

Characteristics of Long COVID after two years of follow-up in a previously hospitalized population.

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Introduction

- Long COVID is a multisystemic syndrome which negatively impacts on quality of life. The risk of sequelae even persists after two years from acute SARS-COV2 infection¹⁻⁴.
- The aim of this study was to describe the prevalence and the course of symptoms up to two years from discharge in a population that was hospitalized for COVID-19.

Methods

- A multidisciplinary Long COVID clinic was created in 2020 at the San Gerardo Hospital in Monza.
- Patients, who were discharged from the hospital with the diagnosis of SARS-CoV-2 infection, were evaluated at 6 (T1) and 24 (T2) months after hospitalization.
- In this analysis we described symptoms present at discharge and at follow up visits (T1 and T2).
- We grouped symptoms in four clinical phenotypes:
 - respiratory syndrome:** dyspnea, cough
 - neurological syndrome:** paresthesia, headache, impaired mobility, behavioral disorders, brain fog, tremors
 - psychological syndrome:** sleep disorders, mood disorders
 - musculoskeletal syndrome:** arthromyalgia, fatigue, osteoarticular pain

Table 1. Patient's characteristics		N=134
Age (median (IQR))		57 (52-66)
<65 years		99 (73.9)
≥65 years		35 (26.1)
Sex (n, %)		
Male		89 (66.4)
Female		45 (33.6)
Smoker (n,%)		55 (42.6)
Comorbidities (n,%)		
No comorbidities		31 (23.7)
1 comorbidity		38 (29.0)
2 comorbidities		62 (47.3)
> 2 comorbidities		32 (24.4)
Hypertension		60 (45.8)
Myocardial infarction		4 (3.1)
Peripheral vascular disease		5 (3.8)
Solid tumors		6 (4.6)
Diabetes		19 (14.5)
Length of hospital stay, days (median, IQR)		14 (10-23)
Length from discharge to follow-up1 visit, months (median, IQR)		8.5 (5.6-10.5)
Length from discharge to follow-up2 visit, months (median, IQR)		29.7 (28.7-32.4)
Ordinary scale		
3		2 (1.6)
4		18 (14.4)
5		99 (79.2)
6		6 (4.8)

Results of 2

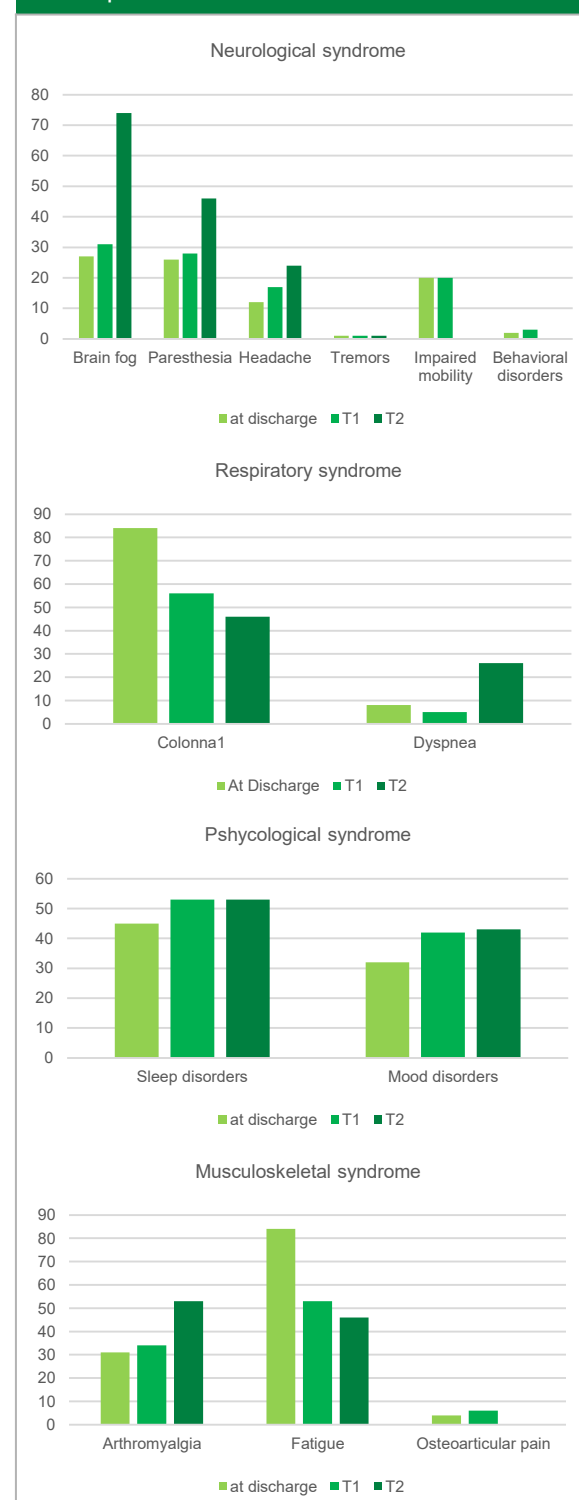
- 123 (91.8%) individuals were symptomatic at T1, and 124 (92.5%) still had symptoms at T2.
- Neurological syndrome was the most prevalent at T2 and the most increased over time (56/134, 41.8% at discharge; 69/134, 51.5% at T1; 96/134, 71.6% at T2). The prevalence of other clinical phenotypes remained stable from T1 to T2 (table 2).

