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ORIGINAL ARTICLE

Cardiac Symptoms in Disguise; The Potential Effects of Covid-19 on Heart Tissues and the need for Warning Cardiologists

MUHAMMAD BILAL[1], NAGINA PERVEEN[1], HINA BATOOL[1], MUHAMMAD AMMAR ARIF[2]
[1]*Faisalabad Medical University*
[2]*Fatima Memorial Hospital, Lahore*
Correspondence to: Muhammad Bilal, Email: na8769563@gmail.com

ABSTRACT

Healthcare professionals throughout the world face a brand-new issue as SARS-CoV-2, a newly discovered coronavirus, spreads around the world. The study's primary goal is to find out how COVID-19 affects cardiac patients, as well as any potential effects on heart tissue and whether cardiologists should be notified. Faisalabad Medical University conducted this descriptive investigation between September 2021 and December 2021. Google Scholar, PubMed, and Web of Science articles published up to June 20th, 2021, were used in this inquiry. Also checked for additional relevant research were referenced references from previously published articles and reviews. People with pre-existing cardiovascular disease (CVD) have a greater vulnerability to contracting COVID-19, and as a result, their condition is more severe, and their prognosis is worse. Several risk factors for cardiovascular disease (CVD) hurt the health of these individuals, but they do not appear to increase the chance of infection. The prevalence of diabetes, cardiovascular disease, and hypertension in 1527 COVID-19 patients was 9.7 percent, 16.4 percent, and 17.1 percent, respectively, according to a meta-analysis of six published studies from China. Patients with COVID-19 are more likely to have pre-existing cardiovascular disease (CVD) or develop new heart dysfunction throughout their illness, based on the illness's striking clinical presentation and its considerable burden.

Keywords: COVID-19, CVD, Patients, Effect

INTRODUCTION

An unprecedented challenge has been provided to the worldwide healthcare community by the creation of a novel coronavirus, formally known as SARS-CoV-2. A widespread pandemic was inevitable as a result of this virus' high infectivity, ability to spread even during the non-symptomatic phase, and relatively mild severity. On December 8, 2019, a case of coronavirus disease 2019 (COVID-2019) was reported in the Chinese province of Hubei. There have been 266073 confirmed cases and 11184 deaths since then, in fewer than three months, in 177 countries/areas/territories throughout the world. [Details may be found in the box below].

As well as the typical cold, this virus has been associated with more serious respiratory infections such as ARDS and fulminant pneumonia. COVID-19, like any other respiratory virus, affects persons with cardiovascular disease or risk factors. [3, 4] COVID-19 has been proven to aggravate the existing cardiovascular disease and could cause new cardiac issues.

The extrapulmonary impacts of the COVID-19 pandemic have become apparent in its second year. For those infected with SARS-CoV-2 (severe acute respiratory syndrome-Coronavirus 2), a sudden onset of symptoms in the cardiovascular system is not uncommon. Individuals with COVID-19 had worse clinical outcomes than other patients (e.g., hypertension, diabetes, and obesity) who had cardiovascular disease and risk factors [4]. In 8–62% of COVID-19 patients who were hospitalized, elevated troponin (cardiac troponin) levels showed chronic heart injury, which has been linked to higher disease severity, mechanical ventilation, and death [5, 6].

Compared with earlier coronavirus outbreaks, SARS-CoV-2 has different global epidemiology as well as cardiovascular effects. There were 8098 persons infected with SARS-CoV across the world at the time of the pandemic's onset in Guangdong province, China, and 774 of them died. Although much research has been done on the acute cardiovascular effects of COVID-19, less research has been done on the post-acute cardiovascular symptoms. The risk and 1-year burden of a set of pre-specified cardiovascular events were estimated using national healthcare datasets from the US Department of Veterans Affairs [7–8].

They shared the same dangers and obligations, which varied in intensity based on their level of care (non-hospitalized, hospitalized, and admitted to intensive care). Survivors of acute COVID-19 have a large risk of cardiovascular disease and a significant burden of cardiovascular disease [9,10].

