Post Covid-19 Syndrome: A Cross Sectional Study in Baghdad

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Abstract

Many patients are being released from hospitals without follow up and thorough assessment of their recovery.Iraq is one of the countries that were hit hard by this novel disease, but till now there is little literature on the sequelae of this illness after recovery. The aim of our study is to assess the prevalence of post covid 19 syndrome and the characteristics of post covid 19 symptoms. A cross sectional study using interview based questionnaires of 165 recovered covid 19 subjects (mean age 37±14)and 67% of them were female. The prevalence of post covid 19 in the study sample was (66.7%), out of them (52.7%) reported acute post covid 19 symptoms, (18.2%) reported long post covid symptoms, and (29.1%) reported persistent post covid 19 symptoms. The most frequently reported symptom was fatigue (29%) followed by hair loss (23%) and anosmia/ parosmia (21.2%). All of the patients who were in critical condition during the illness developed post covid 19 syndrome. So a prolonged follow up of the recovered patients seems necessary, regardless of their initial clinical presentation.

Keywords: *Iraq, post covid-19, Long covid, duration, fatigue, critical, risk factor.*

Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the organism responsible for coronavirus disease 2019 (COVID-19) rapidly evolved into a global pandemic[1]. It is regarded as a contagious disease of the respiratory system[2]. With a population approximately 200 million and 177 million recoveries, Iraq ranks twenty third among the most affected countries globally and third in the Middle East with a total cases of 1,564,828 individuals and the death count was 18,347 people[3]. The symptoms of COVID-19 range from cough, dyspnea, fever, fatigue and myalgia in mild cases to severe acute respiratory syndrome and respiratory failure in patients that are critically ill and require hospitalization and even intensive care unit admission[4]. Although the symptoms are mainly respiratory, they are also accompanied by olfactory, gustatory, cutaneous, cardiovascular, renal, gastrointestinal, and hematological manifestations[5]. Although the focus is mainly on the acute management of Covid-19 there is more efforts directed towards the post-Covid-19 symptoms. The increase in the number of people recovering from COVID-19 and the emergence of its sub-acute and long term effects makes it necessary to delve deeper into the subject. Previous coronavirus infection survivors, including the SARS epidemic of 2003 and the Middle East respiratory syndrome (MERS) outbreak of 2012, have displayed persistent post discharge symptoms similar to long term effects of COVID-19[6-9]. Based on recent

literature, the following integrative classification is proposed:"potentially infection related symptoms (up to 4-5 weeks),acute post covid symptoms (5-12 week), long post covid symptoms(12-24 week), and persistent post covid symptoms (more than 24 weeks)"[10].The aim of this study is to assess the frequency and the characteristics of post-COVID-19 manifestations.

Materials and Method

Study Design:

A cross sectional observational study was performed in Baghdad, Iraq. The study involved 165 recovered covid 19 subjects for evaluation of the prevalence of post covid 19 by interview based questionnaire. The questionnaire consisted of socio-demographic data including age, gender, smoking status, the presence of comorbidity and the severity of covid 19 disease and whether they needed hospital or ICU admission. The questionnaire also inquired about post covid 19 manifestation including persistent cough, chest pain, dyspnea, palpitation, myalgia, fatigue, arthralgia, hair loss, anorexia, anosmia, mood swing, insomnia.

Data Collection:

The resident physician collected the relevant data in outpatient clinics in Baghdad from 22 of May to the first of September 2021 by face to face interview of 205 individuals recovered from covid 19 for at least one month and after excluding the subjects who didn't meet the inclusion criteria the total population was 165 individuals.

Inclusion and exclusion criteria:

The study included recovered covid 19 patients with initial real time positive PCR assay followed by two consecutive negative RT-PCR assays, they were above 18 years old from both sexes excluding any patient who did not meet the criteria above.

Statistical Analysis

Descriptive statistical analysis was performed using a statistical package for social science (SPSS-24). Descriptive statistics, such as frequencies, percentage for the presentation of categorical data, and mean, standard deviation (SD), were employed for continuous variables.

Results

The study involved 165 participants, the mean age was 37.67 (SD 14.75) and the range was 18-80 years, and there were 54 male (32.7%)and 111 females (67.3%). Smoker participants were 25 (15.2%) and nonsmoker were 140 (84.8%) the participants that had comorbidities were (22.4 %).

