

The Clinical Manifestation of Post Covid-19 Syndrome among Basra City Population-Southern of Iraq

Iftikhar Ibraheem Yousif ¹, Ali Raheem Hashim ², Hassan Ala Farid ³

¹ Internal Medicine, Basra Teaching Hospital/Iraqi board for medical specialization

² Internal Medicine and Neurology, College of Medicine, University of Basra/Basra Teaching Hospital

³ Neurology, College of Medicine, University of Basra/Basra Teaching Hospital

Corresponding author

Hassan Ala Farid

Department of Medicine, College of Medicine, University of Basra

Email: hasbuttosan@gmail.com

ABSTRACT

Post COVID is a range of symptoms that can last weeks or months after first being infected with the virus that causes COVID-19 or can appear weeks after infection. Post COVID syndrome can happen to anyone who has had COVID-19, even if the illness was mild, or they had no symptoms. People with long COVID report experiencing different combinations of the following symptoms: Tiredness or fatigue, Difficulty thinking or concentrating, Headache, Loss of smell or taste, Dizziness on standing, Fast-beating, Chest pain, shortness of breath, Cough, Joint or muscle pain, Depression or anxiety, Fever, Symptoms that get worse after physical or mental activities, A cross sectional study was done on 350 patients with documented diagnosis of COVID-19 either by PCR or Radiologically whom were admitted at Al-Basra Teaching Hospital after they diagnosed with Covid-19 and then discharged from the hospital after days to weeks as they have been fully recovered and ask them about the manifestation of post covid-19 syndrome. The study concludes that the occurrence of post-covid 19 syndrome is a common sequelae following the acute infection and it was present in more than 60 % of the cases involve in the study, it was more common among females and middle-aged patient but not too much difference in relation to the presence of comorbidities, it also more common wafter sever illness and long duration of hospitalization.

Introduction

COVID-19 has spread worldwide since first being recognized in Wuhan, in central China in December 2019. Within a month, Chinese investigators identified a novel coronavirus, named SARS-CoV-2, as its cause⁽¹⁾. In February 2020, the World Health Organization (WHO), reported the time from onset to clinical recovery for mild cases was approximately 2 weeks and that recovery took 3 to 6 weeks for patients with severe or critical disease⁽²⁾. 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. About 60 days after onset of the first COVID-19 symptom, only 13% of the previously hospitalised COVID-19 patients were completely free of any COVID-19-related symptom, while 32% had one or two symptoms and 55% had three or more⁽³⁾. While the definition of the post-acute COVID-19 timeline is evolving, it has been suggested to include persistence of symptoms or development of sequelae beyond 3 or 4 weeks from the onset of acute symptoms of COVID-19⁽⁴⁾, as replication-competent SARS-CoV-2 has not been isolated after 3 weeks⁽⁵⁾. Scientific

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and clinical evidence is evolving on the subacute and long-term effects of COVID-19, which can affect multiple organ systems ⁽⁶⁾. Early reports suggest residual effects of SARS-CoV-2 infection, such as fatigue, dyspnoea, chest pain, cognitive disturbances, arthralgia and decline in quality of life ⁽⁷⁾. Cellular damage, a robust innate immune response with inflammatory cytokine production, and a pro-coagulant state induced by SARS-CoV-2 infection may contribute to these sequelae ⁽⁸⁾. Survivors of previous coronavirus infections, including the SARS epidemic of 2003 and the Middle East respiratory syndrome (MERS) outbreak of 2012, have demonstrated a similar constellation of persistent symptoms, reinforcing concern for clinically significant sequelae of COVID-19 ⁽⁹⁾. based on recent literature, it is further divided into two categories: (1) subacute or ongoing symptomatic COVID-19, which includes symptoms and abnormalities present from 4–12 weeks beyond acute COVID-19; and (2) chronic or post-COVID-19 syndrome, which includes symptoms and abnormalities persisting or present beyond 12 weeks of the onset of acute COVID-19 and not attributable to alternative diagnoses ⁽¹⁰⁾.

Keywords

Post covid, long covid, corona, Basra.

The aim of this study

Assess the persistent symptoms and health related quality of life challenge after discharge in patients who had been hospitalized with COVID-19.

Methods

Between the 20th of October to 20th of January 2021, and after taken the permission from Al Basra health institute, the information took from the medical reports at Al Basra teaching hospital, which is the single centre for treatment of patients infected with covid-19 in Basra. A cross sectional study was done on 350 patients with documented diagnosis of COVID-19 either by PCR or Radiologically (out of 500 patients after the exclusion of dead and ICU admitted patients) these 350 patients were admitted in June and July 2020 at Al-Basra Teaching Hospital after they diagnosed with Covid-19 and then discharged from the hospital after days to weeks as they have been fully recovered. The contact with those patients were arranged by phone call and all of the respondent patients were asked about : Age , sex , pre-existing comorbidities , duration of hospitalization , severity of the illness (moderate or severe depending on Oxygen saturation) and the symptoms at the time of taking this data which include (arthralgia , hair loss , generalize fatigability , shortness of breath , depression , stroke clinically or by brain CT , ischemic heart disease documented by ECG or PCI , lung fibrosis documented by chest CT , Diabetes mellites and thyroid disorders clinically and biochemically , memory impairment. For patients who developed anosmia we asked about unpleasant smell). The statistical analysis was done by using SPSS (Statistical package for the social sciences) version 26, the categorized variables were expressed by count and percentage, the results was expressed in form of tables, the association between the variables was assessed by using Qi square test and the significant threshold was set at a P value less than 0.05.

