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The Blood Neutrophil/Lymphocyte Ratio Correlates with Clinical Status in Idiopathic Pulmonary Fibrosis Patients: A Case Control Study

Elif Yelda Niksarlıoğlu, Güngör Camsarı

Clinic of Chest Diseases, University of Health Sciences, Yedikule Chest Diseases and Thoracic Surgery Training and Research Hospital, İstanbul, Turkey

Objectives: In recent studies showed that neutrophil/lymphocyte ratio (NLR) is marker of inflammation in some pulmonary diseases such as sarcoidosis, systemic sclerosis with interstitial lung disease, chronic obstructive pulmonary disease. The aim of the present study to investigate possible relationship between NLR and IPF severity.

Methods: This case-control study was carried out on patients who had been diagnosed with IPF (n=44, female/male 9/35) and healthy control (n=17, female/male 5/14). The demographic parameters, pulmonary function tests, carbon monoxide diffusion test, 6-minutes walk test and IPF stage were recorded.

Results: The mean age of the patients was 67.4 ± 6.2 (range 53-78) years with 35 (79.5%) men. The GAP point was 4.3 ± 1.3 (range 1-7) and the most common IPF stage was 2 (26 59.1%). Thirty-seven patients were used anti-fibrotic drugs (43.2% nintedanib and 40.9% pirfenidone). The mean NLR of the IPF was 2.39 ± 1.1 , and 1.78 ± 0.7 in the control group ($p=0.029$). NLR was strongly correlated with age ($r 0.349$, $p=0.02$), GAP score ($r 0.336$, $p=0.03$), 6MWT ($r 0.325$, $p=0.036$) and FVC ($r -0.316$, $p=0.039$). But, there was no correlation between NLR and carbon monoxide diffusion test, FEV_1 and FEV_1/FVC results.

Conclusion: Our findings suggest that NLR level might be used as a prognostic marker in IPF patients. Thus, the NLR level may be a simple, cost effective marker for evaluating the disease severity in IPF patients.

Keywords: DLCO, GAP score, idiopathic pulmonary fibrosis, neutrophil/lymphocyte ratio, severity, 6MWT