

Evaluation of predictive power of systemic inflammation indices on the outcome of diabetic patients with COVID-19 hospitalized in Intensive Care Unit

Abstract

Background: In December 2019, an unknown viral agent began to spread in Wuhan, China, which is known to cause severe acute respiratory syndrome, and it did not take long for it to spread widely throughout the world. This virus was announced by WHO as the cause of the disease of Covid-19. Chronic diseases, including diabetes, have contributed to the high mortality of Covid-19 patients.

Aim: The present study was conducted with the aim of Evaluation of predictive power of systemic inflammation indices on the outcome of diabetic patients with COVID-19 hospitalized in Intensive Care Unit.

Materials and Methods: In this cross-sectional and analytical study, 367 diabetic patients with Covid-19 hospitalized in the special care department of Imam Khomeini Hospital in Ardabil during the period from May to July 1400 were evaluated. Required information including demographic characteristics, previous disease history, hospital outcome and necessary laboratory findings. It was collected by examining the files of the patients in the hospital archive. The relevant information was evaluated by inserting it into SPSS software version 17 based on the objectives of the study and the ROC curve.

Results: The average age of the patients was 63.09 years and 53.1% of them were men. Mortality of patients was 63.2%. Three inflammatory parameters NLR, PLR and SII significantly predicted patient outcome (AUC 0.600, 0.566 and 0.588 respectively with $P>0.05$), but two parameters MLR and SIRI significantly predicted patient outcome. did not predict (with $P=0.34$ and $P=0.096$, respectively).

Conclusion: The simultaneous use of all available parameters such as NLR or PLR ratio as well as SII as a relatively new index will increase the prediction accuracy and help in the better management of diabetic patients with covid-19 and making accurate decisions in predicting the outcome of the disease.

Keywords: Blood factors, Systemic Inflammatory Factors, Diabetes, Covid-19, Outcome