For the study, discovering if COVID-19 affects cardiac patients is the main aim, as well as assessing whether heart tissues may be affected by COVID-19 and whether cardiologists should be informed.

MATERIAL AND METHODS

From September 2021 to December 2021, researchers from Pakistan's Faisalabad Medical University conducted a descriptive study. We conducted a systematic search on Google Scholar, PubMed, and Web of Science for publications published up to June 20th, 2021, to conduct this study. Manually checking the cited references of the recovered articles and prior reviews, as well as the retrieved publications themselves, led to the discovery of more relevant research.

If there were any duplications, they were eliminated by creating an extensive bibliographic database. The title, abstract, and full text of each manuscript was used to determine whether it was eligible for consideration. In this review, we included nearly all research that specifically addressed the function of dietary supplements. The study

reviews the impact of COVID-19 on cardiovascular illness (research site, year of publication, and study design).

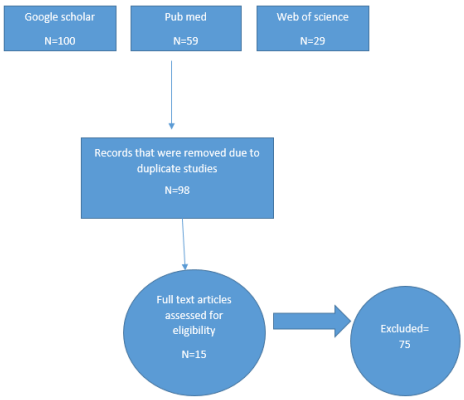

Figure 3: Flow of information through the different phases of a systematic review.

RESULTS

188 studies were obtained from PubMed, Google Scholar, and Web of Science databases, according to the researchers. In the end, 90 full-text papers were screened for additional examination, while another 75 were excluded because they did not match the study's inclusion criteria. Only 15 publications passed the requirements for inclusion in our study.

Patients with heart disease (CVD) have a higher chance of contracting COVID-19 and are more likely to have a severe condition with poor outcomes. Even though these risk factors do not appear to raise the risk, they have a negative impact on the prognosis of these people. In a meta-analysis of six published studies from China, diabetes, cardiovascular disease, and hypertension were found in 9.7%, 16.4%, and 17.1% of COVID-19 patients, respectively. As a result, whereas this cohort had a comparable prevalence of diabetes and hypertension as the overall Chinese population, it had a significantly greater incidence of cardiovascular disease. It's worth noting that the existence of comorbidities including diabetes, cardiovascular disease, and hypertension was linked to a higher chance of severe illness or admission to an intensive care unit, suggesting that these conditions have an influence on the patient's prognosis [12].

Management implications: If a patient with COVID-19 presents with cardiovascular difficulties or has a pre-existing cardiovascular illness, the general treatment guidelines are the same as for any other patient [13].

But there are a few critical points to keep in mind:

- To protect ourselves from infection while caring for these patients, it is our utmost duty as caretakers. As a result, all health care providers treating COVID-19 patients must always follow the necessary safety precautions. Every one of them should get instruction on how to properly put on, operate and remove personal protective equipment, by the current practice recommendations [14].
- A large proportion of COVID-19 patients will require time in the intensive care unit (ICU) and/or emergency cardiac care, therefore hospitals must be ready. All COVID-19 patients who have cardiovascular difficulties should be recognized and treated using proven and well-known protocols for rapid diagnosis, triage, and isolation. These patients must be quickly triaged and treated, not only to ensure that healthcare resources are effectively utilized but also to prevent caregiver exposure. As a result of COVID-19, there have already been concerns about delays in the administration of urgent cardiac care. Efforts should be made to minimize these delays [15].

CONCLUSION

There is a strong likelihood that many individuals with COVID-19 will have pre-existing cardiovascular disease or develop new-onset cardiovascular disease throughout the illness. Translated into English: [Original Italian translation] People of color, those who are neglected and vulnerable, the elderly, and those with pre-existing cardiovascular disease, among other groups, have been particularly hard hit by this global health crisis.

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