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LETTER

Association between Stress Hyperglycemia Ratio and In-Hospital Mortality in Patients with Sepsis [Letter]

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Dear editor

I recently read an original article by Ma et al titled "Association of Stress Hyperglycemia Ratio and in-Hospital Mortality in Patients with Sepsis: A Two Center Retrospective Cohort Study".[1] This is a very valuable and significant study in the field of medicine. It is an early or the first study to examine the relationship between Stress Hyperglycemia Ratio (SHR) and mortality in septic patients, and provides timely identification of septic patients who are at higher risk of in-hospital mortality so that appropriate clinical decisions can be made. Given the high risk of mortality in septic patients and the severe burden it places on global health systems,[2] it is the responsibility and mission of healthcare professionals to enhance the in-hospital management of septic patients.

This paper is well written, with a sound study design, proper methodology, and abundant results. The authors used various methods to explore the relationship between SHR and in-hospital mortality of sepsis patients, such as multi-factorial logistic regression analysis, Kaplan–Meier survival analysis, Cox regression analysis, and subgroup analyses, which led to more reliable conclusions. In the discussion section, the authors explained in detail the potential mechanisms by which controlling SHR within reasonable limits may improve patient prognosis. Several aspects of improvement still exist in this study for reference.

First, although the logistic regression model is widely recognized, it may inadvertently cause risk to be overestimated in the presence of potentially competing risks. Therefore, for the assessment of mortality risk explored in this article, especially when other associated diseases (heart failure, renal failure, etc) occur, the use of competing risk model seems more suitable Traditional survival analysis techniques may not adequately account for the impact of secondary events on the primary study outcome, leading to biased assessments, whereas competing risk model provides a more comprehensive analytical perspective.[3]

Second, the authors have included important information on demographic characteristics, laboratory tests, and assessment scales to adjust for potential covariates, which is commendable. However, we recommend further expansion of the covariates. Considering that studies have shown that alcohol dependence is independently associated with sepsis, infectious shock, and in-hospital mortality in ICU patients, it can be inferred that history of alcohol consumption may be a covariate influencing the relationship between SHR and sepsis.[4] Moreover, factors such as educational level and economic income should also be considered in order to more fully assess the stability and reliability of the results.[5]

In addition, although subgroup analyses were used to further analyze the relationship between SHR and in-hospital mortality in patients with sepsis, it is advised that the authors supplement the methods section with the rationale for stratification by age and APACHEII score.

Disclosure

The author reports no conflicts of interest in this communication.

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