

# Evaluation of Neutrophil to Lymphocyte ratio (NLR) and its utility as a prognostic marker in COVID-19 patients

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## Abstract

Introduction COVID-19 has presented an unprecedented situation to the medical world. With the high infectivity rate, the search for ideal prognostic tests is on. Neutrophil lymphocyte ratio (NLR) has been used as a prognostic marker in several infectious, inflammatory and malignant conditions. We aim to assess the utility of NLR as a prognostic marker in COVID-19. Materials and methods: 142 confirmed COVID-19 patients were included in the study. A detailed clinical Performa was filled. Complete blood count and coagulation parameters were done in each patient. Based on the clinical criteria, the patients were classified as asymptomatic (100) and symptomatic (42). The symptomatic patients were subjected to CT chest examination and were assigned a CT severity index. Using clinical presentation, organ dysfunction, oxygen requirement and CT severity index the patients were classified as mild and severe COVID-19 groups. NLR, coagulation parameters and CT severity index were compared. Results: 46.4 % of males and 17.8 % of females had neutrophilia. 37(38.1 %) males had 14 (31.1 %) females had lymphopenia. NLR was between 1-3.5 in 83 (58.45%) cases and 59 cases (41.5%) had NLR >3.5.Of these 59 cases, 50 had a deranged FDP/D-dimer levels. The Receiver Operating Characteristics (ROC) curve analysis was carried out to indicate the sensivity and specificity of NLR and its respective optimal cut-off value for predicting severity in COVID. NLR >3.5 helped in predicting severity of COVID with a sensitivity of 60% and specificity of 70%. Conclusion: High NLR (>3.5) indicates a severe form of disease. 'What is already known about this topic? Covid 19 is an emerging pandemic and researchers are trying to find the various diagnostic and prognostic parameters. What does this article add? This article tries to assess a new prognostic marker for covid 19

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Figure No. 1– Distribution of cases according to Neutrophil to lymphocyte ratio (NLR)

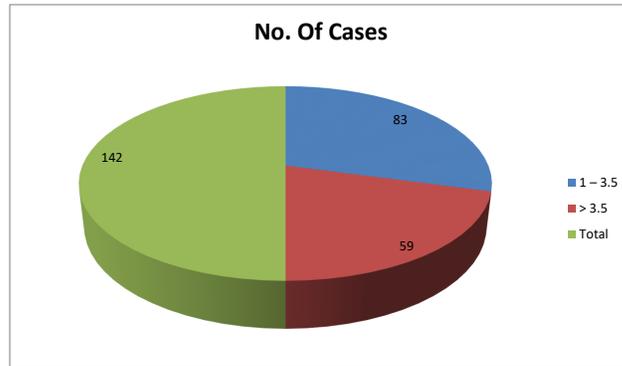
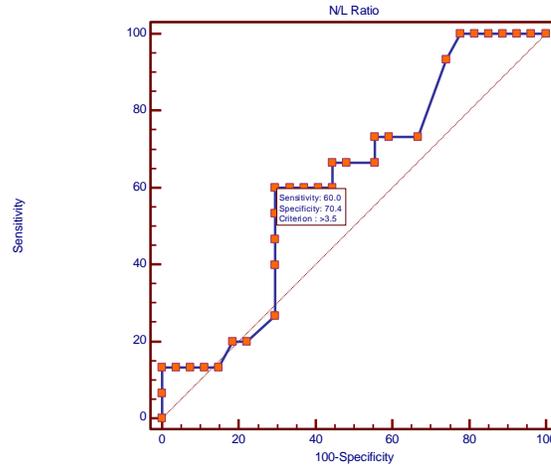


Figure 2: The Receiver Operating Characteristics (ROC) curve analysis to indicate the sensitivity and specificity of NLR



Criterion	Sensitivity	95% CI	Specificity	95% CI	+LR	-LR
>3.5 *	60.00	32.3 - 83.7	70.37	49.8 - 86.2	2.02	0.57

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