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Can Simple Blood Tests be Used in the Differential Diagnosis of Sarcoidosis and Tuberculosis?

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Objectives: Both tuberculosis and sarcoidosis are granulomatous diseases and the differential diagnosis of sarcoidosis in endemic areas for tuberculosis can become a great challenge. Since the therapeutic approach for tuberculosis and sarcoidosis is radically different, patients may undergo surgery for definitive diagnosis. In this paper we sought for a simple non-invasive investigation that can be easily and reliably measured from a blood sample in order to avoid unnecessary mediastinoscopies.

Methods: A retrospective cohort study was performed using a database of a consecutive series of patients who underwent standart cervical mediastinoscopy in our thoracic surgery department. Between January 2014 and January 2019, 286 patients underwent mediastinoscopy. Ninety-three patients without lung cancer who underwent mediastinoscopy for the pathological evaluation of mediastinum during the study period included in the study. All patients had the complete blood count before surgery. There were 38 female (41%) and 55 male (59%) patients. Mean age was 59.2 years (range, 32 to 83 years). Mean number of biopsies was 3.4 (range, 1 to 15). Of these ninety-two patients sixteen were diagnosed as tuberculosis (TBC group), twenty-one were diagnosed as sarcoidosis (SRC group) and twenty-four were reactive (Control group).

Results: Leukocyte and neutrophil counts, NLR, were significantly higher in the sarcoidosis group compared with tuberculosis ($p<0.001$). The most appropriate cut-off value of NLR to distinguish tuberculosis from sarcoidosis was determined as 1.45. For this cut-off value of NLR there was 96% sensitivity, 59% specificity, 50% positive predictive value (PPV), 61% negative predictive value (NPV), and area under the curve (AUC) was 0.504. For differentiation of sarcoidosis from tuberculosis, accuracy of the NLR test according to this cut-off value was found as 91%.

Conclusion: We can conclude that these results may indicate a clinically useful marker that can be easily and reliably measured from a blood sample in the differential diagnosis of sarcoidosis in endemic areas for tuberculosis. Future studies are necessary to externally cross-validate our findings in a larger cohort of tuberculosis and sarcoidosis patients.

Keywords: Diagnosis, differentiation, sarcoidosis, tuberculosis