

Case Series

Clinical profile, prognosis and post COVID-19 illnesses among attendants to private general practitioner (GP) clinic at Urban Amman Area: a clinical case-series study

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Abstract

Background: The clinical manifestations of Corona Virus Disease of 2019 (COVID-19) varied from patient to patient with evidence of multi-organ involvement. Many patients continue to have a wide range of symptoms for variable periods of time. The long-term effects of COVID-19 infection (post-COVID-19 illness or syndrome) are not yet been fully explored.

This study aims to highlight the clinical manifestations of the acute COVID-19 infection and the longer-term manifestations of the disease among the attendants to a private GP clinic in the Urban Amman Area, Jordan.

Methods: A clinical case-series study was conducted on a sample of 300 COVID-19-positive cases among patients attending my private GP clinic in the Urban Amman Area, Jordan. We used the structured questionnaire based mainly on World Health Organization (WHO) Case Report Form (CRF) verified tool for post-COVID-19. All patients with COVID-19 were included in the study. Data collection was conducted through phone calls and analyzed using the Statistical Package for Social Sciences (SPSS) software.

Results: The incidence of COVID-19 among patients attending the clinic during the period of this study was 25%. Females were 135 (45%) of the study population and males were 165 (55%). The mean (SD) of age was 34.2 (5.0) years. Most of the infected staff (90%) were symptomatic and developed acute COVID-19 symptoms. Fever, Cough, Fatigue, joint pain and loss of smell and taste were the most common symptoms. 72% of the study population had fully recovered from the infection, while 28% of them continued to suffer from many long symptoms. Fatigue (28%), shortness of breath on activity (18%), Social withdrawal (18%), anxiety (17%), forgetfulness (16%), trouble concentrating (15) and depressed mood (14%) were the most frequently reported long symptoms.

Conclusion: The prevalence of Post COVID-19 illness was 28% with a high public health burden calling for the public health system to address the medical and psychological needs of affected persons. Mental health and psychosocial support are recommended elements for the management of patients.

Background

In late 2019, a Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) was detected in Wuhan, China. COVID-19 [1]. WHO considered COVID-19 as a global pandemic on 11 March 2020 [2]. The clinical manifestations of COVID-19 vary from patient to patient with evidence of multi-organ involvement including but not limited to Respiratory, gastrointestinal, kidney, nervous system, and cardiovascular manifestations

[3] The long-term effects of COVID-19 infection (post-COVID illness or syndrome) are not yet fully explored [4]. The World Health Organization defined long COVID as generally occurring 3 months from the onset of COVID-19 with symptoms [5]. The prevalence of long COVID-19 symptoms in general for COVID-19 survivors in the USA is 45% [6]. Long COVID is an often-debilitating illness that occurs in at least 10% of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections [7].

More Information

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Submitted: February 14, 2023

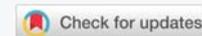
Approved: March 03, 2023

Published: March 04, 2023

How to cite this article: Abuzayed E, Abuzayed I. Clinical profile, prognosis and post COVID-19 illnesses among attendants to private general practitioner (GP) clinic at Urban Amman Area: a clinical case-series study. J Community Med Health Solut. 2023; 4: 019-022.

DOI: 10.29328/journal.jcmhs.1001029

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Aim of the study

This study aims to shed light on the clinical manifestations of acute COVID-19 infection as well as on the longer-term manifestations of the disease among the attendants to private GP clinics in the Urban Amman Area, Jordan.

Methods

Study design

A survey cross-sectional study was conducted on COVID-19-positive cases attending our GP clinic in Amman.

Instrument

A structured questionnaire was prepared based mainly on WHO Case Report Form (CRF) verified tool for post-COVID-19.

Source of data

The GP clinic has a database including all the confirmed COVID-19 cases of the attendants which were 300 patients since the beginning of the pandemic.

Sample size

A study sample of 300 employees was selected systemically.

Data collection and time frame

This study was conducted during October- December 2022 through phone calls, excluding infected cases with less than 12 weeks since their diagnosis.

Ethical consideration

Informed consent was obtained verbally from all participants in preparation for the telephone survey and counseling.

