ATUDER
Acil Tıp Uzmanları Derneği
1999

ACİL TIP UZMANLARI DERNEĞİ
EMERGENCY MEDICINE PHYSICIANS ASSOCIATION OF TURKEY

Mortaliteyi Tahmin Etmede SOFA Kriterleri Yeterlidir..?

Evet / Hayır

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TC.Uşak Üniversitesi Eğitim Araştırma Hastanesi

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Sequential Organ Failure Assessment (SOFA)

- The SOFA score was developed in 1996 using a consensus group of clinicians*
- Several principles were agreed on prior to the selection of variables to measure organ dysfunction.
- Each variable was required to be simple, objective, easily and routinely measured in an ICU setting, amenable to repetitive assessment, and independent of therapeutic interventions.
- Additionally, variables should be continuous measures.

*Vincent J, Moreno R, Takala J, Willatts S, de Medonca A, Bruining H, Reinhart CK, Suter PM, Thijs LG. The SOFA (Sepsis-related Organ Failure Assessment) score to describe organ dysfunction/failure. Intensive Care Med. 1996; 22(7):707–710. [PubMed: 8844239]

From: **The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)**

JAMA. 2016;315(8):801-810. doi:10.1001/jama.2016.0287

Table 1. Sequential [Sepsis-Related] Organ Failure Assessment Score[a]

	Score				
System	**0**	**1**	**2**	**3**	**4**
Respiration					
Pao_2/Fio_2, mm Hg (kPa)	≥400 (53.3)	<400 (53.3)	<300 (40)	<200 (26.7) with respiratory support	<100 (13.3) with respiratory support
Coagulation					
Platelets, $\times 10^3/\mu L$	≥150	<150	<100	<50	<20
Liver					
Bilirubin, mg/dL (μmol/L)	<1.2 (20)	1.2-1.9 (20-32)	2.0-5.9 (33-101)	6.0-11.9 (102-204)	>12.0 (204)
Cardiovascular	MAP ≥70 mm Hg	MAP <70 mm Hg	Dopamine <5 or dobutamine (any dose)[b]	Dopamine 5.1-15 or epinephrine ≤0.1 or norepinephrine ≤0.1[b]	Dopamine >15 or epinephrine >0.1 or norepinephrine >0.1[b]
Central nervous system					
Glasgow Coma Scale score[c]	15	13-14	10-12	6-9	<6
Renal					
Creatinine, mg/dL (μmol/L)	<1.2 (110)	1.2-1.9 (110-170)	2.0-3.4 (171-299)	3.5-4.9 (300-440)	>5.0 (440)
Urine output, mL/d				<500	<200

Abbreviations: Fio_2, fraction of inspired oxygen; MAP, mean arterial pressure; Pao_2, partial pressure of oxygen.

[a] Adapted from Vincent et al.[27]

[b] Catecholamine doses are given as μg/kg/min for at least 1 hour.

[c] Glasgow Coma Scale scores range from 3-15; higher score indicates better neurological function.

The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3) 2016

- The Sepsis-3 guidelines specifically use the Sequential Organ Failure Assessment (SOFA) score as a measure of disease severity and a mortality risk stratification tool.
- Sequential Organ Failure Assessment score evaluates 6 organ systems with points assigned from 0 (nodysfunction) to 4 (severe dysfunction), with 24 being the highest possible score.
- A SOFA score 2 reflects an overall mortality risk of approximately 10% in a general hospital population with suspected infection.

