



STUDY OF CLINICAL OUTCOME AND CARDIOVASCULAR SEQUELAE IN COVID-19 PATIENTS

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ABSTRACT

Cardiovascular complications in COVID-19 include deep vein thrombosis, stroke, angina, myocardial infarction, heart failure and cardiogenic shock. ECG changes including sinus tachycardia, sinus bradycardia and atrial fibrillation. Incidence of cardiovascular complications is directly linked to severity of disease which in turn correlate with inflammatory markers including CRP, LDH, Ferritin, D Dimer and IL-6. Raised inflammatory markers also suggest poor outcome of patients. Therefore it is advisable to do inflammatory markers in admitted patients for management. Followup study at 3 and 6 months revealed new onset cardiovascular complications while no new complications were documented at 12 months follow up. Thus regular health checkup is recommended post COVID infections for atleast 6 months.

KEYWORDS : COVID19, cardiovascular complications , ECG changes, inflammatory markers, follow up

INTRODUCTION

The first case of pneumonia caused by SARS COVID was reported in Wuhan, Hubei Province China on Dec31,2019.¹In January 2020, WHO recommended "2019 novel coronavirus" (2019-nCoV) as the provisional name for the virus. On 11 February 2020, the International Committee on Taxonomy of Viruses adopted the official name "severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2). On March 11,2020, WHO declare it as a pandemic. As of 3 August 2022, there have been 57,70,18,226 confirmed cases of COVID 19 including 64,01,046 deaths reported to WHO. In India, from 3 January 2020 to 3 August 2022, there have been 4,40,67,144 confirmed cases of COVID19 with 5,26,477 deaths, reported to WHO. Beside respiratory manifestations, cardiovascular involvement in COVID 19 patient is well documented. COVID 19 infection is associated with Acute myocardial injury and dysfunction which can lead to multi system organ dysfunction and death in some of COVID-19 patients.²Clinical manifestations varies from asymptomatic patients to severe arrhythmias and sudden cardiac death.³Various lab parameters are well established to diagnose cardiovascular diseases, to assess severity of infection and poor prognosis in COVID-19 patients.

Table 1: Comparison of incidence of cardiac complications in study population

| | during admission | at 3 months | at 6 months | at 12 months |
|-----------------------|------------------|-------------|-------------|--------------|
| Myocardial Infarction | 11 | 4 | 0 | 0 |
| Heart Failure | 54 | 0 | 0 | 0 |
| Cardiogenic Shock | 38 | 1 | 0 | 0 |
| Myocarditis | 3 | 0 | 0 | 0 |
| Angina | 35 | 12 | 0 | 0 |

The above table shows comparison of incidence of various cardiac arrhythmias at 0, 3, 6 and 12 months incidence of myocardial infarction during admission were 11, while at 3 months were 4 incidence of heart failure during admission were 54, at 3 months were 0, incidence of cardiogenic shock during admission were 38, at 3 months were 0, incidence of myocarditis during admission were 3, incidence of angina during admission were 35, at 3 months were 12, at 6 months were 0.

Figure - 1
Vascular Complications

Figure 1: Comparison of incidence of vascular complications in study population

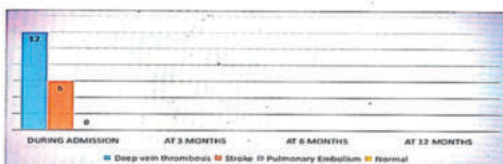


Figure 2 Ecg Changes

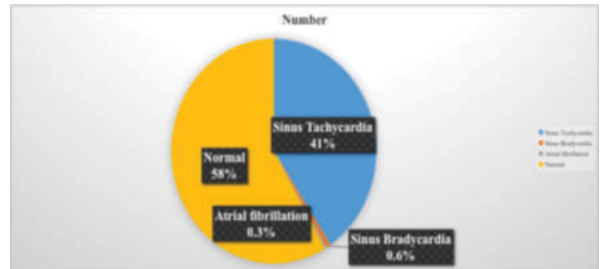


Figure 2: Incidence of ECG changes in study population

Case Series

Total study participants were 302. 196(64.9%) were males, 106(35.1%) were females. According to age group, 26/302 (8.6%) were <30 years, 88/302(29.1%) were 30-44 years, 99/302 (32.8%) were 45-59 years, 89/302(29.5%) were belong to 60 years and above. According to severity, 146/302(48.3%) were mild severity, 83/302(27.5%) were moderate severity and 73/302(24.2%) were severe. Based on clinical outcome, 54/302(17.9%) were death and 248(82.1%) were clinically cured among the study population.

CONCLUSIONS

The novel corona virus infection is associated with significant mortality and morbidity. Rise in various inflammatory markers is associated with severity of illness. Incidence of cardiovascular events in covid patients were documented. Till 6 months following covid infection, there is significant risk for cardiovascular events. It is concluded that physician should strongly advised various inflammatory markers to assess the severity of disease and counsel covid-19 patients to come for regular follow up for atleast 6 months to assess any cardiovascular sequelae due to covid-19 infection.

REFERENCES:

- 1 <https://www.who.int/emergencies/disease-outbreak-news/item/2020-DON229>
- 2 <https://www.uptodate.com/contents/covid-19-myocardial-infarction-and-other-coronary-artery-disease-issues/abstract/17>
- 3 Citation: European Cardiology Review 2020;15:e66. DOI: <https://doi.org/10.15420/ocr.2020.23>