Dear Editor,

Acute pancreatitis (AP) is a sudden inflammation of the pancreas. AP is a common presentation in emergency department (ED). It can have severe complications and high mortality despite treatment. Severe cases may require admission to Intensive Care Unit.[1,2]

Severity of pancreatitis is an important consideration for ED clinicians making admission judgments. The early identification of severe AP is important for the management and for improving outcomes. Validated scoring systems can be a helpful tool in this process. A multitude of predictive models has been developed to predict the severity of AP based on clinical, laboratory, and radiologic risk factors, various severity grading systems, and serum markers. This study aimed to evaluate the comparative usefulness of the Acute Physiology and Chronic Health Evaluation-II (APACHE-II),[1] computed tomography imaging scoring systems (CTSI) score,[1] Bedside Index of Severity in Acute Pancreatitis (BISAP) score,[1,2] Ranson score,[3] and IMRIE score[3] to predict the morbidity and mortality in acute severe biliary pancreatitis requiring Intensive Care Unit admission.

During the study period, 49 patients were admitted to our ICU for acute biliary pancreatitis. The mean age was $62 \pm 18$ years and the sex ratio (M/F) was at 0.96. The mean value of the Ranson score was $3 \pm 2$ with a range of 0–7. The mean value of the BISAP score was $2 \pm 1$ with a range of 0–4. The mean value of the IMRIE score was $3 \pm 1$ with a range of 0–6. The mean value of the APACHE-II score was $14 \pm 6$ ranging from 4 to 32 points. The mean value of the CTSI index was $3 \pm 2$ with a range of 0–8. For predicting respiratory failure, the APACHE-II score was more predictive with specificity of 70.3%, sensitivity of 83.3%, and area under ROC curve of 0.83. For predicting circulatory failure, the APACHE-II score was more predictive with specificity of 92%, sensitivity of 71.4%, and area under ROC curve of 0.87. For predicting poor outcome (death), the APACHE-II score was more predictive with specificity of 97.5%, sensitivity of 87.5%, and area under ROC curve of 0.96 [Figure 1].

APACHE-II score consists of 12 physiological parameters and evaluates the severity of the disease. It was designed to predict mortality in Intensive Care Units. Current practice guidelines have suggested that APACHE-II score was the most helpful test at admission in distinguishing severe from mild AP, and according to recommendation, it should be generated during the first 3 days of hospitalization.[4] Larvin et al.[5] predicted that the sensitivity and specificity of APACHE-II scoring were superior to Ranson and Glasgow scoring because it can successively monitor therapeutic response and prognostic evaluation in patients with AP. In this study, APACHE-II score appeared to be a more influential tool than other scoring systems to evaluate the mortality and morbidity.

We concluded that APACHE-II score appeared to be a more influential tool than other scoring systems to evaluate the mortality and morbidity in patients with severe acute biliary pancreatitis requiring Intensive Care Unit admission. However, we must mention that our study has some limitations. The major limitation is the sample size. However, this can be explained by the short study period in a single center. Moreover, it included only patients with biliary pancreatitis to study the usefulness of five severity scores to predict the morbidity and mortality in this specific condition. The retrospective design of our

![Figure 1: Receiver-operating curves of BISAP, Ranson, IMRIE, APACHE-II, and CTSI scores to predict outcome (death) (BISAP: Area under the curve = 0.80; Ranson: Area under the curve = 0.75; IMRIE: Area under the curve = 0.63; APACHE-II: Area under the curve = 0.96; CTSI: Area under the curve = 0.62).](image-url)
study represents a methodological limitation. However, the same methodology was used in several studies.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

Ali Majdoub, Mabrouk Bahloul¹, Mounaa Ouaz, Kamila Chtara¹, Yassine Msakni, Kais Regaieg¹, Mounir Bouaziz¹, Bechir Haddad
ICU, Tahar Sfar University Hospital, Mahdia-Tunisia, ¹ICU, Habib Bourguiba University Hospital - 3029, Sfax, Tunisia

Address for correspondence:
Prof. Mabrouk Bahloul,
ICU Habib Bourguiba University Hospital- 3029 Sfax Tunisia.
E-mail: bahloulmab@yahoo.fr

REFERENCES

1. Kuo DC, Rider AC, Estrada P, Kim D, Pillow MT. Acute pancreatitis: What’s the score? J Emerg Med 2015;48:762-70.
2. Fagenholz PJ, Fernández-del Castillo C, Harris NS, Pelletier AJ, Camargo CA Jr. Direct medical costs of acute pancreatitis hospitalizations in the United States. Pancreas 2007;35:302-7.
3. Suzuki M, Saito N, Naritaka N, Nakano S, Minowa K, Honda Y, et al. Scoring system for the prediction of severe acute pancreatitis in children. Pediatr Int 2015;57:113-8.
4. Banks PA, Freeman ML; Practice Parameters Committee of the American College of Gastroenterology. Practice guidelines in acute pancreatitis. Am J Gastroenterol 2006;101:2379-400.
5. Larvin M, McMahon MJ. APACHE-II score for assessment and monitoring of acute pancreatitis. Lancet 1989;2:201-5.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.