JAMA. 2016 Feb 23; 315(8): 801–810.doi: 10.1001/jama.2016.0287

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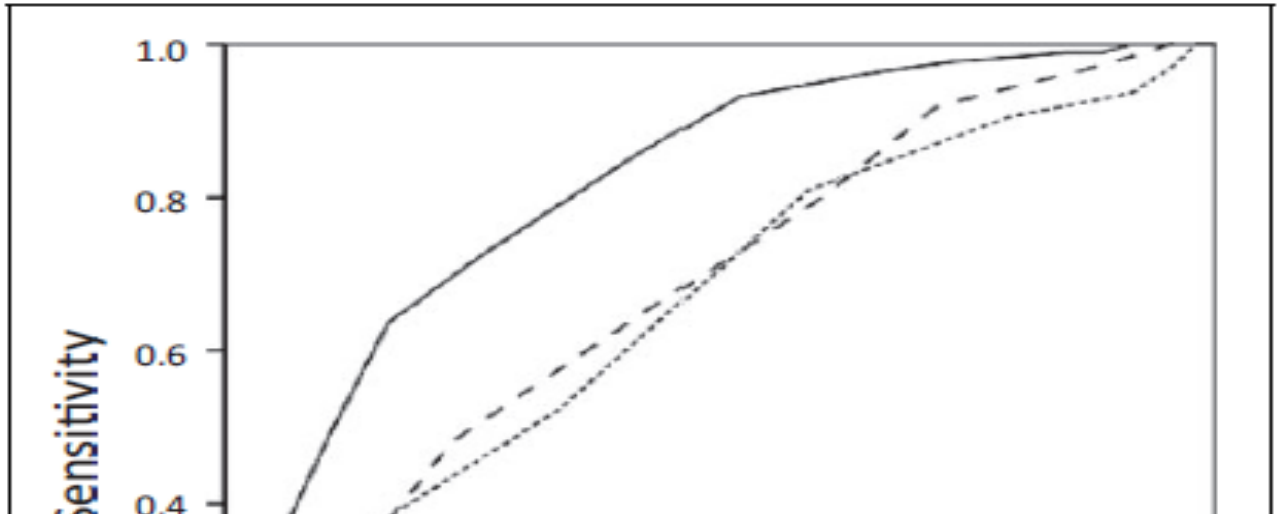

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Table 3. Accuracy of Δ mSOFA Score, Δ overt-DIC Score, and Δ JAAM DIC Score to Predict 28-day Mortality in Patients With Sepsis-Associated DIC and Treated With Antithrombin.[a]

	Δ SOFA Score (%)	Δ Overt-DIC Score (%)	Δ JAAM DIC Score (%)
Sensitivity	72.7	68.3 (NS)	70.7 (NS)
Specificity	83.4	66.0 ($P = .001$)	77.0 (NS)
PPV	62.1	45.3	54.1
NPV	89.1	83.5	87.3
Accuracy	80.5	66.7 ($P < .001$)	75.3 (NS)

ORIGINAL RESEARCH

American Heart Association | American Stroke Association

Predictive Value of the Sequential Organ Failure Assessment Score for Mortality in a Contemporary Cardiac Intensive Care Unit Population

Jacob C. Jentzer, MD; Courtney Bennett, DO; Brandon M. Wiley, MD; Dennis H. Murphree, PhD; Mark T. Keegan, MB, MRCPI; Ognjen Gajic, MD; R. Scott Wright, MD; Gregory W. Barsness, MD

- This was a historical cohort analysis using an institutional database of patients admitted to the CICU at the Mayo Clinic Hospital, St Mary's Campus, a tertiary-care hospital in Rochester, MN.
- This is the largest study examining the prognostic value of SOFA scores for short- and long-term mortality in a contemporary CICU population.

