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Letters to the editor

Prognostic value of lactate/albumin ratio in patients with acute-on-chronic liver failure

To the Editors in Chief,

We were intrigued by the article titled "Elevated lactate/albumin ratio (LAR) as a novel predictor of in-hospital mortality in hospitalized cirrhotics" by Krispin *et al*., as it addresses an important clinical issue in the field [1]. The study aimed to investigate the clinical significance of the LAR in patients hospitalized with acutely decompensated cirrhosis. The results demonstrated that patients who died during hospitalization had a significantly higher mean LAR (1.796 ± 1.42) than those who survived until discharge (0.9 ± 0.7) ($p < 0.001$), with the LAR emerging as the most potent and statistically significant predictor of in-hospital mortality. In light of these findings, the authors concluded that an elevated LAR predicts in-hospital mortality in patients with acute-on-chronic liver failure (ACLF). We appreciate the authors' valuable contribution and are impressed by the study's rigorous methodology and significant clinical implications for patients with ACLF.

The early recognition of ACLF is paramount for optimizing patient outcomes, potentially reducing the need for liver transplantation, and decreasing mortality. Emergency physicians are crucial in the management of ACLF cases, working in collaboration with hepatologists and intensivists to deliver timely and targeted interventions [2]. ACLF severity is frequently stratified using scoring systems like the CLIF-C ACLF and AARC ACLF score, which integrate laboratory parameters, clinical variables, and extrahepatic organ dysfunction. Despite advancements in diagnostic criteria and prognostic tools, straightforward laboratory markers for predicting ACLF onset and patient outcomes are not universally endorsed [3].

Krispin *et al*.'s multivariable analysis revealed that the identified risk factors for adverse outcomes in their study, which included LAR, Model for End-stage Liver Disease score, white blood cell count, lactate, and platelets/creatinine ratio, were in accordance with previous studies on this subject. However, being a retrospective study, there were inherent limitations in the investigation that could not be circumvented. Specifically, the current study did not collect information on frailty, sarcopenia, and nutritional status, which are recognized as crucial prognostic indicators of morbidity and mortality in patients with advanced chronic liver disease (ACLD). Frailty, sarcopenia, and malnutrition are common occurrences in patients with ACLD. The Fried Frailty Index identified 17 % of patients awaiting liver transplantation as frail. Furthermore, cirrhosis-associated sarcopenia affects an estimated 30 % to 70 % of patients with ACLD and has been established as an independent prognostic factor for mortality in cirrhotic patients. The critical role of malnutrition in the complex development of sarcopenia and frailty in patients with ACLD cannot be ignored, with estimates of malnutrition prevalence in cirrhosis ranging between 65 % and 90 %. Given the strong association of these clinical states with adverse outcomes in ACLD the assessments of frailty, sarcopenia, and malnutrition have garnered increasing interest in recent years [4–6].

In conclusion, this study highlights the potential clinical significance of LAR as a prognostic biomarker for ACLD patients presenting to the ED. The results demonstrate that an elevated LAR is associated with adverse liver-related outcomes, such as ACLF and liver-related mortality. Given the high prevalence of frailty, sarcopenia, and malnutrition in ACLD patients, it is imperative that future investigations examine the relationship between these factors and LAR to further elucidate disease progression and prognosis.

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Declaration of Competing Interest

None.

CRediT authorship contribution statement

Yalcin Golcuk: Writing – review & editing. **Burcu Kaymak Golcuk:** Writing – review & editing.

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Yalcin Golcuk*
Burcu Kaymak Golcuk
Faculty of Medicine, Department of Emergency Medicine, Muğla Sıtkı Koçman University, Muğla, Turkey
Clinical Biochemistry Service, Muğla Training and Research Hospital, Muğla, Turkey

*Corresponding author.
E-mail addresses: dryalcingolcuk@gmail.com, yalcingolcuk@mu.edu.tr (Y. Golcuk).

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