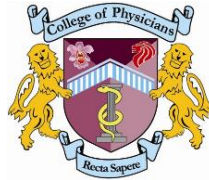




Singapore Cardiac Society



Chapter of Cardiologists
College of Physicians, Singapore



HEART FAILURE SOCIETY
(SINGAPORE)

The current COVID-19 pandemic has been shown to be caused by the novel SARS-COV-2 virus¹. The SARS-COV-2 virus belongs to the Coronaviridae family and is similar to the human NL63-Coronavirus (NL63-CoV) and 2003 SARS-Coronavirus (SARS-CoV), all three of whom share an affinity for human ACE2 receptors^{1, 2}.

While there is increased risk of mortality and morbidity in COVID-19 patients with hypertension³, there has never been any evidence to show that hypertensive patients on background treatment with Angiotension Converting Enzyme Inhibitors (ACEi) or Angiotensin Receptor Blockers (ARB) were at higher risk of an adverse outcome during the 2003 SARS epidemic nor human colds caused by the NL63-Coronavirus. Meta-analysis of background usage of ACEi and ARB on pneumonia (viral or bacterial) were either neutral or beneficial even for non-cardiovascular events^{4,5}.

The position of the Singapore Cardiac Society, Chapter of Cardiologists - College of Physicians Singapore, and Heart Failure Society (Singapore) are consistent with the position statement of other professional societies such as the European Society of Cardiology⁶, in that current use of ACEi and ARB for hypertension and heart failure should continue; in accordance with current treatment guidelines. Stopping these evidence-based medications may cause undue harm without evidence of protection against COVID-19. Nonetheless, our respective organizations will continue to monitor the situation closely and will provide updates as new research becomes available.

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¹ Zhou P et al A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature 2020, 579: p270–273.

² Kailang Wu et al Crystal structure of NL63 respiratory coronavirus receptor-binding domain complexed with its human receptor Proceedings of the National Academy of Sciences 2009, 106 (47): 19970-19974.

³ Fei Zhou et al Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet 2020. Published Online March 11, 2020. doi:[https://doi.org/10.1016/S0140-6736\(20\)30566-3](https://doi.org/10.1016/S0140-6736(20)30566-3)

⁴ Caldeira D et al Risk of pneumonia associated with use of angiotensin converting enzyme inhibitors and angiotensin receptor blockers: systematic review and meta-analysis. BMJ. 2012; 345: e4260. Published 2012 Jul 11. doi:10.1136/bmj.e4260.

⁵ Wu A et al. The Association of Cardioprotective Medications with Pneumonia-Related Outcomes. PLoS ONE 9(1): e85797. <https://doi.org/10.1371/journal.pone.0085797>

⁶ [https://www.escardio.org/Councils/Council-on-Hypertension-\(CHT\)/News/position-statement-of-the-esc-council-on-hypertension-on-ace-inhibitors-and-ang](https://www.escardio.org/Councils/Council-on-Hypertension-(CHT)/News/position-statement-of-the-esc-council-on-hypertension-on-ace-inhibitors-and-ang) (accessed 16 Mar 2020).