

Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) can cause acute disease. Moreover it becomes increasingly clear that long term symptoms may remain after passing the acute disease. This condition, called long-COVID, presents with many different symptoms. One symptom which occurs frequently in these patients is fatigue. Up to now there is only few data to determine which patient group is more susceptible for the development of fatigue after a SARS-CoV-2 infection.

Materials and Methods

During regular outpatient Service we conducted a multicenter outpatient follow up study in the Rhine-Ruhr area in Germany during March to May 2021 collecting data for remaining symptoms in patients after undergoing a prior SARS-CoV-2 infection.

Table 1

Mean ± SD	Total, n= 491	Fatigue, n= 322	No Fatigue, n= 169
Age (years)	48,77± 14,73	48,68±13,67	49,04±15,66
Female, n (%)	278 (56%)	170 (62,5%)	76 (53,15%)
Pulmonary Medical history			
- None, n (%)	208 (42%)	108 (39,71%)	60 (41,96%)
- Asthma, n (%)	198 (40%)	125 (45,96%)	58 (40,56%)
- COPD, n (%)	32 (6%)	13 (4,78%)	12 (8,39%)
- Other, n (%)	47 (10%)	25 ((9.19%)	12 (8,39%)
Temporal distance between diagnosis and outpatient consultation, days	81,20± 72,80	84,49±76,59	88,38±75,48
Hospitalization, n (%)	86 (17%)	51 (18,75%)	20 (13,99%)
Highest level of ventilation therapy			
- none	429 (88%)	240 (88,24%)	126 (88,11%)
- Suppl oxygen	45 (9%)	26 (9,56%)	11 (7,69%)
- Non-invasive	5 (1%)	3 (1,10%)	2 (1,4%)
- Mechanical	5 (1%)	1 (0,37%)	3 (2,1%)
COVID-specific medical drug treatment, n(%)	22 (5%)	13 (4,78%)	6 (4,2%)
FEV ₁ (% pred.)	89,09± 20,36	90,41±20,32	88,85±16,68

Results

Overall 491 patients (Table 1) were identified with (mean±SD) 49±15 years, 56% female and 17% had been hospitalized for COVID-19; 42% had no previous pulmonary disease, 40% had previous asthma. 83% still reported symptoms 81 days after SARS-CoV-2 infection and 66% had fatigue. When analyzing patients with or without long COVID, differences were found in terms of sex but not in terms of age, previous hospitalization, medical therapy or lung function. Of the patients with long COVID 63 % were female.

In a subgroup analysis of patients with diagnosed asthma (n=183) (table 2) we again found more females (66%) compared to males (34%) with no differences in lung function, diffusion capacity, radiographic abnormalities or previous therapies.

Table 2

Mean ± SD Asthma, n=183	Fatigue, n= 125	No Fatigue, n= 58
Age (years)	47,75 ±13,76	44,97± 14,42
Female, n (%)	83 (66,4%)	34 (58,62%)
Temporal distance between diagnosis and outpatient consultation, days	85,63± 84,55	97,10 ±88,15
Hospitalization, n (%)	20 (16%)	3 (5,17%)
Highest level of ventilation therapy		
- none	116 (92,8%)	54 (93,10%)
- Suppl oxygen	7 (5,6%)	2 (3,45%)
- Non-invasive	1	1
- Mechanical	1	0
COVID-specific medical drug treatment, n	2	1
FEV ₁ (%pred.)	91,11 ±19,39	89,94± 15,84

Conclusions

Long COVID-19 symptoms are more frequent in females but are independent from lung function, chest-X- ray abnormalities and previous medical treatment of COVID-19 disease. This applies also for patients with a previous diagnosis of asthma and COVID-19 disease