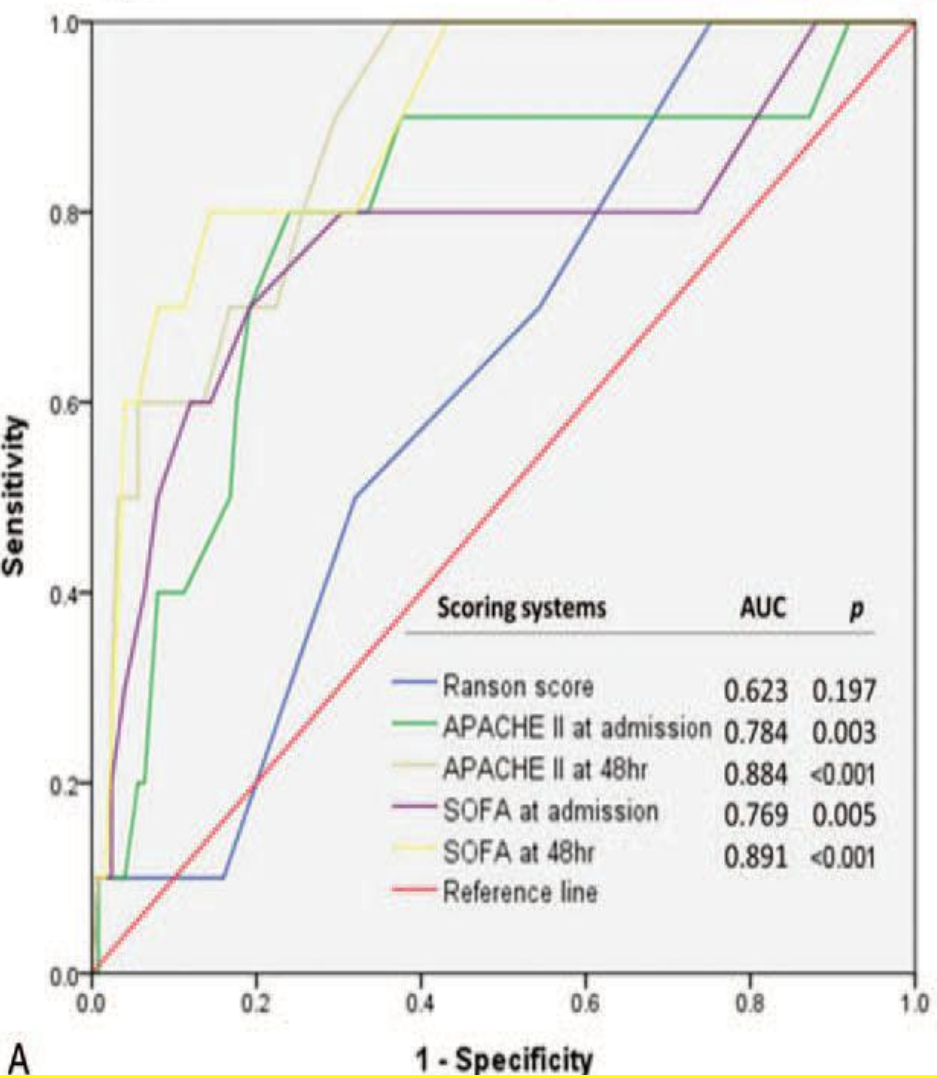
(J Am Heart Assoc. 2018;7:e008169. DOI: 10.1161/JAHA.117.008169.)

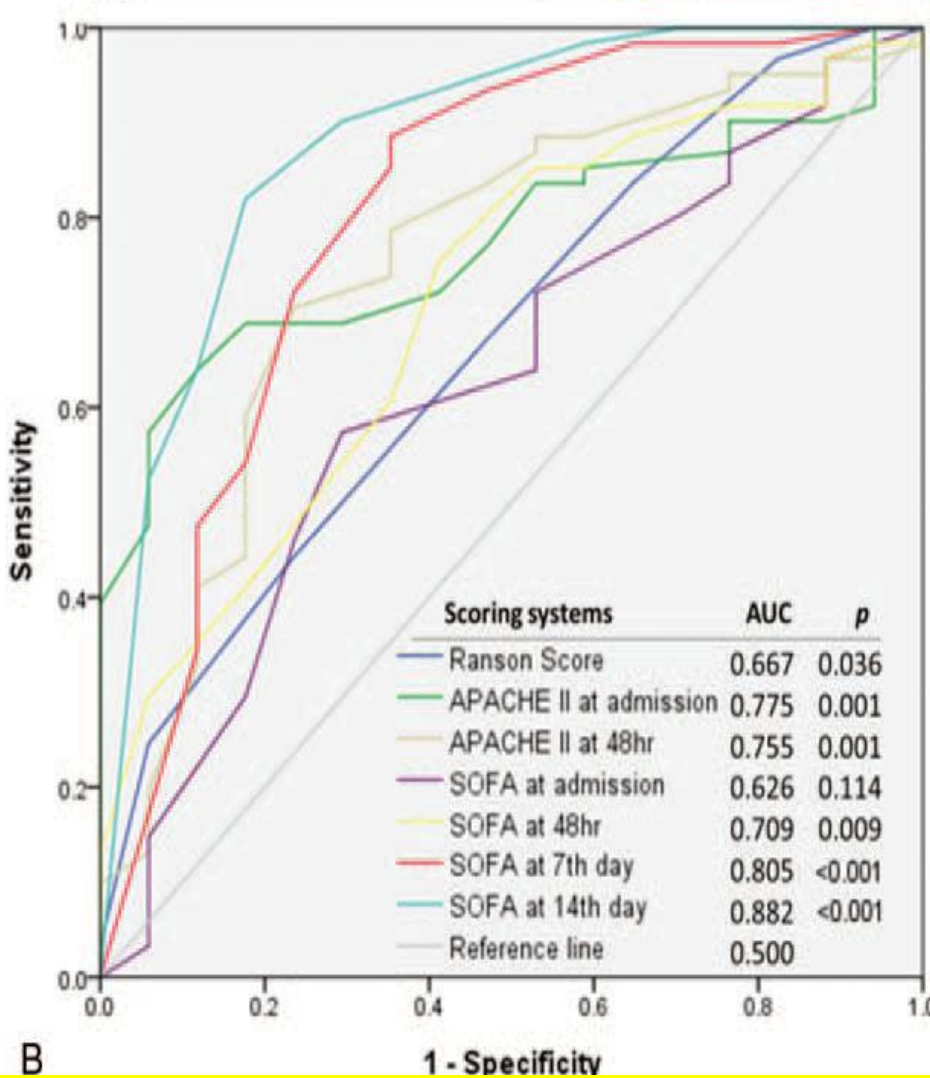
In conclusion, the SOFA score can be easily applied to modern patients in the CICU using an electronic algorithm.

