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A four-month follow-up study of Cardiac performance in patients hospitalized with COVID-19 in a Tertiary Care Government Medical Hospital

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Purpose: Myocardial injury is one of the most frequently observed injury in patients hospitalized with coronavirus disease 2019 (COVID-19) pneumonia. Cardiac abnormalities ranging from elevations of cardiac necrosis biomarkers to cardiac dysfunction associated with myocarditis has been reported during the acute COVID-19 phase. Not much information is available on late cardiac manifestations in patients who have recovered from the acute COVID-19 illness. Our purpose is to present and quantify the extent of alterations in cardiac function in patients hospitalized 4 months earlier for COVID-19 infection.

Methods & Materials: A prospective echocardiographic evaluation was conducted of 39 patients hospitalized 4±1 month earlier for a laboratory-confirmed and symptomatic COVID-19. Thorough analysis of risk-factors was noted using a pre-prepared questionnaire. Echocardiographic measurements and respective cardiac investigations were analyzed using inferential and sensitivity analysis.

Results: Of the 39 patients (mean age 54 ± 11 years, 73% male), twenty-seven (69%) had pre-existing cardiovascular risk factors (systemic hypertension, diabetes, or dyslipidemia), and four patients (10.3%) had a known prior myocardial infarction (MI). Seventeen patients (43.6%) experienced myocardial injury during the index COVID-19 hospitalization as identified by a rise in cardiac troponin levels. Four months later, 71.8% of patients still reported clinical symptoms including exertional dyspnea for 69%. Under resting condition, echocardiographic measurements were indifferent between between patients with versus without myocardial injury during the acute phase of COVID-19 infection. On the contrary, low-level exercise (25W for 3 min) showed a significant increase in the average E/e’ ratio (P < 0.01) and the systolic pulmonary arterial pressure (P < 0.05) in patients with myocardial injury during the acute COVID-19 phase. Sensitivity analyses showed that these left ventricular diastolic markers changed were observed irrespective of pre-existing cardiovascular risk factors or established cardiac diseases further cementing that the SARS-CoV-2 infection was the primary cause.

Conclusion: Four months after the acute COVID-19 phase, statistically significant cardiac diastolic abnormalities were observed in patients who experienced myocardial injury but not in patients without cardiac involvement.

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Rare cases of systemic phaeohyphomycoses caused by Bipolaris species as a Post SARS-COV 2 sequelae

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Purpose: The deadly second wave of COVID-19 brought an unprecedented rise of cases of associated invasive fungal infections. In this study we present two rare cases of systemic phaeohyphomycoses by Bipolaris species as a Post SARS-COV 2 sequelae, which may usually be neglected as contaminants.

Methods & Materials: Retrospective study of 1150 specimens received from patients with a high index of clinical suspicion of invasive fungal infections from April 2021 to June 2021 to identify cases of invasive phaeohyphomycoses among post COVID patients. Diagnosis of phaeohyphomycoses was established on microbiological evidence including microscopy and culture, and radiological evidence along with supporting clinical features. The diagnosis of phaeohyphomycoses was confirmed when dark pigmented thin septate hyphae with or without spores were demonstrated in aseptically aspirated fluid or tissue specimen with pure culture isolate of velvety dark, brownish black flat colonies on Sabouraud dextrose agar at 25°C.

Results: During the study period, two cases were confirmed as invasive phaeohyphomycoses caused by Bipolaris spicifera phenotypically. The first case was of invasive fungal sinusitis and second of invasive pulmonary phaeohyphomycoses. Overall incidence rate was 0.55% (2/364). Both cases were post COVID, with history of COVID-2-3 weeks before current presentation and hospitalisation with oxygen support for the same, uncontrolled diabetes mellitus (HbA1C: 11 & 8 respectively), and hypothyroidism. First case was initially treated as of mucormycosis, considering her clinical presentation and high index of suspicion with several similar cases reported in our area. He was managed with Amphotericin B along with surgical debridement. Second case was suspected as case of invasive pulmonary aspergillosis and was managed with voriconazole initially and later started on itraconazole after laboratory confirmation. Due to initial false diagnosis in our cases, patients were subjected to long course of amphotericin B and voriconazole respectively, whereas it could have been managed with itraconazole which has far lesser side effects.

Conclusion: High index of suspicion is required to confirm invasive phaeohyphomycoses as dematiaceous fungi are often contaminants or commensals. Correct and timely diagnosis is necessary for adequate management of invasive phaeohyphomycoses cases.

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