



A STUDY OF POST COVID SYNDROME IN PATIENTS ADMITTED IN A TERTIARY HOSPITAL IN CENTRAL INDIA.

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ABSTRACT

Aim: This study aims to study the post covid symptoms in patients admitted with coronavirus infection.

Method: A total of 250 COVID positive patients presenting in the COVID OPD under medicine department were included in the study. Each received a questionnaire divided into three main parts starting from subjects' demographic data, data about the COVID-19 status and other comorbidities of the subject, and finally data about post-COVID-19 manifestations.

Results: 30 patients (12%) had no symptoms manifested after recovery from the disease while a large percentage of subjects suffered from several symptoms and diseases. The most common symptom reported was weakness (fatigue) (75%), more critical presentations like stroke, renal failure, myocarditis, and pulmonary fibrosis were reported by a few percent of the subjects.

Conclusion: The post-COVID-19 syndrome is largely similar to the post-SARS syndrome. All subjects recovered from COVID-19 should undergo long-term monitoring for evaluation and treatment of symptoms and conditions that might be precipitated with the new coronavirus infection.

KEYWORDS : post-covid syndrome

INTRODUCTION:

One of the most crucial global catastrophe that engulfed the happiness and the health of a vast majority in the world in recent times is undoubtedly the covid pandemic. From the developed countries to the underdeveloped ones, from the rich to the poor, from the aged to the young, nobody was spared in the covid pandemic. Patients suffered from different symptoms like fever, dry cough, and fatigue which is mild in about 80% of cases, but the severity of the case may progress to develop a respiratory distress or respiratory failure and hence the need for intensive care unit (ICU) was increased [1]. The severity of the disease is related to age and comorbidities of the infected subjects; the elderly are severely affected with the need for ICU [2]. The severity of symptoms is also related to its duration, for mild cases, symptoms may last for 2 weeks while for the severe cases it ranges from 3 to 6 weeks [3]. Direct contact to confirmed cases is the main way by which the disease transfer among people because the SARS-COV-2 is transmitted through exhaled air and aerosol [4]. Diagnosis of COVID-19 is done through polymer chain reaction (PCR), computed tomography (CT) scan, and blood test [5]. For mild cases, supportive treatment is the only choice including antibiotics, vitamins, trace elements, and antipyretics, while those with respiratory distress, the oxygen therapy with or without mechanical ventilation should be introduced and individualized according to each case [6]. A lot of medications were included in clinical trials to act as antiviral but there are no clear results to indicate the confirmed effect for any of the investigated medications [7-9]. In addition to symptomatic therapy, corticosteroids as an anti-inflammatory could play a vital role in severe cases [10]. Many cases have suffered from different symptoms after recovery from the disease which are different from COVID-19 symptoms [11]. Some of these manifestations were chronic and lasted for a long time which required long term monitoring [12].

Hence the current study aims to investigate the post-COVID syndrome and also to link these symptoms with several factors (age, weight, disease severity, or other comorbidities).

Methodology:

This study was undertaken in medicine department in a tertiary medical college of central India. Covid patients were admitted in separate ICU which was managed by the physicians. A total

of 250 discharged patients from June 2021 to November 2021 were included in the study. Severity of the infection, comorbidities present and other demographic and clinical factors were considered in the study. The results were tabulated and appropriate tests were applied as deemed necessary.

OBSERVATION AND RESULTS:

Demographic data and COVID-19 course of involved 250 subjects were expressed in table 1.

Tables and Figures:

Table 1: Distribution of patients as per demographic characteristics

Element	Percent
Age	
22-30 years	32.7%
31-40 years	48.1 %
> 40 years	20.2 %
Gender	
Male	44 %
female	56 %
Body mass index	
Normal (18.5-24.9)	26.4 %
Overweight (25-29.9)	39 %
Obese (> 30)	34.6 %
Smoking	
Smoker	10 %
Non-smoker	90 %
Severity of disease	
Mild	80 %
Moderate (Oxygen therapy)	16 %
Severe (ICU)	4 %
Other diseases	
No other conditions	70 %
Hypertension	10 %
Diabetes	8 %
Dyslipidemia	2 %
hypothyroidism	4 %
Asthma	1 %

