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Review article

Cardiovascular causes of death during Covid -19

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ABSTRACT

Coronaviruses are RNA viruses that are related to one another. COVID-19 is one such virus from the same family. It is a massive virus that infects humans and causes respiratory problems. It is very contagious and has been shown to be lethal to humans. The first case of COVID-19, also known as SARS-COV-2, was discovered in Wuhan, China. In December 2019, the globe was confronted with a new pandemic situation, which has since expanded globally. The situation has gotten worse in recent years. Aside from respiratory illnesses, there are a number of other conditions that have contributed to patients' higher mortality. Cardiovascular problems are one such risk. Inflammatory effects on the heart have also been mentioned, in addition to respiratory issues. Hypoxia, hypertension, myocardial injury, myocarditis, and other cardiac diseases are among the major cardiac consequences documented. SARS-COV-2 is more likely to infect those with cardiovascular diseases.

Kaywords: Inflammatory effects, myocarditis, infect, abnormalities, Covid patients, Myocardial damage

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INTRODUCTION

This virus has had a significant impact on people's lives. It has sickened hundreds of thousands of people globally and continues to kill a considerable number of individuals. Countries are battling to save the lives of afflicted patients. Many attempts have been taken to control its spread. One of the most difficult steps used to reduce its spread was complete lockdown. People are experiencing a variety of issues as a result of the pandemic, including travel restrictions, school and college closures, poor people going hungry and increasing unemployment.[1]

Although the clinical symptoms of COVID-19 infection in people with cardiac problems are unknown, evidence from patients with end-stage heart failure suggests that the virus can cause or exaggerate cardiac damage. People who already have cardiovascular problems are at a higher risk of contracting the virus.[2]

In terms of the virus's impact, our heart. It infects cardiac cells by the same receptor that infects lungs. According to a recent investigation, the virus can also cause cardiac problems. The virus can divide quickly inside cardiac cells, causing alterations in the heart's ability to beat after just three days. Hypertension is one of the most common causes. Myocardial damage, myocarditis, acute myocardial infarction, heart failure, dysrhythmias, and venous thromboembolic events have all played a role in covid-19's mortality graph.[3]

Myocarditis

Myocarditis is an inflammatory disease of the heart muscle that can develop alone or as part of a larger systemic infection, immunological response, or autoimmune disorder. A total of 31 studies were included, including 51 patients; 12 cases of proven myocarditis and 39 cases of probable myocarditis were included. Fever, shortness of breath, and chest pain were some of the symptoms that developed. The ECG of a patient diagnosed with myocarditis in covid-19 showed certain alterations. The ECG revealed ventricular tachycardia as well as nonspecific ST segment and T wave alterations.[4]

Hypertension

Hypertension is a condition in which the blood pressure against the artery wall is too high.

Hypertension affects the vast majority of people over the age of 60. They are extremely vulnerable to infection. High rates of diabetes, hypertension, and cardiovascular disease among hospitalised patients were reported in the first reports of COVID-19

in Wuhan, China. In hypertensive patients, ARBs had a reduced risk of death than other antihypertensive medications.[5]

A total of 472 consecutive cases were enrolled from 51 COVID-19 certified tertiary care hospitals (median age was 43 [32–53.5] years, and 53.0% of the men were male). There were 101 (21.4%) individuals who had comorbidities, which included hypertension (15.0%).[6]

MYOCARDIAL INJURY

In individuals with coronavirus illness, elevated troponin levels have been shown to predict mortality (COVID-19). Myocardial damage is more common in those with CVD than in people who don't have it. Troponin increase is linked to an increased risk of mortality in COVID-19 individuals admitted to the hospital.[7]

CARDIAC ARREST

A loss of cardiac function, respiration, and consciousness that occurs suddenly and unexpectedly.

