression free survival (PFS) and overall survival (OS) and to determine factors associated with PFS and OS among advanced NSCLC patients.

\textbf{Methods:} A retrospective chart review was conducted among advanced NSCLC patients receiving first-line chemotherapy in Thammasat University Hospital during the period from June 2011 to August 2017.

\textbf{Results:} A total of 66 advanced NSCLC patients were included; 90.9\% had adenocarcinoma and the median PFS and OS were 188.5 days and 345.5 days, respectively. The median NLR at baseline, post 1, 2 and 3 chemotherapy cycles were 3.97, 2.52, 2.13, and 2.20, respectively. There was a trend towards a significant inverse correlation between baseline NLR and OS ($r = - 0.22; P = 0.07$), while baseline NLR was not significantly correlated with PFS. Other NLRs at post 1, 2 and 3 chemotherapy cycles were not correlated with OS and PFS. In multivariable linear regression analysis, the level of albumin (Alb) on post chemotherapy cycle 2 was an independent predictor of PFS time ($P=0.036$), while the baseline level of Alb was independent predictors of OS time ($P=0.020$).

\textbf{Conclusion:} Baseline and post chemotherapy of albumin level may be used as a predictor for survival in patients with advanced NSCLC. This finding may suggest the effect of nutritional status on survival. Further studies with larger sample size are required to assess the correlation between NLR and survival among NSCLC patients.

\textbf{Keywords:} Neutrophil-to- Lymphocyte Ratio, Advanced Non-Small- Cell Lung Cancer