Reflections on COVID-19 & cardiovascular care on World Heart Day

The world observes the World Heart Day annually on 29th September. This occasion, created by the World Heart Federation, aims to inform, educate and galvanize action against cardiovascular diseases globally. There is still much work to do, given that ischaemic heart disease and stroke claimed the lives of approximately 18.6 million individuals worldwide in 2019. This sobering toll was recorded before the emergence of the COVID-19 pandemic. To date, there have been more than 200 million cases of COVID-19 reported worldwide and more than four million reported deaths.

India too, like many other nations, has unfortunately borne a great brunt of the COVID-19 pandemic. Against the backdrop of a huge burden of cardiovascular diseases, the COVID-19 pandemic presents additional and unique challenges for the provision of cardiovascular diseases. The COVID-19 pandemic impacts the care of cardiovascular diseases in three major ways. First, COVID-19 has an interaction with cardiovascular diseases, as COVID-19 can result in myocardial injury or myocarditis, as well as other thrombotic complications such as pulmonary embolism. COVID-19 patients can present with a wide spectrum of manifestations, including cardiac complaints and arrhythmias. As such, health providers should be more cognizant of the cardiovascular effects of COVID-19 on such patients and have a low index of suspicion for diagnosing, monitoring for and treating these conditions. COVID-19 can also exacerbate the manifestations of underlying cardiac conditions. Patients with cardiovascular risk factors and disease are at a greater risk of severe illness requiring intensive care due to COVID-19. The presentations can also confound the diagnosis of serious underlying cardiac conditions, such as heart failure or infective endocarditis due to the similar presentations.

As a preventive strategy, it is thus very important to continue to treat patients with cardiovascular diseases, such as hypertension, diabetes mellitus, ischaemic heart disease and heart failure. Furthermore, mRNA-based COVID-19 vaccinations have recently been identified to be associated with myocarditis, and this complicates the campaign of inoculating large populations of people to achieve herd immunity. The risk–benefit ratio suggests that vaccination against COVID-19 still far outweighs the deleterious effects of suffering from a serious COVID-19 infection. Long COVID, which is a term for the long-term effects of COVID-19 infection, is beginning to be understood. There is still a lack of data on how long COVID affects the cardiovascular system. Against this developing backdrop, the interactions between acute and chronic COVID-19 infection, vaccination and the associated cardiovascular implications will need to be explored further in future research.

Second, the COVID-19 pandemic has impacted on cardiovascular service provision. The need to care for COVID-19 patients has shifted multiple care facilities’ resources away from cardiovascular patients to COVID-19 patients, thus affecting the timely diagnosis of cardiovascular conditions and also the follow-up of these patients. The need for heightened infection control measures has also made caring more challenging for cardiovascular patients. For instance, cardiac catheterization laboratories need to adopt more personal protective equipment use to guard against unexpected COVID-19 cases. Established ‘clean’ and ‘isolation’ areas will need to be adhered to while taking care of patients for infection control measures. The prolonged pandemic has also taken a toll on the mental health of healthcare providers. In a multinational study...
of 906 healthcare workers from five hospitals from India and Singapore caring for COVID-19 patients, a large proportion screened positive for anxiety, depression, stress and psychological distress. There is an urgent need to ensure the positive psychological well-being of the healthcare workers in this pandemic, given that COVID-19 is likely going to be prolonged.

Third, the COVID-19 pandemic is going to affect the training of healthcare professions to take care of cardiovascular patients. As there is an increasing need to care for COVID-19 patients, it is inevitable when systems are strained that there is less attention being paid to the training and teaching. Due to various movement restriction measures, there might be a need for educators to consider adapting their teaching practices to provide training via other means, such as using online platforms to deliver content, or teleconferencing for clinical meetings. Clinical examinations may be affected, and educators need to consider alternative modes of assessment while still ensuring a high standard of training. Educators need to ensure that trainees’ psychological wellbeing is taken care of during the pandemic as well and that there is enough personal protection equipment for them to feel safe.

India is in a unique position during this pandemic. Indian healthcare professionals are recognized to be of a high medical standard and can partake in the most advanced of medical care. As we observe the proceedings of the World Heart Day, let us not forget our commitment to the care of patients with cardiovascular diseases and strive to do our best despite whatever the pandemic may bring.

Conflicts of Interest: None.

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References

1. World Heart Federation. About – World Heart Day 2021. Available from: https://world-heart-federation.org/world-heart-day/about-whd/, accessed on August 5, 2021.

2. The Straits Times. Global covid-19 cases surpass 200 million as delta variant spreads. Available from: https://www.straitstimes.com/world/united-states/global-covid-19-cases-surge-200-million-as-delta-variant-spreads, accessed on August 5, 2021.

3. Ho JS, Tambyah PA, Ho AF, Chan MY, Sia CH. Effect of coronavirus infection on the human heart: A scoping review. Eur J Prev Cardiol 2020; 27 : 1136-48.

4. Chew NW, Sia CH, Wee HL, Benedict LJ, Rastogi S, Kojsono P, et al. Impact of the COVID-19 pandemic on door-to-balloon time for primary percutaneous coronary intervention - Results from the Singapore western STEMI network. Cire J 2021; 85 : 139-49.

5. Denning M, Goh ET, Tan B, Kanneganti A, Almonte M, Scott A, et al. Determinants of burnout and other aspects of psychological well-being in healthcare workers during the COVID-19 pandemic: A multinational cross-sectional study. PLoS One 2021; 16 : e0238666.

6. Chew NWS, Lee GKH, Tan BYQ, Jing M, Goh Y, Ngiam NJH, et al. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. Brain Behav Immun 2020; 88 : 559-65.

7. Kanneganti A, Sia CH, Ashokka B, Ooi SBS. Continuing medical education during a pandemic: An academic institution’s experience. Postgrad Med J 2020; 96 : 384-6.

8. Sia CH, Tan BY, Ooi SBS. Impact of the coronavirus disease 2019 pandemic on postgraduate medical education in a Singaporean academic medical institution. Korean J Med Educ 2020; 32 : 97-100.

9. Ho JS, Sia CH, Chan MY, Lin W, Wong RC. Coronavirus-induced myocarditis: A meta-summary of cases. Heart Lung 2020; 49 : 681-5.

10. Avila J, Long B, Holladay D, Gottlieb M. Thrombotic complications of COVID-19. Am J Emerg Med 2021; 39 : 213-8.

11. Cherian R, Poh KK. At the ‘heart’ of the COVID-19 outbreak: Early cardiac implications and mitigating strategies. Singapore Med J 2020; 61 : 373-4.

12. Montgomery J, Ryan M, Engler R, Hoffman D, McClennathan B, Collins L, et al. Myocarditis following immunization with mRNA COVID-19 vaccines in members of the US Military. JAMA Cardiol 2021. Doi:10.1001/jamacardio.2021.2833.

13. Lee CCE, Ali K, Connell D, Mordi IR, George J, Lang EM, et al. COVID-19-associated cardiovascular complications. Diseases 2021; 9 : 47.

14. Desk ITW. 14 Private Hospitals in Delhi Converted to COVID-Only Facilities. Here Is the List. India: India Today, Living Media India Limited; 2021. Available from: https://www.indiatoday.in/coronavirus-outbreak/story/delhi-private-hospitals-converted-to-covid-facilities-full-list-1790402-2021-04-13, accessed on August 5, 2021.

15. Ngiam JN, Tham SM, Vasoo S, Poh KK. COVID-19: Local lessons from a global pandemic. Singapore Med J 2020; 61 : 341-2.