

Syncope: a worrisome presenting symptom during the first wave of COVID-19 in Italy

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Background: COronaVirus Disease 19 (COVID-19) pandemic is a global health emergency. Since the first reported cases in Asia, the virus has now spread worldwide. Given its high contagiousness, one of the greatest challenges is early detection of infected patients. People affected by COVID-19 have had a wide range of presenting symptoms, from very mild to severe, including fever, cough, shortness of breath, gastrointestinal upset, anosmia and ageusia among others. Syncope as the presenting symptom of COVID-19 has been reported in case series or small sample size retrospective studies with variable results in terms of incidence, characteristics and outcomes.

Purpose: The aim of the present analysis is to investigate all consecutive patients with COVID-19 who presented with syncope during the first wave of the pandemic to a high-volume Emergency Department (ED) in Italy.

Methods: A total of 569 patients diagnosed with COVID-19 by positive nose and throat swab and admitted to the hospital between February 20th, 2020 (day of first reported COVID-19 case in Italy) and April 23rd, 2020 were retrospectively evaluated.

Results: Syncope has been reported as the initial symptom which prompted medical attention in 46 out of 569 patients (8%). Mean age of patients presenting with syncope was 72±15 years, 28 were males. Baseline patients' clinical characteristics are reported in Table 1. In 18 out of 46 patients (39%) syncope was an isolated finding, being fever and cough the two most commonly associated symptoms. Arrhythmic etiology was

excluded since no arrhythmia was observed at device interrogation or with ECG/prolonged heart monitoring during hospitalization. No significant abnormalities were present at baseline ECG. At the time of admission, all patients were normotensive, median O2 saturation was 94.5%, median D-dimer 362 ng/ml. One-third of the patients presenting with syncope had a complicated clinical course with quite rapid deterioration requiring non-invasive ventilation (30%) and intensive care unit admission with intubation (11%).

In our group of consecutive patients with COVID-19 who presented with syncope, the mortality rate was surprisingly high, 15/46 (32%), compared to the mortality rate of the COVID population admitted to our hospital with other symptoms 93/523 (18%), p=0.023. Six out of 15 patients died in the ED, mainly during their first day of hospitalization. The other 9 had a quite rapid deterioration in the following days and died within a week (median syncope-to-death time was 7 days).

Conclusion: Despite our new finding needs confirmation in studies with larger sample size, our report shows how syncope may be the presenting symptom of COVID-19. Whether the exact mechanism has to be demonstrated, the mortality rate in patients presenting with syncope is higher than the mortality rate of patients presenting with other symptoms; therefore COVID-19 patients presenting with syncope should be on a watch list for rapid deterioration.

TABLE 1: COVID-19 with syncope

PAST MEDICAL HISTORY			
BASELINE CHARACTERISTICS		CHRONIC THERAPY	
Mean age (y)	72 ± 15	Beta-blockers	19/46 (41%)
Male sex	28/46 (61%)	Diuretics	19/46 (41%)
Hypertension	32/46 (69%)	ACE-i	15/46 (33%)
Diabetes	13/46 (28%)	ARBs	4/46 (9%)
Obesity	4/46 (9%)	Ca-channel blockers	1/46 (2%)
Smoke	8/46 (17%)	AAD	2/46 (4%)
Prior AMI - Prior PCI	5/46 (11%) – 6/46 (13%)	NOA/warfarin	11/46 (24%)
Cardiac disease	10/46 (22%)		
Mean EF (%)	50% ± 10%		
COPD	4/46 (9%)		
Cancer	7/46 (25%)		
PAD	4/46 (9%)		
DVT/PE history	3/46 (6%)		
Syncope history	4/46 (9%)		
Arrhythmia history	13/46 (28%)		
Cardiac device	7/46 (15%)		
EMERGENCY DEPARTMENT ADMISSION			
ASSOCIATED SYMPTOMS		LABORATORY DATA AND IMAGING	
Prodromes	23/46 (50%)	White blood cell count*	6.50 (range 3.5-10.0 x10 ³ /ul)
Hypotension	0/46 (0%)	Lymphocytes (%)*	16.0 (range 18.0-50.0%)
O ₂ Saturation*	94.5%	Lymphocytes (n.)*	1.07 (1.0-3.0 x10 ³ /ul)
Fever	16/46 (35%)	C Reactive Protein*	6.6 (range 0.1-0.5 mg/dl)
Dyspnea	8/46 (17%)	D-Dimer*	362 (range 0-200 ng/ml)
Cough	11/46 (24%)	LDH*	308 (range 125-250 U/L)
Gastrointestinal	3/46 (6%)	Pneumonia on Chest X ray	43/46 (93%)
Anosmia and Ageusia	1/46 (2%)	Pneumonia on CT scan	13/13 (100%)
		PE on CT scan	1/8 (12%)
HOSPITALIZATION AND OUTCOME			
IN-HOSPITAL MANAGEMENT		OUTCOME	
CPAP/NIV	14/46 (30%)	Hospitalization days* (d)	10 (range 0-44)
Intubation and ICU	5/46 (11%)	Swab negativization time* (d)	20 (range 7-47)
ECMO	1/46 (2%)	Death rate	15/46 (32%)
		Syncope-to-death time (d)	7 (range 0-44)