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Peer Reviewer of *World Journal of Critical Care Medicine*, Athanasia Papazafiropoulou, MD, MSc, PhD, Attending Doctor, Research Scientist, 1st Department of Internal Medicine and Diabetes Center, Tzaneio General Hospital of Piraeus, Piraeus 18536, Greece. pathan@ath.forthnet.gr

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LETTER TO THE EDITOR

Ideal scoring system for acute pancreatitis: Quest for the Holy Grail

Deven Juneja

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Deven Juneja, Institute of Critical Care Medicine, Max Super Speciality Hospital, Saket, New Delhi 110017, India

Corresponding author: Deven Juneja, DNB, FCCP, MBBS, Director, Institute of Critical Care Medicine, Max Super Speciality Hospital, Saket, 1, Press Enclave Road, Saket, New Delhi 110017, India. devenjuneja@gmail.com

Abstract

Clinical scoring systems are required to predict complications, severity, need for intensive care unit admission, and mortality in patients with acute pancreatitis. Over the years, many scores have been developed, tested, and compared for their efficacy and accuracy. An ideal score should be rapid, reliable, and validated in different patient populations and geographical areas and should not lose relevance over time. A combination of scores or serial monitoring of a single score may increase their efficacy.

Key Words: Acute pancreatitis; Scoring systems; Sequential organ failure assessment score

Core Tip: A score which is rapid, reproducible, reliable, and validated across different patient populations is ideally required to predict outcomes in acute pancreatitis. As most of the scores have similar efficacy, the choice of score in a particular center may depend on ease of computation and application. Sequential organ failure assessment score has been validated in various patient populations, is easy to compute and apply, and has withstood the test of time. Hence, it may be a good option, to predict outcomes in patients with acute pancreatitis.

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TO THE EDITOR

We read with interest the retrospective analysis of 653 patients with acute pancreatitis

(AP) by Teng *et al*[1], in which they compared the efficacy of six clinical scores to predict outcomes. The authors concluded that even though both sequential organ failure assessment (SOFA) and 48-h Ranson's score could accurately predict the severity, need for intensive care unit (ICU) admission, and mortality in patients with AP, SOFA score had more favourable statistics.

Scoring systems are commonly employed to assess the need for ICU, to compare groups of patients, and to predict complications and outcomes. Many a time, these scoring systems are developed and tested in particular patient populations like patients with sepsis, AP, and chronic liver disease. Some scoring systems can be applied to general ICU patients. Many scores can be computed at the time of admission but certain others have to be calculated 24-48 h after admission. With improvements in healthcare standards and availability of modern healthcare equipment, patient outcomes may also improve over time, making older scores lose relevance. Hence, these scores need to be tested and compared for their efficacy and accuracy in different patient populations, different geographical areas and over different time periods.

Severe AP is associated with high morbidity and mortality and hence, early recognition of patients at risk of developing complications and poor outcomes is required to institute early aggressive care, and improve outcomes. Many scores have been specifically developed for predicting outcomes of patients with AP, and these include Ranson's, Glasgow, Pancreatitis outcome prediction (POP), bedside index of severity in acute pancreatitis, and Harmless AP scores. These have been compared with each other and also with other scores designed for general ICU patients like Acute Physiology and Chronic Health Assessment (APACHE), simplified acute physiology score (SAPS), and SOFA scores. However, no single score has been found to be an ideal score, able to accurately identify the patients at risk and predict outcomes in different clinical conditions. Hence, newer scores are being developed and tested against the existing scores[2]. But before these scores are routinely used, they need to be meticulously tested in varied patient populations, over a period of time.

In a similar prospective cohort study conducted in ICU patients, we compared ten scores: APACHE II and III, SAPS II, mortality probability models II, SOFA score, Logistic Organ Dysfunction System, Multiple Organ Dysfunction Score, Ranson, modified Glasgow, and POP[3]. As with the analysis of Teng *et al*[1], we also could not identify a single ideal score but SOFA score had the best statistics in predicting severity and mortality in patients with AP. SOFA score > 8 had a sensitivity and specificity of 87% and 90%, respectively, in predicting 30-d mortality[3]. Our study is more than a decade old but SOFA score still seems to be efficacious in predicting outcomes of patients with AP.

SOFA score was originally developed to describe organ failure in patients with sepsis and was termed "Sepsis-related Organ Failure Assessment"[4]. Subsequently its utility in other patient populations have been tested and validated. It has been compared to other severity of illness scores and has shown good accuracy to predict outcomes in varied patient populations. Expanding the role of SOFA score, different modifications have been suggested to improve its accuracy in specific patient populations like pSOFA for paediatric patients, CLIF-SOFA for chronic liver disease, SOFA-HM for haematological malignancies, and qSOFA and lactic acid SOFA for patients in emergency rooms[5]. Even the latest sepsis definitions recommend using SOFA score for diagnosis of sepsis and septic shock [6].

Now, in the age of artificial intelligence (AI), machine learning algorithms have been developed to predict severity, complications, recurrence, mortality, and even timing for surgery in patients with AP, with good accuracy[7]. However, the quality of the studies assessing the accuracy of AI remains low and there is a dearth of studies comparing AI with these commonly applied clinical scores. Hence, more studies need to be done before we routinely start using AI in our daily routine clinical practice. Till then, SOFA score, which is easy to compute and apply, seems to be the most reasonable choice.

FOOTNOTES

Author contributions: Juneja D conducted the research, collected the data, and wrote and edited the manuscript

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Country/Territory of origin: India

ORCID number: Deven Juneja 0000-0002-8841-5678.

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