Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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ACE Inhibitors and Angiotensin II Receptor Blockers May Have Different Impact on Prognosis of COVID-19

Amat-Santos et al. (1) conducted a randomized open-label study, in which they demonstrated that ramipril did not affect mortality outcomes in patients with coronavirus disease-2019 (COVID-19) (users: 4.0% vs. nonusers: 3.8%). We appreciate the open discussion on the use of renin-angiotensin-aldosterone system inhibitors in the context of COVID-19.

However, recent evidence indicated that using angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs) was associated with better survival (3.7% [7 of 188 patients] vs. 9.8% [92 of 940 patients]) (2). Another meta-analysis of 9 studies also arrived at a similar conclusion (odds ratio: 0.57; 95% confidence interval [CI]: 0.38 to 0.84) (3). There are opposing hypotheses on the effects of ACE inhibitors and ARBs on COVID-19. Zhou et al. (4) found that in-hospital use of ARBs was associated with lower mortality (adjusted hazard ratio: 0.31; 95% CI: 0.18 to 0.53), whereas ACE inhibitors had no impact on mortality outcomes. Thus, the differing therapeutic effects exerted by ACE inhibitors and ARBs could account for the conflicting findings. It has been shown that the effects of losartan, an ARB, would be favorable to prevent severe acute respiratory syndrome-coronavirus–induced acute lung injury in severe acute respiratory syndrome-coronavirus-S protein-treated mice (5).

In conclusion, ARBs and ACE inhibitors should be studied separately in adequately powered randomized trials, and the risks and benefits of ACE inhibitors and ARBs must be reconsidered separately. ARBs, but not ACE inhibitors, may have favorable effects on outcomes in COVID-19.

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