Original Research Paper

Volume - 11 | Issue - 09 | September - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

General Medicine

CLINICAL STUDY OF POST COVID SYMPTOMS AFTER 1ST WAVE OF COVID 19, AT A TERTIARY HOSPITAL

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ABSTRACT **Background:** Early reports suggest residual effects of SARS-CoV-2 infection, such as fatigue, dyspnea, chest pain, cognitive disturbances, arthralgia and decline in quality of life. In present study we aimed to evaluate post covid symptoms after 1st wave of COVID 19 in COVID 19 recovered patients at a tertiary hospital. **Material and Methods:** Present study was hospital based, descriptive, cross-sectional, questionnaire-based study conducted in Covid 19 positive patients (RT-PCR or Rapid Antigen positive patients) either hospital admitted or home isolation patients, recovered (either RTPCR negative or completed 14 days isolation and no symptoms) came to post covid OPD for follow up, were studied. **Results:** In present study 101 post COVID 19 recovered patients were studied. Most of patients were from age group 51-60 years (19.8 %) followed by age group 41-50 years (16.83 %). Male patients (65.35 %) were more than female patients (34.65%), male to female ratio was 1.9 :1. Majority of patients received treatment at hospital (75.25%) & were diagnosed by RTPCR (57.43%). Most of patients had recovered from COVID 61-90 days ago (28.71%) followed by 121-150 days ago (19.8%). During acute COVID-19 pneumonia was diagnosed in 36.63 % cases. Other characteristics were intensive care unit admission (14.85 %), oxygen supplementation (21.78 %), noninvasive ventilation (7.92 %) & mechanical ventilation (2.97 %). Pre-existing comorbidities noted were hypertension (12.87 %), thyroid disease (4.95 %), diabetes (3.96 %), chronic obstructive pulmonary disease (3.96 %), h/o kidney failure (1.98 %), active smoker (8.91 %) & former smoker (14.85 %). No regular physical activity was noted in 83.17 %. Post COVID symptoms noted in present study were cough (14.85 %), fatigue (13.86 %), Breathlessness (8.91 %), headaches (5.94 %), myalgia (3.96 %), palpitation (3.96 %), loss of smell sensation (3.96 %), muscle weakness (2.97 %), loss of taste sensation (2.97 %) & chest pain (1.98 %). **Conclusion:** Most of the COVID-19 survivors experienced mild post-recovery symptoms such as cough, fatigue, breathlessness, headache, myalgia & palpitation. Raising awareness, recognition, research, and multidisciplinary involvement will be considered the cornerstones to manage long-term sequelae of COVID-19 effectively.

KEYWORDS : COVID-19, post-recovery symptoms, residual effects

INTRODUCTION

Scientific and clinical evidence is evolving on the subacute and long-term effects of COVID-19, which can affect multiple organ systems.[1] More recently, however, it has become clear that in some patients debilitating symptoms persist for weeks or even months. In some of these patients, symptoms have never gone away.[2]

Early reports suggest residual effects of SARS-CoV-2 infection, such as fatigue, dyspnea, chest pain, cognitive disturbances, arthralgia and decline in quality of life.[3,4] We know from other viral infections, that complications after acute viral illnesses are well described. During the first wave of this pandemic, investigators began to assemble longitudinal cohort studies to assess COVID-19 sequelae and several studies are now becoming available.

The most common signs and symptoms that linger over time include: - fatigue, shortness of breath, cough, joint pain, chest pain, other long-term signs and symptoms may include: - muscle pain or headache, fast or pounding heartbeat, loss of smell or taste, memory, concentration or sleep problems, rash and hair loss.[5] Furthermore, lung fibrosis, hypercoagulability leading to venous thrombosis and embolism, and kidney injury are well-defined sequalae of severe COVID-19. In present study we aimed to evaluate post covid symptoms after 1st wave of COVID 19 in COVID 19 recovered patients at a tertiary hospital.

MATERIAL AND METHODS

Present study was hospital based, descriptive, cross-sectional, questionnaire-based study conducted in outpatient department of general medicine at KIMS medical college & hospital, Karad,Maharashtra, India. Study duration was of 3 months (September 2020 to December 2020). Study approval was taken from institutional ethical committee.