Results

The total number of patients involve in this study is (350),their characteristics in relation to age,sex,comorbidities, severity (moderate and sever) and duration of hospitalization (< 1 week, 1–2 weeks, > 2 weeks), are summarized in the table (1) below.

Table (1): the characteristics of patients who involve in the study

The Age		The sex		Comorbidities	
Mean	SD	Male	Female	Present	Absent
42.8	14.75	193	157	92	258
Severity		hospitalization			
Moderate	Sever	< 1 week	1 – 2 weeks	> 2 weeks	
200	150	204	140	6	

From the total number of patients, (218) (62.3 %) developed post COVID-19 syndrome and the details of the manifestations and their frequencies are shown in the table (2) below.

Table (2): the clinical manifestation of post covid-19 syndrome

The manifestation	The frequency	
	No.	%
Generalize fatigability	36	16.5
Depression	8	3.6
Arthralgia	69	31.6
Hair loss	56	25.6
Ischemic heart disease	4	1.8
Cerebrovascular disease (stroke)	4	1.8
Lung fibrosis (document by chest CT)	8	3.6
Exertional shortness of breath	27	12.3
Recent Diabetes mellitus	10	4.5
Recent hypothyroidism	6	2.7
Memory and attention impairment	50	22.9
Hyposmia/Unpleasant smell	25	11.4

To assess the relationship between the occurrence of post COVID-19 syndrome and the sociodemographic characteristics, the table (3) below shows the association of the syndrome with the age,sex, and comorbidities.

Table (3): the cross tab between the occurrence of the syndrome and the patient's characteristics

Patient's characteristics		The syndrome		Total
		Absent	Present	
Co-morbidities	Present	36 (39.1%)	56 (60.9 %)	92
	Absent	96 (37.2 %)	162 (62.8 %)	258

Total		132	218	350
Statistical numbers		P value : 0.744		
Sex	Male	86 (44.6 %)	107 (55.4 %)	193
	Female	46 (29.3 %)	111 (70.7 %)	157
Total		132	218	350
Statistical numbers		P value : 0.003		
Age / years	< 35	38 (38.8 %)	60 (61.2 %)	98
	35 – 65	82 (36 %)	146 (64 %)	288
	> 65	12 (50 %)	12 (50 %)	24
Total		132	218	350
Statistical numbers		P value : 0.389		

the association between those who developed post covid-19 syndrome and the severity of the respiratory illness as well as the duration of hospitalization were assessed also in this study, and the results was shown in table (4) below.

Table (4): the cross tab between the occurrence of the syndrome and the severity of the illness

The severity of illness		The syndrome		Total
		Absent	Present	
Severity	Moderate	85 (42.5%)	115 (57.5%)	200
	Sever	47 (31.3 %)	103(68.7 %)	150
Total		132	218	350
Statistical numbers		P value : 0.033		
Duration of hospitalization	< 1 week	68 (42.2 %)	118 (57.8 %)	204
	1 – 2 weeks	44 (31.4 %)	96 (68.6 %)	140
	> 2 weeks	2 (33.3 %)	4 (66.7 %)	6
Total		132	218	350
Statistical numbers		P value : 0.128		

Discussion

The multi-organ sequelae of COVID-19 beyond the acute phase of infection are increasingly being appreciated as data and clinical experience in this timeframe accrue. post-acute COVID-19, a syndrome characterized by persistent symptoms and/or delayed or long-term complications beyond 4 weeks from the onset of symptoms ⁽¹¹⁾. Early reports have now emerged on post-acute infectious consequences of COVID-19, with studies from the United States, Europe and China reporting outcomes for those who survived hospitalization for acute COVID-19.

An observational cohort study from 38 hospitals in Michigan, United States evaluated the outcomes of 1,250 patients discharged alive at 60 d by utilizing medical record abstraction and telephone surveys. During the study period of 488 patients who completed the telephone survey in this study, 32.6% of patients reported persistent symptoms, including 18.9% with