Data analysis

Data were analyzed using Microsoft Excel 2010 sheets, and data analysis was performed using the Statistical Package for Social Sciences (SPSS) software version 25. The Chi-square test was used to test the significance of the relationship between categorical variables. A *p* - value of less than 0.05 was considered statistically significant.

Results

Participant's characteristics

- A total of 300 responders: Females were 135 (45%) of the study population and males were 165 (55%).
- The mean (SD) of age was 34.2 (5.0) years.
- BMI 27.37 (3.50) kg/m².

COVID-19 symptoms

- Most of the infected staff (90%) were symptomatic and developed acute COVID-19 symptoms.

- Fever (80%), Cough (70%), Fatigue (60%), joint pain (50%), loss of smell (70%) and taste (60%) were the most common symptoms.
- Prognosis: 72% of the study population had fully recovered from the infection, while 28% of them continued to suffer from many treatable long symptoms.

Post COVID-19 symptoms

Persistent fatigue, shortness of breath with activity, trouble concentrating, anxiety, and depressed mood were the most frequently reported long symptoms as shown in Table 1.

The study showed a significant association between some post-COVID-19 manifestations and obesity, and the severity of the disease as shown in Tables 2,3.

Table 1: Most frequently post COVID-19 symptoms.

Post COVID-19 Symptoms	No		Yes	
	Number	%	Number	%
Persistent Fatigue	216	72	84	28
Shortness of breath with activity	246	82	54	18
Anxiety	249	83	51	17
Forgetfulness	252	84	48	16
Trouble in concentrating	255	85	45	15
Social withdrawal	246	84	54	18
Depressed mood	258	86	42	14

Table 2: Association between Obesity and post-COVID-19 symptoms.

Post COVID-19 symptoms	Obesity		<i>p</i> - value
	No	Yes	
Persistent fatigue	30 (16.6)	24 (20.0)	0.009
SOB with activity	28 (15.5)	31 (25.8)	0.017
Anxiety	30 (16.6)	24 (20.0)	0.377
Forgetfulness	30 (16.6)	21 (17.5)	0.842
Trouble in concentration	30 (16.6)	21 (17.5)	0.765
Depressed mood	26 (14.4)	22 (18.3)	0.363

Table 3: Association between Severity of disease and post COVID-19 symptoms.

Post COVID-19 symptoms	Severity of Disease		<i>p</i> - value
	Mild-Moderate N (%)	Severe or critical N (%)	
Persistent fatigue	100 (37.0)	9 (30.0)	0.053
SOB with activity	35 (13.0)	12(40.0)	0.00
Anxiety	48 (17.8)	6 (20.0)	0.87
Forgetfulness	47 (17.4)	6 (20.0)	0.817
Trouble in concentration	42(15.5)	5 (15.0)	0.733
Depressed mood	39 (14.4)	6 (20.0)	0.559

Patients with long COVID-19 symptoms were closely followed up at the clinic with mental health and psychosocial support plus medical treatment and referral to specialized services when needed. Patients showed progressive improvement.

Discussion

The presented study was conducted on infected patients attending the clinic with COVID-19, during both the acute phase of infection and post-infection status.



Acute phase of COVID-19

In a systematic review of 48 publications that included 24,410 patients with COVID-19 from 9 countries, the most frequent symptoms were fever (78%), cough (57%), and fatigue (31%) [8]. In our study sample, the most frequently encountered acute symptoms were Fever (80%), Cough (70%), Fatigue (60%), joint pain (50%) and loss of smell (70%) and taste (60%) were the most common symptoms.

Post-COVID-19 symptoms

COVID-19 recovery should not only depend on testing negative for SARS-CoV-2 infection, or positive for antibodies [9]. Since the beginning of the pandemic, many people have experienced chronic symptoms described as post-COVID-19 syndrome, long-term effects of COVID-19, post-acute COVID-19 syndrome, chronic COVID-19, long COVID-19 [10].