Covid 19 positive patients (RT-PCR or Rapid Antigen positive patients) either hospital admitted or home isolation patients, recovered (either RTPCR negative or completed 14 days isolation and no symptoms) came to post covid OPD for follow up, were considered for present study.

Study was explained and a written informed consent was taken from patients. Details regarding various aspects of COVID and post-COVID problems, present complaints, pre-existing morbidities, etc. were collected in a predesigned proforma. Statistical analysis was done using descriptive statistics.

RESULTS

In present study 101 post COVID 19 recovered patients were studied. Most of patients were from age group 51-60 years (19.8 %) followed by age group 41-50 years (16.83 %). Male patients (65.35 %) were more than female patients (34.65%), male to female ratio was 1.9 :1. Majority of patients received treatment at hospital (75.25%) & were diagnosed by RTPCR (57.43%). Most of patients had recovered from COVID 61-90 days ago (28.71%) followed by 121-150 days ago (19.8%). During acute COVID-19 pneumonia was diagnosed in 36.63 % cases. Other 6 were intensive care unit admission (14.85 %), oxygen supplementation (21.78 %), noninvasive ventilation (7.92 %) & mechanical ventilation (2.97 %). Pre-existing comorbidities noted were hypertension (12.87 %), thyroid disease (4.95 %), diabetes (3.96 %), chronic obstructive pulmonary disease (3.96 %), h/o kidney failure (1.98 %), active smoker (8.91 %) & former smoker (14.85 %). No regular physical activity was noted in 83.17 %.

Table 1 – General characteristics

Characteristic	No. of cases	Percentage
Age in years		
≤ 20	9	8.91
21- 30	15	14.85
31- 40	16	15.84
41- 50	17	16.83
51- 60	20	19.80
61- 70	12	11.88
71- 80	9	8.91
> 80	3	2.97
Gender		
Female	35	34.65
Male	66	65.35
Treatment received at		
Hospital Admission	76	75.25
Home quarantine	25	24.75
Diagnosed by		
RTPCR	58	57.43
RAT	43	42.57
Duration from COVID 19 recovery		

≤ 30	4	3.96
31- 60	18	17.82
61 - 90	29	28.71
91 - 120	19	18.81
121 - 150	20	19.80
151- 180	3	2.97
181 - 210	7	6.93
211 - 240	1	0.99
Acute COVID-19 characteristics,		
Pneumonia diagnosed	37	36.63
Intensive care unit admission	15	14.85
Oxygen supplementation	22	21.78
Ventilation		
Non-invasive	8	7.92
Mechanical	3	2.97
Pre-existing comorbidities	No. of cases	Percentage
Hypertension	13	12.87
Thyroid disease	5	4.95
Diabetes	4	3.96
Chronic obstructive pulmonary disease	4	3.96
h/o Kidney failure	2	1.98
No regular physical activity	84	83.17
Smoking status		0.00
None	77	76.24
Active	9	8.91
Former	15	14.85

Post COVID symptoms noted in present study were cough (14.85 %), fatigue (13.86 %), Breathlessness (8.91 %), headaches (5.94 %), myalgia (3.96 %), palpitation (3.96 %), loss of smell sensation (3.96 %), muscle weakness (2.97 %), loss of taste sensation (2.97 %) & chest pain (1.98 %).

Table 2 - Prevalence of post COVID symptoms

Type of symptom		
Cough	15	14.85
Fatigue	14	13.86
Breathlessness	9	8.91
Headaches	6	5.94
Myalgia	4	3.96
Palpitation	4	3.96
Loss of smell sensation	4	3.96
Muscle weakness	3	2.97
Loss of taste sensation	3	2.97
Chest pain	2	1.98

DISCUSSION

The specific reason behind why a few people experience a drawn out recuperation is obscure. It may be due to relapse or reinfection[6] inflammatory and other immune reactions[7] and also majority amounts to be a part of mental factors such as post-traumatic stress[8] which contribute to the disease process.

Post-acute COVID-19 can be defined as signs and symptoms of COVID-19 illness extending beyond three weeks from the initial onset, and chronic COVID-19 can be defined as symptoms extending beyond 12 weeks.[9] Broadly, the Post-COVID-19 syndrome patients can be divided into acute, those who may have serious sequelae such as thromboembolic complications and chronic, those with a non-specific clinical picture, often dominated by fatigue and breathlessness.

