Pragmatic observations from a post-COVID-19 cardiac evaluation register: prevalence of cardiological alterations from a basic diagnostic sequence and contribution of the clinical hystory

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Introduction: The prevalence of cardiological sequelae in patients recovered from COVID-19 varies in different reports. This may be due to the population diversity studied or to the complementary methods on which the diagnosis was based.

Objective: 1) To determine the prevalence of "de novo" cardiological alterations (DN) in the population recovered from COVID-19 using a basic cardiological evaluation sequence. 2) To evaluate the contribution of the clinical history (CH) in the detection of DN.

Methods: Patients (pts) with COVID-19, PCR (+) were included. The pts attended an ambulatory consultation office at least 30 days after discharge from COVID-19. The evaluation was performed in a stepwise manner: first Interview: CH, physical examination (PE), and EKG; second Interview: routine laboratory test, C-reactive protein, echocardiogram and cardiac biomarkers. Other complementary studies (Holter, RMI, CCG) were requested according to previous findings. The diagnosis of DN (by PE, EKG or echocardiogram, alone or with the addition of other methods) was defined as the appearance of cardiological alterations in patients with no pre-existing known heart disease or the progression of a known cardiac disease. The prevalence of DN is described. Sensitivity, specificity and predictive value of CH for DN are reported.

Results: A total of 246 pts were evaluated with the first interview (age: 52±13 years; women: 47.8%; caucasian: 60.6%; overweight: 79%; some pathological history: 71.5%; previous heart disease: 15.4%; hospitalization during the acute phase of COVID: 78.8%; mild Covid: 37%, moderate: 39%, severe: 24%; time between discharge and post-COVID evaluation: 68±42 days). DN were detected in 62 pts: rhythm disturbances: 41 (sinus tachycardia: 23 (18 isolated), sinus bradycardia: 3, supraventricular arrhythmia: 6, ventricular arrhythmia: 14); conduction disturbance: 10, ventricular dysfunction: 20 (12 de novo, 8 progression). Specific diagnoses: myocarditis: 6, coronary artery disease: 5, acute mitral insufficiency: 1. In 16 pts (6.5%) DN had clinical relevance. Six of them (2.4%) required hospitalization. In previously healthy pts with mild COVID, only rhythm disorders were detected in 3 pts. Se, Sp and PV of the CH is shown in Table 1. Eighteen Holter monitoring tests (5 +), 9 MRIs (5 +), 4 CCGs (2 +) were performed.

Conclusions: 1) Using a basic cardiac diagnostic sequence, at least 30 days after discharge, a quarter of post-COVID patients had "de novo" cardiological findings. However, a small percentage became clinically relevant. The causal relationship of DN with COVID-19 cannot be unequivocally asserted. Previously healthy patients have low prevalence of cardiac findings detected with a basic diagnostic sequence.

2) The data obtained from the clinical history have a low positive predictive value.

	Sensitivity	Specificity	(+) PV	(-)PV	Accuracy
Any medical condition	0,81	0,31	0,29	0,83	0,44
Previous Heart Disease	0,22	0,87	0,37	0,76	0,70
Mild Covid	0,37	0,63	0,25	0,74	0,56
Moderate Covid	0,37	0,60	0,24	0,73	0,54
Severe Covid	0,27	0,77	0,29	0,75	0,64
Intra-covid cardiologic complication	0,33	0,87	0,47	0,79	0,73
Current symptoms (yes)	0,84	0,26	0,29	0,83	0,41
Potentially cardiologic symptoms (dyspnea, palpitations, angor)	0,52	0,61	0,32	0,78	0,59

Table 1. Values of selected clinical history data