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## Impact of COVID-19 on Cardiovascular System

Rahul Hernot\*, Latasha Shonkla, Somnath Rana, Daiwakshi Shandil

L.R Institute of Pharmacy, Jabli Kyar Oachghat, Solan H.P 173223, India

\*Corresponding Author

### ABSTRACT

A Corona virus disease 2019 is the second pandemic of the 21st century. First case of SARS virus was firstly found in 2002 in Wuhan, China, SARS-CoV-2 has come to be a worldwide pandemic that has affected the lives of billions of people. Pre-present cardiovascular diseases seem to be connected with worse effect and elevated danger of death in sufferers with COVID-19, while COVID-19 itself also can result in myocardial damage, arrhythmia, and acute coronary syndrome venous thromboembolism. Potential drugs-disorder interactions affecting sufferers with COVID-19 and comorbid cardiovascular diseases also are turning into a serious difficulty. In this study, we summarize the modern expertise of COVID-19 from fundamental mechanisms to clinical perspective, focusing on the interplay between COVID-19 and the cardiovascular system. Angiotensin-converting enzyme 2 (ACE2) is the entry receptor for extreme acute respiratory syndrome coronavirus-2 (SARS-CoV-2). However, ACE2 is not simply a SARS-CoV-2 receptor, however it has additionally a crucial homeostatic characteristic regulating rennin-Angiotensin system (RAS), which is pivotal for both the cardiovascular and immune system. Therefore, ACE2 is the key link between SARS-CoV-2 infection, cardiovascular diseases (CVDs) and immune response. Susceptibility to SARS-CoV seems to be tightly associated with ACE2 availability, which in turn is determined by genetics, age, gender, and comorbidities. Excessive COVID-19 morbidity is due to uncontrolled and excessive immune reactions, which lead to acute breathing distress syndrome (ARDS) and multi-organ failure. The etiologic agent of COVID-19 can affect the heart, vascular tissues, and circulating cells via ACE2, the host mobile receptor for viral spike protein.

**Keywords:** Pandemic, Cardiovascular system, COVID-19, Inflammation, ACE2, SARS-CoV