The study involved 250 recovered COVID-19 subjects, 110 of them were males and 140 were females. Age of involved subjects expressed as Mean \pm SD was 42.3 ± 6.5 and ages ranged from 24 to 70 years old. Mean \pm SD weight, height, and body mass index (BMI) were 72 ± 15.4 , 161.9 ± 15.3 , and 26.5 ± 5.2 respectively. Percent of smokers among male subjects was 30%, while all females were non-smokers. Regarding other diseases, 70% of all subjects have no known history of other illnesses, while 10% have hypertension and 8% were diabetic. The severity of COVID-19 symptoms was divided into three categories, first is the mild cases that were isolated at home and they expressed 80.2%, the second category was the moderate cases that received oxygen therapy and they represent 14.9 %, the third category was the severe cases that required ICU admission and this category represent a small percent (4.9 %). Analysis of post COVID manifestations revealed that only 10.8 % of all subjects have no manifestation after recovery from the disease while a large percentage of subjects suffered from several symptoms. Most subjects suffered from fatigue (75%), anxiety (50%), joints pain (30%), continuous headache (20%), chest pain (25%), dementia (15%) depression (30%), and dyspnea (30%). A few percent of recovered subjects have newly diagnosed with diabetes (4%) (Table 2).

Table 2: Post COVID symptoms

Item	Percent
Manifestations	
Fatigue	75 %
Anxiety	50 %
Joints pain	30 %
Continuous headache	20 %
Chest pain	25 %
Dementia	15 %
Depression	30 %
Dyspnea	30 %
Blurred vision	15 %
Tinnitus	15 %
Intermittent fever	20 %
Obsessive-compulsive disorder	4 %
Pulmonary fibrosis	5 %
Diabetes mellites	4 %
Migraine	2 %
Stroke	3 %
Renal failure	1 %
Myocarditis	1.4 %
Arrhythmia	0.3 %

A large percent of the subjects was recovered from post-COVID-19 manifestations (70%), while 30% of subjects have persistent manifestations. Regarding nutritional support, 90% of all subjects were receiving multivitamins (natural or pharmaceutical products) during the disease.

DISCUSSION:

The dread of Covid was enough to scare many people worldwide. Then came the Post COVID syndrome which further added to the misery. were recorded for about 90 % of the recovered subjects, with a wide range of symptoms and conditions that varied from a low-critical symptom like a headache to more critical conditions such as stroke, renal failure, and pulmonary fibrosis. Post viral infection syndrome was previously reported after SARS [12, 13]. Follow up for 4 years showed that chronic fatigue and psychiatric conditions continued to be clinically significant among subjects survived from SARS infection [14]. Hence, mental health morbidities management should be optimized through a multidisciplinary approach combined with long-term rehabilitation. Regarding COVID-19 survivors, each subject reported one or more manifestations, those manifestations persisted with all subjects for more than 20 days from the last negative PCR. The severity of COVID-19 was classified into three categories as

follow; mild cases that had controllable symptoms and have been treated at home without the need for oxygen therapy, moderate cases which suffered from difficult breathing and needed oxygen therapy at home, and severe cases that had been hospitalized and needed ICU. The relation between age, comorbidities, and severity of COVID-19 showed a strong link between the presence of other comorbidities and the severity of COVID-19 [15]. Also increasing age was related to increased severity of the disease course [16]. Most of the reported manifestations were mild reversible symptoms that could be relieved without medical interventions such as fatigue and headache which could be related to COVID-19 symptoms. Other mild symptoms like joint and muscle pain were also reported by many subjects and it could be classified as mild manifestations. It was noted that many manifestations are related to the central nervous system such as continuous headache, migraine, depression, anxiety, and obsessive-compulsive disorder. Few percent of subjects have suffered from critical complications such as stroke, myocarditis, renal failure, and pulmonary fibrosis which could be reversible and required extra investigation. For subjects recovered from COVID-19, negative PCR is not the end of patient monitoring, continuous and long-term monitoring of the subjects is recommended for evaluation of post-COVID-19 manifestation, and early intervention with the critical signs.

CONCLUSION:

Most of the subjects recovered from COVID-19 experienced several manifestations after the last negative PCR which could be mild symptoms such as fatigue, headache, or more critical manifestations like pulmonary fibrosis, stroke, and myocarditis. The most reported symptoms were fatigue, anxiety, joint pain, and headache. The severity of post-COVID-19 manifestations was correlated to the severity of the infection which also was related to the presence of comorbidities.

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