

Comment on Han et al: Analysis of heart injury laboratory parameters in 273 COVID-19 patients in one hospital in Wuhan, China

To The Editor,

Han et al¹ reported a novel study about heart injury laboratory parameters in coronavirus disease-2019 (COVID-19). The authors found that high concentration in venous blood of CK-MB, MYO, ultra-Tnl, and NT-proBNP were associated with the severity and case fatality rate of COVID-19. It is crucial to monitor the myocardial enzyme profiles and reduce the mortality and complications caused by COVID-19.

Unfortunately, there were some obvious limitations in this article, which may reduce the degree of reliability of this study. As a typical retrospective, single-center study, the authors divided patients into three groups depending upon the severity of the disease. As we all known, a retrospective clinical study requires enough baseline information. However, the authors have not provided the baseline clinical information of the patients. According to the grouping criteria by the severity of clinical symptoms and imaging changes for this study, it is supposed the baseline information was inconsistently between three groups. Some vital baseline information is different between mild patients and severe/critical, such as age, history of cardiovascular diseases, diabetes, and hypertension.^{2,3} It is uncertain whether they acted as risk factors or not for a higher morbidity and mortality in COVID-19 now.⁴ There is more morbidity of acute respiratory distress syndrome (ARDS) in severe/critical patients with COVID-19 which could induce higher level of the myocardial enzyme.⁵ Without the baseline information about the disease of the respiratory system in severe/critical patients, it could not confirm that the higher level of myocardial enzyme caused by virus infections or ARDS. Biomarker elevations may simply reflect systemic illness in a large fraction of critical patients with COVID-19.⁶ Maybe a adjust Cox regression model is suitable for more credible analysis after updated sufficient baseline information. In a word, it is necessary to supplement complete baseline information and take it into full consideration in the study at the same time to make the results more reliable and credible.

In addition, the authors had compared and analyzed those four myocardial enzymes between alive and dead patients. The results showed that myocardial enzymes were higher in death patients than alive patients, while the authors concluded that higher myocardial enzymes were associated with the severity and case fatality rate in COVID-19. However, it was just a cross-sectional study and collected data only in one time. We indicate that authors could collect more data at a different time from the patients aiming at

analyzing a variation tendency of myocardial enzyme in each patient. This way, the relationship between fatality rate and the myocardial enzyme level can be more definite and reliable in methodology.

We all known that the doctors faced huge clinical challenge during COVID-19 epidemic period. We all respect the authors' work. In conclusion, although there were some limitations in the study, it was valuable during the early periods of the epidemic COVID-19. We are looking forward to receiving more detailed data and information from the authors to make the study more perfectly.

ACKNOWLEDGMENT

This study was supported by the Fundamental Research Funds for the Central Universities of Central South University (grant number 2019zzts359).

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

Concepts: BZ and WL. Collection and review literatures: All authors. Drafting of the manuscript: BZ, BQ, WH, and YL.

Boyoun Zhang MD¹ 

Jie Zhang MD²

Banglun Qian MD¹

Wei Han MD¹

Yukang Liu MD¹

Wenliang Liu MD, PhD¹

¹Department of Thoracic Surgery, The Second Xiangya Hospital, Central South University, Changsha, China

²Department of Orthopedics Surgery, The Second Xiangya Hospital, Central South University, Changsha, China

Correspondence

Wenliang Liu, MD, PhD, Department of Thoracic Surgery, The Second Xiangya Hospital, Central South University, No. 139 Middle Renmin Rd, Changsha, 410011 Hunan, China.

Email: liuwenliang@csu.edu.cn

Funding information

Fundamental Research Funds for the Central Universities of Central South University, Grant/Award Number: 2019zzts359

ORCID

Boyong Zhang  <http://orcid.org/0000-0003-4050-6623>

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