Various studies have reported that around 70-80% of patients who recovered from COVID-19 presents with persistence of at least 1 or more symptoms, even after being declared COVID-free.[10,11] In a smartphone-based study in UK (UK COVID Symptom Study), it was found that around 10% of the patients who had tested positive for SARSCoV-2 virus, remain unwell beyond 3 weeks, and a smaller proportion for months.[12]

Out of 100 randomly selected patients, 87% patients developed one or more post covid symptoms. Weakness was reported to be most common problem (55%), followed by body ache (26%) and neuropsychiatric symptoms such as difficulty in concentration and insomnia (22%). Every fifth patient reported that symptoms persisted for more than 1 month. Though most of the respondents classified their symptoms as mild and moderate (52.5% and 37.9% respectively), 47% of the symptomatic patients have to take some treatment for these symptoms.[13]

It may be that early intervention and supportive treatments at the end of the acute phase of COVID-19 can help overcome acute phase symptoms and prevent them from becoming longer-term consequences. Studies show that show COVID-19 influences the cardiovascular framework, yet the general effects stay obscured. Impaired diffusion capacity, lower respiratory muscle strength, and lung imaging abnormalities are seen in COVID-19 patients in the early recovery stage. As compared to non-severe cases, severe patients had a higher incidence of Diffusion capacity of lung for carbon monoxide (DLCO) impairment and are more prone to total lung capacity decrease and 6-Minute Walk Test (6MWT) decline.[14]

Mahmud R et al., studied 355 patients, 46% patients developed post-COVID-19 symptoms, with post-viral fatigue being the most prevalent symptom in 70% cases. The post-COVID-19 syndrome was associated with female gender, those who required a prolonged time for clinical improvement, and those showing COVID-19 positivity after 14 days of initial positivity. Patients with severe COVID-19 at presentation developed post-COVID-19 syndrome. Patients with fever, cough, respiratory distress, and lethargy as the presenting features were associated with the development of the more susceptible to develop post COVID-19 syndrome than the others. Logistic regression analysis revealed female sex, respiratory distress, lethargy, and long duration of the disease as risk factors.[15]

In a Systematic Review of the Current Data, Salamanna F et al.,16 noted that 20.70% of reports on long-term COVID-19 symptoms were on abnormal lung functions, 24.13%on neurologic complaints and olfactory dysfunctions, and 55.17% on specific widespread symptoms, mainly chronic fatigue, and pain. Despite the relatively high heterogeneity of the reviewed studies, our findings highlighted that a noteworthy proportion of patients who have suffered fromSARS-CoV-2 infection present a "post-COVID syndrome." The multifaceted understanding of all aspects of the COVID-19 pandemic, including these long-term symptoms, will allow us to respond to all the global health challenges, thus paving the way to a stronger public health.

Documented post-acute sequelae include myocarditis, pericarditis, heart failure, arrhythmias, and thromboembolic complications including myocardial infarction, stroke and venous thrombosis.17 While other comorbidities, such as diabetes, obesity, chronic cardiovascular or kidney disease, cancer and organ transplantation, are well-recognized determinants of increased severity and mortality related to acute COVID-19 & their association with post-acute COVID-19 outcomes in those who have recovered remains to be determined.[1]

Our study has certain limitations of present study were single-center study, sample population was not randomized, patients requiring prolonged ICU and inpatient stay might be under-represented.

In this current scenario, it is necessary to conduct the epidemiological and immunological based studies from COVID-19 recovered patients to monitor their health status for any possible future complications & would help uncover if COVID-19 recovered patients needed post-acute care to recuperate from any further infections or multi-organ damage.18 Multi-disciplinary rehabilitation teams, healthcare workers, and the general population should recognize the need for systematic assessment of their recovery and further rehabilitation.

CONCLUSION

Most of the COVID-19 survivors experienced mild post-recovery symptoms such as cough, fatigue, breathlessness, headache, myalgia & palpitation. Raising awareness, recognition, research, and multidisciplinary involvement will be considered the cornerstones to manage long-term sequelae of COVID-19 effectively.

Conflict of Interest: None to declare

Source of funding: Nil

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