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.

Journal of Molecular and Cellular Cardiology xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Journal of Molecular and Cellular Cardiology

journal homepage: www.elsevier.com/locate/yjmcc

Short communication

Cardiovascular molecular mechanisms of disease with COVID-19

Roger Foo[a,*], Yibin Wang[b,*], Wolfram-Hubertus Zimmermann[c], Johannes Backs[d], Dao Wen Wang[e]

[a] Cardiovascular Research Institute, Yong Loo Lin School of Medicine, National University of Singapore, Singapore
[b] Division of Molecular Medicine, Department of Anesthesiology and Perioperative Medicine, David Geffen School of Medicine, UCLA, United States
[c] Institute of Pharmacology and Toxicology, University Medical Centre Goettingen, Germany
[d] Institute of Experimental Cardiology, University of Heidelberg, Germany
[e] Divisions of Cardiology and Internal Medicine, Wuhan Tongji Hospital, Huazhong University of Science and Technology, China

Since the first reports of its outbreak in Hubei in 2019, COVID-19 has spread across the globe, radically changing the way we live and how we function day to day, in ways that we have never imagined. This unprecedented challenge highlights the need for the awareness of the risk of viral spread and early containment as the most effective measures to break the chain of infection. While the race to develop an effective vaccination is on and must be supported with highest priority, there is a critical need for fundamental research, not just for conquering a presently raging pandemic, but for gaining insight into mechanisms that contribute to acute and chronic presentations of COVID-19.

Here at the JMCC, we are dedicated to the cutting-edge discovery of molecular and cellular insights in cardiovascular diseases. The present pandemic suggests that the cardiovascular system may be severely impaired by COVID-19 infections and its secondary consequences. Early clinical observations suggest that cardiovascular complications are a major cause, as well as a significant risk factor, for COVID-19 associated mortality. Angiotensin-2 Converting Enzyme (ACE2), an important regulator of the cardiovascular system, is the molecular receptor for the culprit SARS-CoV-2 virus. Because of this, among many questions raised are ones such as whether patients on ACE inhibitors are at higher risk for infection with COVID-19, and hence should be taken off the medication. Emerging findings about the impact of ACE-inhibitors, Angiotensin receptor blockers, and even non-steroidal anti-inflammatory agents on the susceptibility and prognosis of COVID-19 have direct impact on clinical practice. Our current knowledge to address the most burning questions is underdeveloped and in addition fragmented, highlighting the need for more research and better communication among clinicians and basic scientists in our field.

JMCC aims to contribute by featuring COVID-19 related papers in forthcoming issues, including letters to editor, editorials, reviews, brief research communications and full research articles. As a kick-off, Drs Yang and Meng from Nantong University write a crisp summary of what we know about ACE2 and COVID-19 thus far. Professor Thomas Eschenhagen and colleagues, in another Letter to Editor, set out an interesting hypothesis around ACE2 expression in heart failure, in relation to treatment using different regiments of renin-angiotensin-system antagonists. They describe a laudable and much anticipated effort underway to study plasma ACE2 concentrations in relation to pulmonary and cardiovascular outcomes among COVID-19 patients with heart diseases.

We look forward to more papers that address such important interactions between COVID-19 and cardiac health, particularly related to the mechanisms of how COVID-19 affects the cardiovascular system and contributes to the high mortality observed in infected patients. The JMCC editorial team is convinced that the cardiovascular research community can have an important impact on diagnosis and treatment of patients infected with COVID-19 and thus endorses high quality submissions.

* Corresponding authors.
E-mail addresses: foosyr@gis.a-star.edu.sg (R. Foo), YibinWang@mednet.ucla.edu (Y. Wang).

https://doi.org/10.1016/j.yjmcc.2020.04.010
Received 3 April 2020; Received in revised form 8 April 2020; Accepted 10 April 2020