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new or worsened symptoms. Dyspnoea while walking up the stairs (22.9%) was most reported, while other symptoms included cough (15.4%) and persistent loss of taste and/or smell (13.1%)⁽¹²⁾. Similar findings were reported from studies in Europe. A post-acute outpatient service established in Italy reported persistence of symptoms in 87.4% of 143 patients discharged from hospital who recovered from acute COVID-19 at a mean follow-up of 60 d from the onset of the first symptom. Fatigue (53.1%), dyspnoea (43.4%), joint pain (27.3%) and chest pain (21.7%) were the most reported symptoms, with 55% of patients continuing to experience three or more symptoms⁽³⁾. A study focused on 150 survivors of non-critical COVID-19 from France similarly reported persistence of symptoms in two-thirds of individuals at 60 d follow-up, with one-third reporting feeling worse than at the onset of acute COVID-19⁽¹³⁾. In a prospective cohort study from Wuhan, China, long-term consequences of acute COVID-19 were evaluated by comprehensive in-person evaluation of 1,733 patients at 6 months from symptom onset, most of the patients (76%) reported at least one symptom. Like other studies, fatigue/muscular weakness was the most reported symptom (63%), followed by sleep difficulties (26%) and anxiety/depression (23%)⁽¹¹⁾. According to our study the occurrence of post-covid 19 syndrome is a common sequelae following the acute infection and it was present in more than 60 % of the cases involve in this study.

Many complains of suffering were noted post COVID-19 infection, the most common reported complain was the arthralgia (31.6 %) followed by hair loss (25.6 %) and the memory and attention impairment (22.9 %) was the 3rd most common reported manifestation among Basrapopulation.

In our study, Serious conditions also reported as a part of post COVID-19 – 19 which include ischemic heart diseases and cerebrovascular diseases which represented in 1.8 % equally for both. In a study of 26 competitive college athletes with mild or asymptomatic SARS-CoV-2 infection, cardiac MRI revealed features diagnostic of myocarditis in 15% of participants, and previous myocardial injury in 30.8% of participants⁽¹⁴⁾. Mechanisms perpetuating cardiovascular sequelae in post-acute COVID-19 include direct viral invasion, downregulation of ACE2, inflammation and the immunologic response affecting the structural integrity of the myocardium, pericardium, and conduction system⁽¹⁵⁾.

Endocrine disorders were noticed or discovered post infection as diabetes and hypothyroid disorders in (4.5 %) and (2.7 %) respectively. It is not yet known how long the increased severity of pre-existing diabetes or predisposition to DKA persists after infection⁽¹⁶⁾. Similarly, subacute thyroiditis with clinical thyrotoxicosis has been reported weeks after the resolution of respiratory symptoms. COVID-19 may also potentiate latent thyroid autoimmunity manifesting as new-onset Hashimoto's thyroiditis or Graves' disease⁽¹⁷⁾.

Persistent reparatory complain as Exertional dyspnoea is also reported in (12.3 %) of the cases and (3.6 %) of the total data are proved to have persistent pulmonary fibrosis. A spectrum of pulmonary manifestations, ranging from dyspnoea (with or without chronic oxygen dependence) to difficult ventilator weaning and fibrotic lung damage, has been reported among COVID-19 survivors. Like survivors of acute respiratory distress syndrome (ARDS) from other aetiologies, dyspnoea is the most common persistent symptom beyond acute COVID-19, ranging from 42–66% prevalence at 60–100 d follow-up⁽¹⁸⁾.

(16.5 %) of the patients included in this study became suffered from generalize fatigability with decrease the ability and the desire to perform the usual daily activity and (3.6 %) of them are seek psychiatric advice and they labelled to have depression. Like chronic post-

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SARS syndrome, COVID-19 survivors have reported a post-viral syndrome of chronic malaise, diffuse myalgia, depressive symptoms, and non-restorative sleep⁽¹⁹⁾. Hyposmia/unpleasant smell reported in (11.4%) of cases noted in those who have anosmia at time of acute infection with covid-19, but all the patients who developed dysgeusia fully recovered after weeks to months.

The prevalence of the post COVID-19 syndrome was higher among female and this was statistically significant in compare with male, and it also reported with higher frequency among those who does not have any comorbidities, and their age was ranged from 35 – 65 years, but this of no significant statical value. The manifestations of this syndrome were observed in higher frequencies among those with sever disease and this was statistically significant in compare with moderate, and slightly higher in frequencies among those who are admitted to the hospital for 1 – 2 weeks and was lowest among the with short duration of hospitalization (less than 1 week) but these results were not significant statistically.

Moreover, care for patients with COVID-19 does not conclude at the time of hospital discharge, and interdisciplinary cooperation is needed for comprehensive care of these patients in the outpatient setting. As such, it is crucial for healthcare systems and hospitals to recognize the need to establish dedicated COVID-19 clinics⁽²⁰⁾.

Conclusion and recommendation

We conclude that the occurrence of post-covid 19 syndrome is a common sequelae following the acute infection and it was present in more than 60 % of the cases involve in the study, it was more common among females and middle-aged patient but not too much difference in relation to the presence of comorbidities, it also more common wafter sever illness and long duration of hospitalization. We recommend active surveillance for the post COVID-19 syndrome to all patient hospitalized and even non hospitalized to diagnose the serious disorder that possibly resulted. We recommend a chest CT for patient after three months from recovery to assess the presence of lung fibrosis. Routine check-up for Blood sugar and thyroid function test is advised after recovery. Many patients may require treatment for the psychiatric complains. Further study is required to assess the other presentation of this new syndrome.

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