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

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Dear editors

Saylik et al[1] investigated the role of C-reactive protein (CRP) to albumin ratio (CAR) on in-hospital mortality related to corona virus disease 2019 (COVID-19) in hypertensive patients and reported a significant association between CAR and COVID-19 disease. The authors should clarify some points.

How was the patient population selected? Were the 176 hypertensive patients selected consecutively and classified as survivors and non-survivors, or did they first identify survivors and non-surviving hypertensive patients separately and then compared them? In this study, the mortality rate in hypertensive patients with COVID-19 disease appears to be relatively high (28.9%). A large Chinese case series[2] reported the fatality rates of hypertensive patients with COVID-19 disease as 6%.

The second point to be clarified is if the age, comorbidity and drug use of the groups are the same; what are the factors affecting survival? Advanced age is an important risk for COVID-19 disease and it has been proposed that hypertension may promote the disease severity depending on the underlying comorbidities rather than alone, especially in the presence of myocardial damage and cardiovascular disease.[3-5] Indeed, recent studies have reported that hypertension alone may not play a crucial role in the COVID-19 disease.[6,7] Another point to be clarified is that there is no information on blood pressure control of the patients. There is data on the relationship between the grade of hypertension with hospitalization and adverse outcomes due to COVID-19 disease.[8,9]

The pathophysiological mechanisms in COVID-19 disease remain unclear. It has been suggested that a complex process involving angiotensin-converting enzyme (ACE) 2, toll-like receptors, proinflammatory cytokines, coagulation factors, blood cells such as neutrophils, lymphocytes, and monocytes contribute to the progression of the disease.[10] One study demonstrated that elevation in the CRP levels during hospitalization was associated with the complications due to COVID-19 disease.[11] However, in this study, no detailed information was given regarding the cause of death. In addition, the number of patients in studies showing the predictive importance of albumin for COVID-19 disease is relatively low.[12,13] In one study, CAR was an independent predictor of in-hospital mortality in patients with pneumonia, but there is no data on the presence of concomitant infections.[14]

Large-scale studies involving different populations are needed to determine whether hypertension plays a crucial role in COVID-19 disease.

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