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Comment on "Prognostic Value of Modified Glasgow Prognostic Score in Acute Decompensated Heart Failure with Reduced Ejection Fraction"

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Dear Editor,

We read with interest the article by Tunca et al.,[1] titled "Prognostic Value of Modified Glasgow Prognostic Score (mGPS) in Acute Decompensated Heart Failure with Reduced Ejection Fraction." The study offers valuable insights into the prognostic utility of the mGPS in a selected population of patients with heart failure with reduced ejection fraction. We would like to respectfully raise two points regarding the statistical methodology that could help readers better interpret the results.

The first point concerns the potential for interval-censored events in the survival data. The authors state that post-discharge outcomes were assessed via "follow-up telephone interviews." If these interviews did not ascertain the exact date of death, the event time would be known only to fall within the interval between the last known point of contact (e.g., hospital discharge) and the date of the interview. The standard Cox proportional hazards (Cox PH) model has theoretical limitations when applied to interval-censored data, as it is primarily designed for right-censored data in which event times are known precisely. Analyzing such data with a Cox PH model, for instance, by imputing a single event time, can introduce bias into the risk estimates. In contrast, statistical models specifically designed to accommodate interval censoring, such as certain formulations of accelerated failure time (AFT) models, adjust their likelihood function to handle this type of data appropriately.[2,3] A discussion of how post-discharge event times were handled, and potentially a sensitivity analysis using an AFT model, could provide valuable evidence to support the robustness of the reported hazard ratios.

Furthermore, for a precise understanding of temporal risk dynamics, the proportional hazards assumption underlying the chosen Cox model requires careful scrutiny. It is unclear whether this condition of time-invariant hazard ratios was formally tested, for example, through analysis of Schoenfeld residuals. If this assumption is violated, the reported risk estimates may represent a potentially misleading average over the follow-up period rather than capturing the changing nature of risk. Should non-proportionality be detected, other models—including Cox models with time-dependent effects, stratified Cox models, or accelerated failure time models—would offer a more nuanced characterization of mortality risk.[4,5]

We believe that clarification of these two methodological aspects would further strengthen the study and aid in the accurate interpretation of its important findings.

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