

Introduction

The national Institute of fitness of China in 2019 informed the world health organization (WHO) to several cases of pneumonia in Wuhan, China. Several cases have been infected with Coronavirus, and the virus was named by WHO as Coronavirus disease 2019 (Covid-19). At the middle of January 2020, around seven thousand cases and twelve thousand suspected cases were reported in China, and 80 confirmed instances had been observed in about twenty different international locations. WHO declared that SARS-CoV-2 is an epidemic condition and a public outbreak.

Different laboratory investigations have been proposed for the early detection, and identification of patients who were affected with SARS-CoV-2 virus, including decrease lymphocytic count, prolonged prothrombin time. Different cases have shown to have an increase of inflammatory markers, including: C-reactive protein, creatinine kinase, and prolactin levels.

Results

The current study included one hundred patients who were admitted to the Emergency Department at the Main University Hospital of Alexandria University. Out of 100 patients, 55 patients (55%) were males and 45 patients (45%) were females, 42 patients (42%) were between 18 – 65 years old, and 58 patients (58%) were above 65 years old, the overall median age of the patients was 63 years old, table (1).

ROC graph showing the effectiveness of neutrophil lymphocytic ratio (NLR) to detect the severity of covid-19 infection. It should be noted that the NLR cut-off value selected by ROC curve analysis in our study was (5.38), in which the sensitivity and specificity were the closest to the value of the area under the ROC curve and the absolute value of the difference between the sensitivity and specificity values was minimum. Area under the curve value of NLR was 0.81 and the sensitivity was found to be 93.6%, with a specificity of 86.82% in detecting the severity of covid-19 infection, (figure 1).

Aim of the Work

The primary aim of this study was to evaluate Predictive values of neutrophil – to – lymphocyte ratio on disease severity and mortality in COVID-19 PCR positive patients. The secondary aim of this study is looking for various parameters related to worsening outcomes.

Patients and Methods

This retrospective study was done in Alexandria university hospitals on 100 patients presented to the emergency department after approval of the medical ethics committee of the Alexandria faculty of medicine and a written formal consent was signed out from patients or kin relatives. Patients were categorized according to WHO R&D Expert Group.

Table: Distribution of the studied cases according to demographic data (n=100)

Demographic Data	No.	%
Gender		
▪ Male	55	55.0
▪ Female	45	45.0
Total	100	100.0
Age (years)		
▪ 18 – 65	42	42.0
▪ >65	58	58.0
Min. – Max	23 – 81	
Mean ±SD	52 ± 29	
Median	63	

(Min.) minimum, (Max.) maximum, (SD) standard deviation

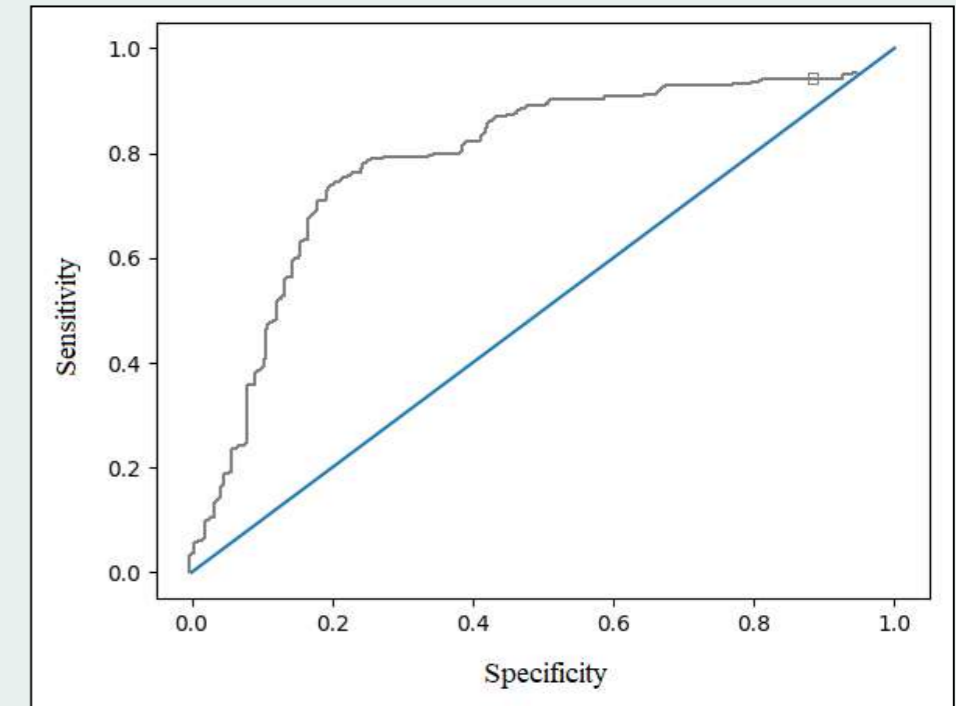


Figure: Receiver operating characteristic curve showing the effectiveness of neutrophil lymphocytic ratio (NLR) to detect the severity of covid-19 infection.

Conclusion

Neutrophil lymphocytic ration was found to be strongly associated with Covid-19 infection severity and mortality, and could be used to guide the clinical management for the prediction of the disease severity.