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Letter to the Editor: Improving mortality prediction in acute pancreatitis: A proposal for refining ICU risk scoring models

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To the Editor:

We read with great interest the article by Ali et al. which proposes a risk score to predict inpatient mortality in patients with acute pancreatitis admitted to the intensive care unit (ICU) [1]. The authors' efforts in addressing the need for improved risk prediction model to identify high-risk patients early in the disease course is commendable. However, we would like to highlight some important concerns regarding the study methodology and generalizability.

While the study provides valuable insights, the reliance on a single-centre, retrospective analysis of 380 patients raises questions about the generalizability of the findings, especially in relation to the laboratory parameters used to develop the prediction model. A key concern in retrospective studies is the potential for missing data, which could affect the robustness of the results. Additionally, the study lacks details on other critical clinical parameters that are essential for assessing the severity of acute pancreatitis. For example, information on the duration of illness before hospitalization, the number and type of organ dysfunctions, and whether the organ dysfunction was primary or secondary at the time of admission, intra-abdominal hypertension would be important considerations in any mortality prediction model for acute pancreatitis. These clinical factors have been shown in previous research to significantly impact the prognosis of acute pancreatitis [2,3].

Another limitation of the study is the single time point assessment rather than dynamic assessment of the proposed prediction model. It is well-established that persistent organ dysfunction in patients with acute pancreatitis is associated with worse outcomes compared to transient organ dysfunction [4,5]. However, the model developed by Ali et al. uses single-time-point values for laboratory parameters, which does not capture the dynamic nature of organ dysfunction in these patients. The model does not differentiate between early and late organ dysfunction, even though the timing of organ dysfunction is a well-known predictor of mortality in acute pancreatitis [6]. This limitation reduces the model's potential accuracy and applicability in clinical practice.

The authors focused on predicting 30-day in-hospital mortality, assuming that all patients included were critically ill ICU patients. However, the study does not clarify why ICU admission was necessary for patients who did not have severe pancreatitis. Only 40 out of 380 (10.52 %) patients had necrotizing pancreatitis, with 11 (2.9 %) having infected necrosis [7]. Despite this, the study reports an in-hospital mortality rate of 88/380 (23.2 %) overall, and 76/340 (22.35 %) in patients without necrosis or infection. This raises the possibility that the study included all-cause mortality rather than focusing specifically on pancreatitis-related mortality, which further complicates the interpretation of the findings and diminishes the relevance of the developed prediction model for acute pancreatitis.

Additionally, while the authors claim that their model outperforms established risk scores such as APACHE II and BISAP, the methodology used to compare these models is questionable. The authors randomly selected a small sample of 70 patients to assess the superiority of their model against APACHE II and BISAP. This small, non-representative sample introduces a significant risk of bias, and the comparison may not reflect the true performance of the model. A more robust comparison using a larger and more diverse patient population would provide more reliable evidence of the model's advantages.

In conclusion, while Ali et al. have made a valuable contribution by exploring the role of laboratory markers in predicting in-hospital mortality in acute pancreatitis, the generalizability and clinical applicability of their model remains uncertain. The limitations in the study design, including potential biases in patient selection, possibility of missing data, and single time-point assesment of the model, highlight the need for further research. We believe that the model's accuracy and impact should be validated prospectively in a broader cohort of patients before it can be considered in clinical practice.

Conflict of interest

None to declare.

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