COVID-19 Clinical Guidance for Cardiovascular Care

As COVID-19 evolves into a public health emergency, experts suggest that cardiovascular health should be prioritised in patients with comorbidities and cardiovascular care teams should be extra vigilant to ensure containment, mitigation and quick response.

The coronavirus epidemic was first reported in December 2019 and has become a global pandemic. Numerous countries have reported the presence of COVID-19. As of today, 114,045 cases of coronavirus have been confirmed worldwide with 4003 deaths.

Early reports indicate that patients with underlying comorbidity are at high risk for developing complications and death following COVID-19. Acute respiratory distress syndrome (ARDS) appears in about 20% of patients. There are also some concerns that the virus may also affect the heart.

Ealy results from China indicate that 16.7% of patients developed arrhythmias, 7.2% developed cardiac injury and 8.7% developed shock. These complication rates were much higher for patients needing ICU admission compared to those who were managed on the floor. The first reported cardiac death was a 61-year-old smoker who succumbed to ARDS, heart failure and cardiac arrest. Anecdotal reports suggest that some patients may have developed myocarditis similar to what has been seen with other viruses. In the 1918 influenza pandemic, the key cause of death were adverse cardiac events and surpassed pneumonia as a cause of fatality.

It is well established that many virus infections can affect the heart and experts suspect that coronavirus may be no different. Viruses are known to induce inflammation of the myocardium; while in a healthy patient this may not lead to an adverse outcome but in patients with ARDs, coronary artery disease or heart failure, the outcomes may be poor. Since many of the patients affected by coronavirus are elderly with comorbidity, they may be at risk for adverse cardiac events.

Other comorbidities like smoking, diabetes, hypertension, renal failure, and COPD may also increase the risk of cardiac death in COVID-19. During the SARS and MERS outbreak there was also concern about adverse cardiac events like acute myocarditis, acute MI and rapid onset CHF. In approximately 60% of MERS cases, presence of one or more pre-existing comorbidities resulted in a worse outcome. Some patients were also found to have subclinical diastolic left ventricular impairment.

Isolated reports from Wuhan, China indicate low ejection fraction on admission may be predictive of large mechanical dysfunction of the heart. Other anecdotal reports indicate that some patients with COVID-19 develop persistent tachycardia, sustained asymptomatic hypotension, and bradycardia.

Currently, there is no strategy to address the adverse cardiac events seen in COVID-19 except to manage the patient expectantly. Thus, based on limited reports, clinical guidelines from heart experts recommend that any patient with COVID-19 and the presence of diabetes, renal disease or cardiac disease should be closely monitored. Most experts suggest that reducing the risk factors for cardiac disease should be a priority. Patients should manage their diabetes, hypertension and any preexisting heart failure and discontinue smoking. The use of cardiac medications should be tailored to individual patients. Finally, patients should be urged to remain current on their vaccination status and follow up closely with their heart physician.

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