Fayoum University

Faculty of Medicine

Anesthesia Department

جامعة الفيوم

كلية الطب

قسم التخدير

The diagnostic and prognostic role of neutrophil to lymphocyte ratio in COVID-19: A systematic review and meta-analysis

Background:
The world urgently requires surrogate markers to diagnose COVID-19 and predict its progression. The severity is not easily predicted via currently used biomarkers. Critical COVID-19 patients need to be screened for hyperinflammation to improve mortality, but expensive cytokine measurement is not routinely conducted in most laboratories. The neutrophil-to-lymphocyte ratio (NLR) is a novel biomarker in patients with various diseases. We evaluated the diagnostic and prognostic accuracy of the NLR in COVID-19 patients.

Methods:
We searched for relevant articles in seven databases. The quantitative analysis was conducted if at least two studies were evaluating the NLR role in COVID-19.

Results:
We included 8,120 individuals, including 7,482 COVID-19 patients, from 32 articles. Patients with COVID-19 had significantly higher levels of NLR compared to negative individuals. Advanced COVID-19 stages had significantly higher levels of NLR than earlier stages.

Expert Opinion:
We found significantly higher levels of NLR in advanced stages compared to earlier stages of COVID-19 with good accuracy to diagnose and predict the disease outcome, especially mortality prediction. A close evaluation of critical SARS-CoV-2 patients and efficient early management are essential measures to decrease mortality. NLR could help in assessing the resource allocation in severe COVID-19 patients even in restricted settings.

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نوع البحث:

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المشرفين على البحث حسب الترتيب:

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- مكان وتاريخ النشر: