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## Is the Neutrophil/Lymphocyte Ratio a Marker of Mortality in ARDS Patients Followed in Pulmonary Intensive Care Unit?

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**Objectives:** Acute Respiratory Distress Syndrome (ARDS) is characterized by non-cardiogenic pulmonary edema which develops after uncontrolled inflammatory response and it is the most important situation causing to mortality in intensive care units. Limited number studies showed that Neutrophil/Lymphocyte Ratio (NLR) is a prognostic marker in ARDS. Our study aims to define the parameters which influence on the hospital mortality and to determine the effect of NLR on prognosis in patients with ARDS.

**Methods:** The study population was consisted of patients with ARDS which were followed in our third level intensive care unit (from January 2015 to December 2018). ARDS definition was confirmed by Berlin Criteria. Demographic, clinical characteristics, laboratory results and mortality findings of patients were recorded retrospectively and prospectively.

**Results:** The study population consisted of 55 patients with ARDS [61.8% male, median age 59 (48-72), mean APACHE II  $21.8 \pm 8.3$ , median SOFA 6 (3-10)]. Most of the patients had ARDS due to community acquired pneumonia and immunosuppressive pneumonia. 67.2% of the patients had ARDS at the admission in intensive care unit, others developed ARDS during follow up. We classified ARDS as 12.7% mild, 56.4% moderate and 30.9% severe ARDS. While invasive mechanical ventilation was applied in 58.2% of the patients, 41.8% of them treated with noninvasive mechanical ventilation during follow up. NLR was 10.4 (6.3-18.7) at the time of diagnosis. In our study, mortality ratio was detected as 76.4%. There was no significant correlation between NLR and mortality (10.6 versus 9.6,  $p=0.70$ ). In subgroup analyses containing of comorbidities and severity of ARDS, NLR was similar in the dead and surviving groups. Presence of hypertension, the development of ARDS during follow-up and the use of invasive mechanical ventilation were found to be significant parameters effecting on mortality ( $p=0.045$ ,  $p=0.041$ ,  $p=0.008$ , respectively). In dead group, the APACHE II and SOFA scores were higher than other group ( $p=0.039$  and  $p=0.043$ , respectively). Also; the mortality rate was higher in the patients having APACHE II  $>18$  and SOFA  $>3$  at the admission time in intensive care unit than others according to calculated cut-off values ( $p=0.006$ , sensitivity 76%, specificity 69% and  $p=0.002$ , sensitivity 86% and specificity 62%, respectively).

**Conclusion:** We found that NLR at the time of diagnosis did not effect on mortality in patients with ARDS followed up in pulmonary intensive care unit. At the time of admission, disease severity and sepsis related organ failure scores were significantly associated with mortality.

**Keywords:** ARDS, intensive care unit, neutrophil/lymphocyte ratio