

# Factors Associated with Length of Intensive Care Unit Stay Following Cardiac Surgery [Letter]

Abdul Moeed , Zunera Huda 

Department of Internal Medicine, Dow University of Health Sciences, Karachi, Pakistan

Correspondence: Abdul Moeed, Department of Internal Medicine, Dow University of Health Sciences, Karachi, Pakistan, Tel +92-3061159372, Email [abdulmoeed117@outlook.com](mailto:abdulmoeed117@outlook.com)

## Dear editor

Recently, an original study titled “Factors Associated with Length of Intensive Care Unit Stay Following Cardiac Surgery in Cardiac Center Ethiopia, Addis Ababa, Ethiopia: Institution Based Cross-Sectional Study”<sup>1</sup> was published by Techane et al in the respectable journal “Research Reports in Clinical Cardiology”. We want to acknowledge the remarkable work done by the authors and congratulate them on the successful publication.

This hospital-based cross-sectional study identified the factors that determined the length of ICU stay (LOS) following cardiac surgery, the majority being elective surgeries and mitral valve repair. A total of 248 patients admitted post-cardiac surgery from 2015 to 2019 were recruited and analyzed at the cardiac center Ethiopia. Although the study successfully identified smoking history, the number of surgeries, and post-surgery complications as potential factors of prolonged ICU stay, we feel that the study has certain lacking. As such, we would like to make some contributions.

Numerous studies have reported increased patient age correlated with prolonged LOS; however, this study failed to establish age as a predictive factor. Similarly, Habeeb-Allah et al highlighted advanced age as an essential risk factor associated with post-cardiac surgery delirium, leading to a prolonged hospital stay.<sup>2</sup> Techane et al included only 19 patients (7.7%) in the age bracket 48–67 years and 229 patients (92.3%) between the ages 18 and 48 years, thereby failing to identify the aforementioned relationship.

Additionally, the study only identified pulmonary hypertension, respiratory diseases, heart failure, myocardial infarction, diabetes mellitus, and renal failure as the associated comorbidities, whereas numerous studies have documented low left ventricular ejection fraction (LVEF) as a predictor of extended hospital stays. Even though Techane et al classified patients according to LVEF, no correlation was drawn. Bootsma et al reported a striking association between low LVEF and complications like elevated creatinine, ultimately resulting in longer LOS following cardiac surgery.<sup>3</sup>

Lastly, Techane et al lacks in identifying and reporting any patients who died during the hospital stay, and if they died, how were they adjusted in the calculation of LOS. Studies have favored identifying mortality as a competing risk over classifying death as the worst possible outcome (longest LOS),<sup>4</sup> however, Techane et al fail to report the handling of in-hospital mortality.

It is evident from the above-mentioned studies that age, the inclusion of in-hospital mortality, and LVEF make a significant contribution in the determination of LOS in ICU post-cardiac surgery. Hence, it is imperative that further large-scale studies with well-developed methodologies are conducted to understand this association better.

## Disclosure

The authors report no conflicts of interest for this communication.

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