Purpose: We aimed to establish an inflammatory prognostic index (IPI) in early and advanced non-small cell lung cancer (NSCLC) patients based on hematologic and biochemical parameters and to analyze its predictive value for NSCLC survival. Materials and Methods: A retrospective review of 685 patients with early and advanced NSCLC diagnosed between 2009 and 2014 was conducted with collection of clinical, and laboratory data. The IPI was calculated as C-reactive protein × NLR (neutrophil/lymphocyte ratio)/serum albumin. Univariate and multivariate analyses were performed to assess the prognostic value of relevant factors. Results: The optimal cut-off value of IPI for overall survival (OS) stratification was determined to be 15. Totals of 334 (48.8%) and 351 (51.2%) patients were assigned to high and low IPI groups, respectively. Compared with low IPI, high IPI was associated with older age, greater tumor size, high lymph node involvement, distant metastases, advanced stage and poor performance status. Median OS was worse in the high IPI group (low vs high, 8.0 vs 34.0 months; HR, 3.5; p<0.001). Progression free survival values of the patients who had high vs low IPI were determined 6 months (95% CI:5.3-6.6) and 14 months (95% CI:12.1-15.8), respectively (HR; 2.4, P<0.001). On multivariate analysis, stage, performance status, lactate dehydrogenase and IPI were independent prognostic factors for OS. Subgroup analysis showed IPI was generally a significant prognostic factor in all clinical variables. Conclusion: The described IPI may be an inexpensive, easily accessible and independent prognostic index for NSCLC patients, useful for clinical practice.