Prevalence of post-COVID-19 symptoms

Our study showed that post-COVID-19 syndrome is common, as 28% of the study sample experienced at least one of the Post COVID-19 symptoms studied, with a follow-up (mean) of (346) days from the initial diagnosis. The prevalence of long COVID-19 symptoms in general for COVID-19 survivors in the USA is 45% [6]. Long COVID is an often-debilitating illness that occurs in at least 10% of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections [7]. About 35.9% of 354 COVID-19 patients in France, had at least one Post COVID-19 symptom after a mean of 289.1 days from the initial diagnosis [11]. A recent study published in Jordan showed nearly the same results as our study, with 71.9% of patients experiencing at least one symptom of post-COVID-19 [12]. Post-COVID-19 symptoms have been experienced by most patients, with a wide frequency variation reported in studies, ranging from 35% to more than 70%. The inconsistency in the finding may be due to the multiple different criteria, study design, and time frames used to define Post COVID-19 syndrome in conducted studies.

Post-COVID-19 symptoms

Post-COVID-19 symptoms, in our study, showed the following symptoms: Fatigue (28%), shortness of breath on activity (18%), Social withdrawal (18%), anxiety (17%), forgetfulness (16%), trouble in concentrating [13] and depressed mood (14%). In the north Indian population a study on 1234 patients who were followed up for a median of 91 days, the most common post-COVID-19 symptoms were myalgia, fatigue, shortness of breath, cough, insomnia, mood disturbances, and anxiety [14]. In a Jordanian study, the most common symptoms were found to be dyspnea, fatigue, taste and smell impairment, cough, and depressed mood [12].

Fatigue is one of the most prevalent symptoms experienced by patients during their acute SARS-CoV-2 infection, as early reported in publications during the pandemic [15]. Recent

literature showed that fatigue is the dominant residual feature after COVID-19. Because of its prolonged nature, others linked persistent fatigue after COVID-19 to what is called chronic fatigue syndrome or Myalgic Encephalomyelitis, which is described after serious infections such as SARS and MERS. As yet, there is no definitive pathophysiological clarification of post-COVID-19 associated fatigue [13]. Anxiety, depressed mood, and trouble in concentration could be explained by patients' worries about their persistent symptoms and delay in recovery.

This study showed a significant association between forgetfulness as a Post COVID-19 symptom and smoking ($p = .015$). In two meta-analyses, smoking was found to have a negative outcome in patients with COVID-19 [16,17].

In the present study, persistent fatigue, and SOB with activity as post-COVID-19 symptoms, were found to be significantly associated with obesity, ($p = 0.009, 0.017$) respectively.

It was found that those with obesity take a longer duration of time to get clear chest radiographs, and this is consistent with its association with SOB with activity as a persistent symptom post-acute infection [18]. A retrospective study on a total of 2839 patients, suggested that patients with obesity are at higher risk to develop post-COVID-19 symptoms [19]. Ellen J. Thompson, et al. featured that post-COVID-19 was found to be associated with pre-existing comorbidities and psychiatric conditions. The increased risk was encountered with a pre-pandemic presence of asthma and obesity but not with diabetes [20]. In our study, we found that trouble in concentration and depressed mood were significantly associated with being diabetic ($p = 0.047, 0.020$) respectively. A study from Northern India showed that hospitalized patients and those who had hypoxia during the acute phase of the disease were more likely to develop post-COVID-19 sequelae [21]. Not unexpectedly, in our study, the shortness of breath in the long term was found to be significantly associated with the severity of acute disease ($p = 0.000$).

The strength of the study

This study assessed Post COVID-19 syndrome status according to WHO case-report form. In our study, the sample was all patients who got the infection at least 12 weeks before the assessment among those attending our clinic. Thus, the response rate was 100% due to trust in our team as a family healthcare provider. All data were collected by the author and the coauthor who are medical officers, which adds to the credibility of the collected data. The study can serve as a prototype for other future studies in different working environments.

Limitation

The study sample is somehow small and despite meticulous data collection, recall bias is still a possibility.



Conclusion

Most of COVID-19 patients 90% were symptomatic with only 5.3% rated as having the severe or critical disease. All study patients recovered completely (72%) or partially with chronic symptoms (28%).

Interpretation and recommendation

The proportion of post-COVID-19 illness was (28%) calling for public health authorities to continue to follow the long-term consequences of COVID-19 infection and the medical and psychological needs of affected citizens. Prevalence estimates for long COVID vary widely,

Contributors: The authors conceptualized the study collected, analyzed the data, wrote the report, and approved the final version for publication.

Acknowledgment

We are grateful to all patients who participated in this study.

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