



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكرو فيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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NEUTROPHIL-TO-LYMPHOCYTE COUNT RATIO IN PREDICTING PROGNOSIS OF SEPTIC SHOCK PATIENTS

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List of Abbreviations

ACCP	American college of chest physicians
ADM	Adrenomedullin
Ang	Angiopoietin
ATPs	Adenosine triphosphates
BP	Blood pressure
CBC	Complete blood count
CD14	Cluster of differentiation 14
CD64	Cluster of differentiation 64
ChT	Chitotriosidase
CI	Cardiac index
CO2	Carbon dioxide
CPB	Cardiopulmonary bypass
CRP	C-reactive protein
cvaCO2	Gap central venous to arterial carbon dioxide gap
DIC	Disseminated intravascular coagulopathy
HMGB1	High mobility group box 1
I/R	Ischemia reperfusion
ICU	Intensive care unit
IL-1	Interleukin 1
IL-10	Interleukin 10
IL-12	Interleukin 12
IL-1B	Interleukin 1B
IL-2	Interleukin 2
IL-27	Interleukin 27
IL-4	Interleukin 4
IL-6	Interleukin 6
IV	Intravenous

List of Abbreviations

kDa	Kilodalton
LBP	Lipopolysaccharide binding protein
LPS	Lipopolysaccharide
MIF	Migration inhibitory factor
MRSA	Methicillin- resistant staph aureus
MSSA	Methicillin-sensitive staph aureus
mvaCO₂	Mixed venous to arterial carbon dioxide gap
NLR	Neutrophil to lymphocyte count ratio
O₂	Oxygen
PCO₂	Partial pressure of carbon dioxide
PCT	Procalcitonin
PMNs	Polymorphoneuclear
PPV	Pulse pressure variability
proADM	Proadrenomedullin
SaO₂	Arterial oxygen saturation
SCCM	Society of critical care medicine
Scvo₂	Central venous oxygen saturation
SIRS	Systemin inflammatory response syndrome
SOFA	Sequential organ failure assessment
sTREM-1	Soluble triggering receptor expressed on myeloid cell 1
suPAR	Soluble urokinase plasminogen activator receptor
SVV	Stroke volume variability
TLR	Toll like receptors
TNF	Tumor necrosis factor
TNF-α	Tumor necrosis factor alpha
uPAR	Urokinase plasminogen activator receptor

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Abstract

Background: Septic shock is one of the most common causes of admission to the intensive care unit in the world and one of the most common causes of death among intensive care patients. Since the definition of sepsis and septic shock and many studies have been designed to understand everything about sepsis regarding mechanism, pathophysiology, complications, diagnosis, management and all other aspects .

Objective: To find the association between neutrophil to lymphocyte count ratio and the mortality from septic shock patients. The work aims also to determine if this ratio can be used as a prognostic marker of septic shock patients and to compare this ratio with other sepsis markers as C-reactive protein (CRP) and procalcitonin .

Patients and Methods: This study was conducted prospectively in critical care unit in Ain Shams Hospital, a university-affiliated, tertiary referral center in Cairo, Egypt. Study subjects included 125 patients between January 2018 to January 2019. The ethics committee of our institution approved the study protocol, and written informed consent was obtained from each patient's family.

Results: In our study, the neutrophils count was significantly increased in survived patients compared with early and late mortality patients in day 1 while lymphocytes count was lower in survived patient than early and late mortality patients and the NLCR in our study was higher in survived patients than early and late mortality patients. In day 4, our results revealed significant increase in neutrophils count in patients of late mortality compared with its count in survived

patients, while lymphocytes didn't show any significant difference compared with its count in survived patients with significant increase in NLCR in patients of late mortality compared with those of survived patients in day 4. Both CRP and procalcitonin are increased in patients of early and late mortality groups compared with its value in survived patients in day 1 and 4 .

Conclusion: This study demonstrates a real relationship between the NLCR and the risk of death in septic shock patients. Septic shock patients at risk of early death presented a low NLCR at admission, although late death was associated with an increased NLCR during the first 5 days. Early and late death should be distinguished because they may involve different underlying mechanisms, and the NLCR might be considered as a discriminant indicator of early or late death. In addition, our findings provide more insight into biology. The circulating neutrophil and lymphocyte trends observed in this study offer an interesting mechanistic viewpoint. We observed that circulating lymphocytes and the NLCR behave in opposite ways in early- and late death patients, supporting the hypothesis that divergent mechanisms could be involved in these two groups .

Keywords: C-reactive protein, intensive care unit