Long COVID in hospitalized patients

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Persistent symptoms 3 and 12 months after hospitalization for COVID-19 in Norway. The four major symptoms of interest were fatigue, concentration problems, memory problems and dyspnea. We found that female sex is an independent risk factor for fatigue and concentration problems. Surprisingly, older age seemed to protect against long COVID symptoms.

ABSTRACT

Background

The aim of this study is to assess the trajectory and risk factors for long-term symptoms after 3 and 12 months in hospitalized COVID-19 patients.

Methods

We conducted a prospective study on patients previously hospitalized for COVID-19 between March and December 2020 in Norway.

Results

- Overall, fatigue was reported by 57% of participants after both 3- and 12 months.
- Female sex was significantly associated with fatigue (p=0.001) and concentration problems (p=0.001) at 12 month follow up.
- We identified younger age as a risk factor for problems with fatigue, concentration, and memory at both follow up points.

Discussion

Our findings add to the evidence that persistent symptoms are common up to 12 months after hospitalization for COVID-19. Special attention should be focused on younger patients and females, regardless of severity of disease during hospitalization.

Symptom	Sex	3 month follow up			12 month follow up		
		%	n/N	p value[a]	%	n/N	p value[a]
Fatigue	All	57	344/602		57	336/586	
	Female	63	156/247	0.016	66	160/243	**0.001**
	Male	53	188/355		51	176/343	
Concentration problems	All	36	220/604		46	273/589	
	Female	46	113/248	**<0.001**	55	133/243	**0.001**
	Male	30	107/356		41	140/346	
Memory problems	All	34	206/603		46	268/589	
	Female	38	93/247	0.156	51	125/243	0.019
	Male	32	113/356		41	143/346	
Dyspnea	All	25	151/615		22	134/609	
	Female	30	76/255	0.014	26	65/253	0.080
	Male	21	75/360		19	69/356	

Table 2: Prevalence of long COVID symptoms by sex at 3 and 12 months.

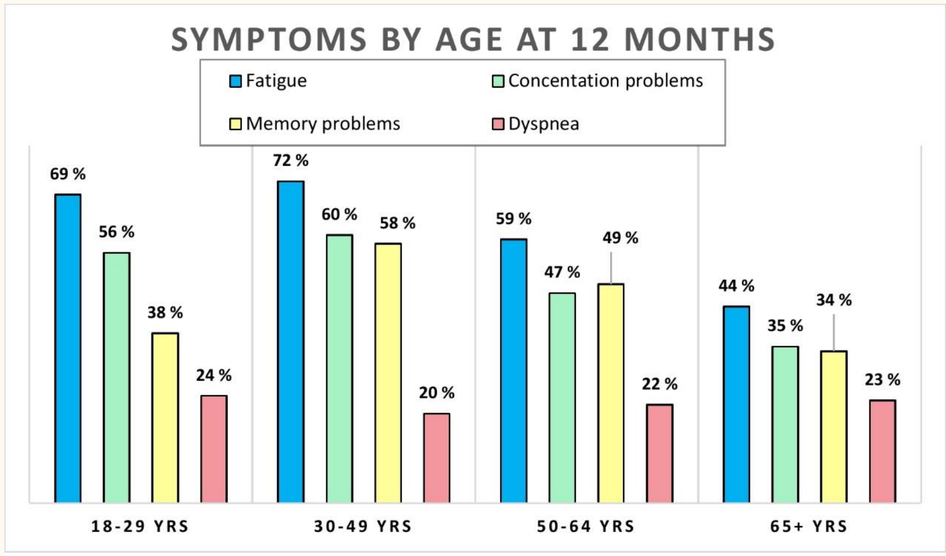

Figure 3: Symptom prevalence by age groups at 12 months.

STRENGTHS

To this date, studies on persistent symptoms 12 months after hospital discharge for SARS-CoV-2 are limited. A strength of this study is the long-term follow up of patients at both 3 and 12 months, which made it possible to follow the trajectory of symptoms. Our data is collected from the first group of hospitalized COVID-19 patients in 2020, which will be of great value when comparing data from infection with new variants of concern and the vaccinated population.

CONCLUSION

We identified female sex as an independent risk factor for fatigue and concentration problems 12 months post-infection. We found that older patients were less likely to report long COVID symptoms. At the 12 month follow up, there was no association between persistent symptoms and ICU stay.

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ACKNOWLEDGEMENTS
We would like to thank our advisors Elisabeth Berg Fjelltveit, Bjørg Blomberg, Nina Langeland and Rebecca Cox.
We also thank Eirik Alnes Buanes and Ingrid B Helland.