The discrimination of the day 1 SOFA score for short-term mortality was comparable to the APACHE scoring system in this large contemporary cohort of unselected patients in the CICU.

Patients with a SOFA score <2 on the first CICU day had a low risk of death during follow-up.

Maximum and mean SOFA scores over the first 3 CICU days strongly predicted mortality, and patients with an increasing SOFA score between CICU day 1 and day 2 were at increased risk of death.





Comparison of the area under the receiver operating characteristic curve for predicting (A) early mortality (≤14 days)and (B) late mortality (≥14 days) in patients presenting with acute pancreatitis.

severe pancreatitis.

Correlation between SOFA score on day 7 and late mortality.

Medicine (2018) 97:7(e9654) http://dx.doi.org/10.1097/MD.0000000000009654

Abstract

Background—Postinjury multiple organ failure (MOF) remains a significant cause of morbidity and mortality. A large number of scoring systems have been proposed to define MOF, with no gold-standard. The purpose of this study was to compare three commonly used scores – the Denver PostInjury Multiple Organ Failure Score, the Sequential Organ Failure Assessment (SOFA) and the Marshall Multiple Organ Dysfunction Score – by descriptive analysis of the populations described by each score, and their predictive ability for mortality.

Methods—An observational cohort study was performed at a UK trauma center on major trauma patients requiring ICU admission from 2003-2011. A novel trauma database was created, merging

Introduction: An observational cohort study was conducted on all adult trauma patients requiring ICU admission over an eight-year period from 2003-2011 at a single UK trauma center (John Radcliffe Hospital, Oxford). Patients who died within the first 48 hours after injury, or who were delayed tertiary transfers were excluded and Isolated head injuries were excluded by removal of patients treated in the Neurosciences ICU.

from 22.8% (Denver) to 40.5% (Marshall) to 58.5% (SOFA). MOF definition did not affect timing of onset, but did alter duration and organ failure patterns. Overall mortality was 10.6%, with Denver MOF associated with the greatest increased risk of death (Hazard Ratio 3.87, 95% CI 2.24-6.66). No significant difference was observed in area under the ROC curve values between scores. Marked differences were seen in relative predictors, with Denver showing highest specificity (81%) and SOFA highest sensitivity (73%) for mortality.

Conclusions—The choice of MOF scoring system affects incidence, duration, organ dysfunction patterns and mortality prediction. We would recommend use of the Denver score since it is simplest to calculate, identifies a high-risk group of patients and has the strongest association with early trauma mortality.

Is SOFA applicable as a prognostic model for all other clinical scenarios ..?