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Reply to Letter: "Impact of Hypertension on the Prognosis of COVID-19 Disease and Uncertainties that Need to be Clarified"

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We thank Sanlialp et al for their comments[1] regarding our study entitled "Can C-reactive protein to albumin ratio predict in-hospital death rate due to COVID-19 in patients with hypertension?"[2]

In our study,[2] all hypertensive patients were selected consecutively and then classified as survivors and non-survivors. Because this study was conducted early during the COVID-19 pandemic, the diagnosis could have been delayed. There was a lack of approved management and several therapy options were tried; some were then abandoned. All of the abovementioned factors might have led to higher mortality rates. However, our results are in accordance with the literature. Rodilla et al[3] reported hypertension (HT) as the most common risk factor for COVID-19 mortality; approximately 50% of non-surviving patients had HT. Our results also agree with another study where the mortality rate was 31% in hypertensive COVID-19 patients.[4] A meta-analysis concluded that mortality rates in the hypertensive group were approximately 50%, and HT was associated with a 3.36-fold increased risk of death due to COVID-19.[5]

Sanlialp et al[1] cited 2 studies on the relationship between the grade of HT, and hospitalization, and adverse outcomes. In the first study, the description of good or bad blood pressure (BP) groups was based on BP measurements in the morning and afternoon.[6] This might have led to misclassification. The measurements should be based on 24-h ambulatory measurement, which is not applicable, especially in the earlier period of the COVID-19 pandemic. Moreover, they noted that an average BP < 140 mmHg was considered as the good BP and an average BP > 140 mmHg was considered as the bad BP. But, the mean of the good control group was 134 ± 18 mmHg and that of the poor BP control group was 153±18.5 mmHg. These values are normally distributed, and the 95% sample of the population was the mean ± 2 standard deviations. So, the patients might be misclassified between these 2 groups. The second study reported that mortality rates differed between the grades of HT.[7] But the study population consisted of 1628 patients, and half of them had a diagnosis of HT and were using anti-hypertensive drugs. Also, in this study, the BP measurements for grading patients are not defined in detail regarding whether they used manual measurements or the average of 24-h ambulatory BP. The grade of HT should be determined in anti-hypertensive treatment-naive patients. In our study, all patients were previously diagnosed with HT and were using anti-hypertensive drugs. Thus, we could not grade them and we could not use 24-h ambulatory BP measurements due to the risk of virus transmission.

Finally, our aim was not to investigate the relationship between the grades of HT and mortality in hypertensive COVID-19 patients. Our objective was to detect an easily accessible marker of survival in hypertensive patients with COVID-19. So, we did not categorize the patients based on the grades of HT. However, this unmeasured association between BP and mortality due to COVID-19 might have contributed to the difference in mortality rates between the groups in our study.

Declaration of Conflicting Interests

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