Table 2 Clinical Phenotypes present at discharge, at 6 (T1) and 24 months (T2) of follow up.			
n (%)	Disorders at discharge	Disorders still present at T1	Disorders still present at T2
Respiratory syndrome	85 (63.4)	57 (42.5)	62 (46.3)
Neurological syndrome	56 (41.8)	69 (51.5)	96 (71.6)
Psychological syndrome	53 (39.6)	69 (51.5)	71 (53.0)
Musculoskeletal syndrome	92 (68.7)	73 (54.5)	74 (55.2)

Results of 3

- The main persisting symptoms at T2 were: brain fog (55.2%), sleep disorders (39.6%), muscle pain (39.6%), fatigue (34.3%), dyspnea (34.3%).
- Moreover, symptoms, which had a greater increase from discharge to T2, were brain fog (at discharge 20%, T1 23.1%, T2 55.2%), cough (at discharge 6%, T1 3.7%, T2 19.4%) and sexual disfunctions (at discharge 0.7%, T1 3%, T2 28.4%)(table 2).

Figure 1 Symptoms present at discharge, at 6 (T1) and 24 months (T2) of follow up.



Conclusion

- In our cohort of patients with previous severe COVID-19 infection, we confirmed the high persistence of symptoms at two years of follow up.
- In particular, as described in other cohorts²⁻⁴, we observed a significant increase of cognitive disfunctions which appeared later than other disorders.
- These data supported the persistence of Long COVID syndrome and the need to find specific treatments.

References

- Bowe, B., Xie, Y. and Al-Aly, Z. (2023) 'Postacute sequelae of COVID-19 at 2 years', *Nature Medicine*, 29(9), pp. 2347-2357.
- Wahlgren, C. et al. (2023) 'Two-year follow-up of patients with post-COVID-19 condition in Sweden: a prospective cohort study', *The Lancet Regional Health - Europe*, 28, p. 100595.
- Yang, X. et al. (2022) 'Two-Year Health Outcomes in Hospitalized COVID-19 Survivors in China', *JAMA Network Open*, 5(9), p. e2231790.
- Gentilotti E., et al. (2023). Clinical phenotypes and quality of life to define post-COVID-19 syndrome: a cluster analysis of the multinational, prospective ORCHESTRA cohort. *eClinicalMedicine*. 62, 102107.