

# Myocarditis associated with Covid-19 disease: a systematic review of published Case reports and Case series

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## Abstract

Background: Covid-19 is an extremely contagious illness caused by the severe acute respiratory syndrome (SARS-CoV-2) virus. Although this disease primarily involves pulmonary tissue, rapidly advancing research has established cardiac involvement in Covid-19 patients. Objective: This systematic review article aimed to compile and illustrate clinical characteristics, diagnostic findings, management, and outcomes manifesting in myocarditis linked with Covid-19. Methods: A literature search was accomplished for published eligible articles with MEDLINE/PubMed and Embase databases. All eligible case reports and case series were included from around the world without any language restrictions. For this review, inclusion criteria were laboratory-confirmed SARS-CoV-2 infection cases reporting a diagnosis of acute myocarditis. Results: Data from 41 studies describing myocarditis in 42 Covid-19 patients was obtained. The median age of these patients was 43.4 years, with 71.4% of them being male. Fever was the most prevalent presenting symptoms seen in 57% of patients. Hypertension was the most pervasive comorbidity accompanying these patients. Cardiac biomarkers troponin and Brain natriuretic peptide (BNP) were raised in almost 90% and 87% of patients, respectively. Electrocardiogram findings were Non-specific and included ST-segment and T-wave changes. The most prevalent histopathological feature appreciated was diffuse lymphocytic inflammatory infiltrates. Antivirals and corticosteroids were the most frequently used medications. About 38% of patients also needed vasopressor assistance. Out of 42 patients, 67% recovered, and eight died. Conclusion: Due to the risk of a sudden worsening of patients conditions and myocarditis association with considerable mortality and morbidity, a knowledge of this cardiac complication of Covid-19 disease is crucial for healthcare professionals.

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**Running head: Myocarditis in SARS-CoV-2 infected patients**

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None

## Disclosure

Authors have no potential conflicts of interest to disclose.

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