People with COVID-19 are more likely to die from sudden cardiac arrest. A case study of a person who suffered a sudden cardiac arrest is shown below.8

CASE STUDY

A 50-year-old woman was admitted to our clinic with fever, chills, and a dry cough. She had no known history of specific illness or drug use. Her blood pressure (BP) was 130/80 mmHg, her pulse rate (PR) was 80/min, her body temperature (BT) was 37.2°C, and her oxygen saturation (in ambient air) was 95 percent when she was admitted. During the initial inspection, there were no aberrant results. The ECG at the start was normal (Figure 1A). She was treated with levofloxacin, vancomycin, hydroxychloroquine, lopinavir/ritonavir, and heparin for prophylaxis of deep venous thrombosis at standard doses due to pulmonary involvement seen on a chest CT scan (Figure 2A). During the hospitalization, there were no electrolyte abnormalities. The treating physician chose to discharge the patient on the fifth day of hospitalization and continue the balance of the treatment at home. The patient went into cardiac arrest while being discharged and died due to poor CPR.

As a potential medicinal agent, hydroxychloroquine

The antimalarial drug chloroquine is used to treat malaria. Hydroxychloroquine is a chloroquine analogue. In addition to malaria, hydroxychloroquine is used to treat autoimmune illnesses such systemic lupus erythematosus (SLE) and rheumatoid arthritis. Hydroxychloroquine (HCQ) is a viable treatment option for Coronavirus infection in 2019.[9,10]

CONCLUSION

With the growing number of patients (now 17,997,267 total covid-19 sufferers), this virus is proving devastating to humanity. People with cardiovascular diseases are at a higher risk of infection, and the mortality rateis steadily rising. Everyone should be concerned about their own health. One of the most common concerns seen in Covid patients is hypertension.

Sudden cardiac death, even after recovery from Covid, is becoming very common.

As a result, we may assume that covid-19 has an effect on the heart, and cardiovascular disease is one of the leading causes of death.

REFERENCES

1. Manish Bansal, 2020. Cardiovascular disease and COVID-19, Diabetes & Metabolic Syndrome: Clinical Research &Reviews, Volume 14, Issue 3, Pages 247-250, ISSN 1871-4021.
2. Vishwa S P, Ravi P K, Ranjit Ambad, Prakash K, 2020. Effect of COVID 19 Affecting Geriatric Patients. Int J Cur Res Rev, Vol 12 Issue 182-187.
3. Basu-Ray I, Almaddah Nk, Adeboye A, 2021. Cardiac Manifestations of Coronavirus (COVID-19).
4. Brit Long, William J Brady, Alex Koyfman, Michael Gottlieb, 2020, Cardiovascular complications in COVID-19, The American Journal of Emergency Medicine, Volume 38, Issue 7, Pages 1504-1507.
5. Babapoor-Farrokhran, S, Gill, D, Walker, J, Rasekhi, R T, Bozorgnia, B, Amanullah, A, 2020. Myocardial injury and COVID-19: Possible mechanisms, Life Sciences, 117723.
6. Kochi AN, Tagliari AP, Forleo GB, Fassini GM, Tondo C, 2020. Cardiac and arrhythmic complications in patients with COVID-19, J Cardiovasc Electrophysiol 31:1003–1008.
7. Bader F, Manla Y, Atallah B, 2021. Heart failure and COVID-19. Heart Fail Rev 26, 1–10.
8. Sabatino J, De Rosa S, Di Salvo G, Indolfi C, 2020. Impact of cardiovascular risk profile on COVID-19 outcome, a meta-analysis, PLOS ONE 15(8): e0237131.
9. Mattioli AV, Ballerini Puviani, M, Nasi, M, 2020. COVID-19 pandemic: the effects of quarantine on cardiovascular risk, Eur J Clin Nutr 74, 852–855.
10. Paramasivam A, Priyadharsini JV, Raghunandha kumar S, 2020. A novel COVID-19 and its effects on cardiovascular disease, Hypertens Res 43, 729–730.

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