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INCIDENCE OF CARDIAC INVOLVEMENT IN COVID-19 PATIENTS

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ABSTRACT:

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus. SARS-CoV-2 caused COVID-19 has reached a pandemic level. COVID-19 can significantly affect patients' cardiovascular systems. First, those with COVID-19 and preexisting cardiovascular disease have an increased risk of severe disease and death. Mortality from COVID-19 is strongly associated with cardiovascular disease, diabetes, and hypertension. Second, therapies under investigation for COVID-19 may have cardiovascular side effects of arrhythmia

Keywords: COVID-19, diabetes, hypertension, myocarditis

INTRODUCTION:

Background: The widely variable clinical manifestations of SARS-CoV2 disease (COVID-19) range from asymptomatic infections to multiple organ failure and death. Among the organs affected is the heart. This does not only affect people who already have previous cardiovascular problems, but also healthy people. This is a reason not to overlook any symptoms or to perform targeted examinations, even if apparently unrelated to the heart, for quick recognition and timely therapy. *Aim of the study*: This review recapitulates the current state of knowledge on the potential mechanisms and manifestation of myocarditis in patients with COVID-19 infection. [1,2]

Cardiac injury in COVID-19 may result from the direct effects of the virus itself. In general, viral infections are one of the most common causes of infectious myocarditis. Evidence also suggests that common infections trigger acute coronary events and strokes. Following this vein, researchers have aimed to describe the mechanisms of COVID-19-mediated cardiac injury. The virus infects host cells through angiotensin-converting enzyme 2 (ACE2) receptors which can lead to pneumonia, acute myocardial injury, and chronic cardiovascular damage.ACE2 receptors, which are important in the cardiovascular and immune systems, are membrane-bound aminopeptidases. These receptors are highly expressed in the heart and lungs, and they have been confirmed to be the functional receptors for the novel coronavirus.These findings indicate that myocardial injury caused in COVID-19 might be ACE2 related. Given this mechanism of action, there has been substantial discussion and controversy on the use of antihypertensive ACE inhibitors in COVID-19-infected patients. Updates from the American heart association suggest that, based on mortality data, ACE inhibitors should be maintained or initiated in patients with myocardial infections, heart failure, or hypertension.[1,2,3]

The effect of COVID-19 on myocardial function is not well established, nor is its effects on the outcomes after treatment of myocardial and associated illnesses. Based on what has been discovered and hypothesized about cardiac involvement in COVID-19, there is a need for autopsies and rigorous gross, histological cardiac assessments, and more basic research into the effects of COVID-19 on myocardial function and other associated clinical conditions such as diabetes.

Therefore, this comprehensive review of the extra-respiratory manifestations of COVID-19 is intended to help clinicians better understand the range of clinical presentations associated with SARS-CoV-2 infection, allowing the consideration of COVID-19 in differential diagnoses. A screening test for SARS-CoV-2 should be performed when patients have these extra-respiratory manifestations. In addition, clinicians should be alerted to the adverse effects of anti-SARS-CoV-2 agents that can mimic the extra-respiratory manifestations of COVID-19. Moreover, some extra-respiratory manifestations, such as ocular and gastrointestinal involvement, may be caused by direct invasion of SARS-CoV-2.

CONCLUSION:

Cardiac risk factors have been identified that predict the susceptibility to COVID-19 infection and illness severity. According to the Centers for Disease Control and Prevention, elderly patients with comorbidities are at a higher risk to become infected with COVID-19, especially those with coronary heart disease, hypertension, or diabetes

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