Cardio-COVID clinic – a one-center experience

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Background: Persistent symptoms affect a relatively large portion of coronavirus disease (COVID) survivors. Hence, specific clinics had been established in order to better characterize and manage this emerging entity of Post-COVID, among them our Cardio-COVID Clinic, which is dedicated to the cardiovascular (CV) aspects of the phenomenon.

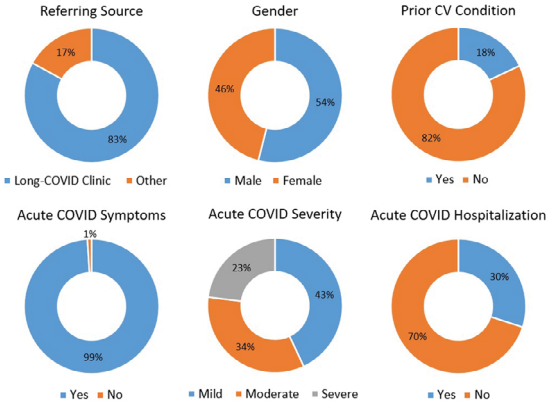
Aim: To present the experience of our Cardio-COVID Clinic.

Methods: Included in this report are 76 adult patients seen at the clinic between June 2020 and March 2021, who have recovered from a polymerase chain reaction (PCR)-confirmed COVID, and who were suspected by their referring physicians to experience ongoing cardiac sequelae. All participants underwent a structured assessment by a single cardiologist, which consisted of history taking, physical examination (PE), electrocardiogram (ECG), trans-thoracic echocardiogram (TTE), and further tests as deemed appropriate, including any combination of Holter, ischemic provocation test, cardiopulmonary exercise test (CPET), cardiac magnetic resonance (CMR), and cardiac computed tomography (CCT).

Results: Initial visits occurred within a median of 131 days after diagnosis. Most participants (83%) were referred from our general Long-COVID Clinic. About half were males, and the mean age was 53 years. 18% of participants had prior CV conditions, and the majority (72%) had at least one CV risk factor, mostly dyslipidemia. Nearly all participants experienced a symptomatic acute illness, which was graded according to the National Institutes of Health (NIH) criteria as severe in 23% of the study cohort. As for Post-COVID, late symptoms were present in 97% of patients, the most common being dyspnea (57%). While PE was unremarkable in all but 3 patients who exhibited murmurs, ECG findings were revealed in 45% – mostly non-specific ST-T changes (31%) and conduction abnormalities (14%) – and TTE aberrations were discovered in 28% – including pericardial effusion (24%), reduced left ventricular ejection fraction (LVEF) (5%), grade 2 diastolic dysfunction (3%), moderate and up valvular dysfunction (1%), and systolic pulmonary hypertension (1%); right ventricular function was universally normal. Upon conclusion of the work-up, CV diagnoses were made in 8 (11%) patients – including myocarditis (4), myopericarditis (1), inappropriate sinus tachycardia (1), chronotropic incompetence (1), and an aberrant coronary (1). Of note, CPET and CMR had the highest diagnostic yield, in light of 57% positive results on each – followed by CCT, Holter, and provocation test. Interesting as well, among those with abnormal CMR findings, 40% had normal ECG's and TTE's. Also, none of the CV restraints on CPET translated to provocation test anomalies.

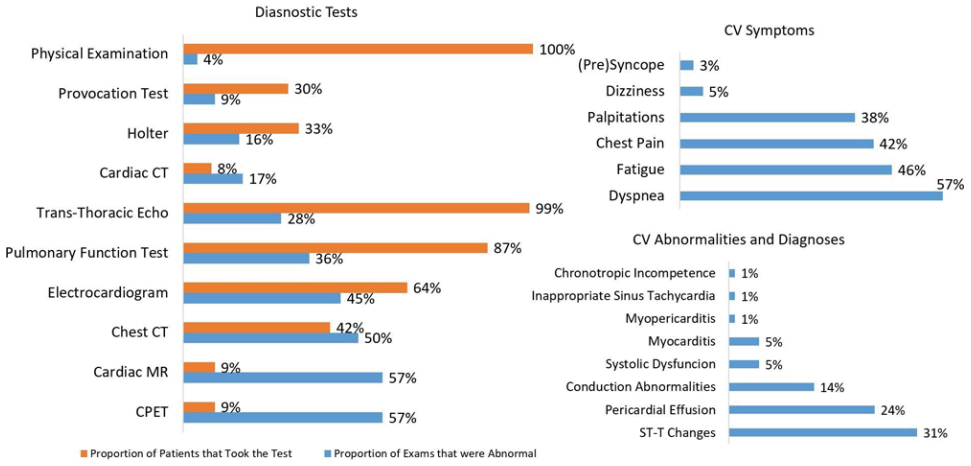
Conclusion: CV symptoms of Post-COVID are highly prevalent, but signify actual CV disease only in a minority of patients. Further research is needed that will help identify predictors for CV morbidity and define optimal clinical pathways.

Figure 1: Baseline Characteristics (N=76)



COVID = coronavirus disease; CV = cardiovascular

Figure 2: Post-COVID Findings (N=76)



COVID = coronavirus disease; CPET = cardiopulmonary exercise test; CT = computed tomography; CV = cardiovascular; MR = magnetic resonance