Table 1 the socio demographic data among the study sample N=165

Socio-demographic data	N %
Age/years	
Mean ± SD	37.67±14.75

Cont... **Table 1 the socio demographic data among the study sample N=165**

≤ 30 y	75(45.5%)
31-40 y	26(15.8%)
41-50 y	27(16.4%)
50 y	*37(22.4%)*
Gender	
Male	54(32.7%)
Female	111(67.3%)
Presence of comorbidities	
Yes	37(22.4%)
No	128(77.6%)
Smoking status	
Smoker	25(15.2%)
Non smoker	140(84.8%)
Severity of the disease	
Mild/Moderate	146(88.5%)
Sever	14(8.4%)
Critical	5(3.03%)

At the time of the collection of the data, the mean time since recovery from the illness was 31 ± 18 weeks.

The clinical spectrum of SARS-CoV-2 infection was classified into mild/moderate, severe, and critical[11]. Participants with mild/moderate illness were 146 and those with severe illness were 19 out of them only 5 were in critical condition.

Of the 165 participants only 17 required hospital admission and from those 17 only 5 needed ICU admission. Among the 165 participants, 110(66.7%) reported post covid 19 symptoms.

In regard to the age group, less than 30 years showed the highest rate of infection with covid 19 (45%) , while the development of post covid19 syndrome was more in the age group 31-40 years (73%).

Out of the total study sample (52.7%) reported acute post covid 19 symptoms, (18.2%) reported long post covid symptoms, and (29.1%) reported persistent post covid 19 symptoms[10]. Figure 1

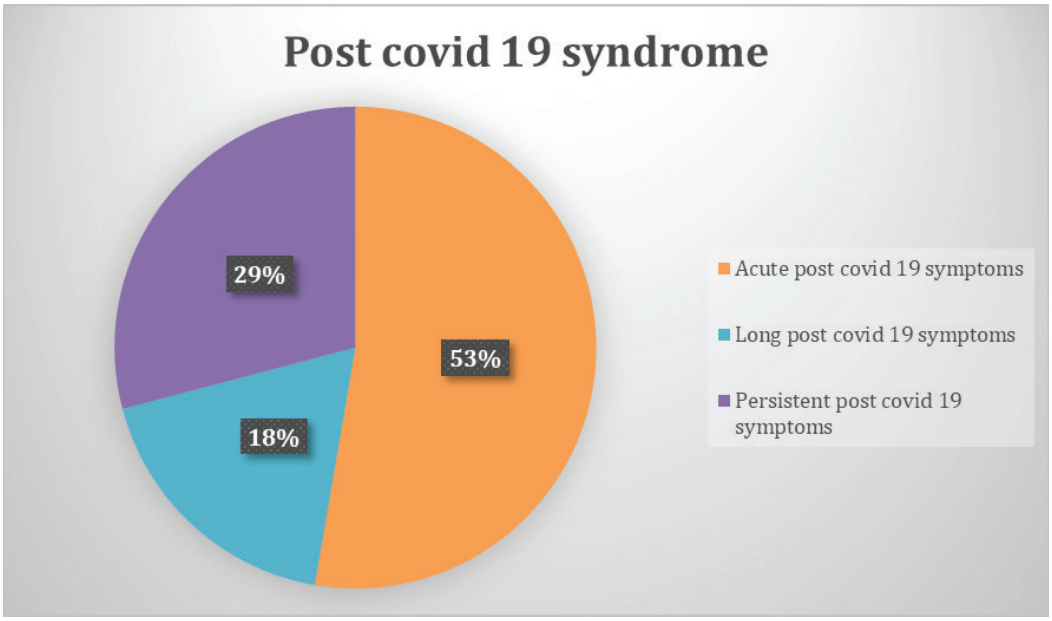

Figure 1: classification of post covid 19 symptoms: acute post covid symptoms (5-12 week), long post covid symptoms (12-24 week), and persistent post covid symptoms (more than 24 weeks)

The prevalence of post covid 19 symptoms in the patients who were in critical condition was (100%) while those who had severe illness the prevalence of post covid 19 symptoms was (64.2%) and the prevalenceof post covid 19 symptoms in those who were in mild/moderate condition is (65.7%).

The most frequently reported symptom is fatigue (29.1%), hair loss (23.0%), anosmia/ parosmia (21.2%), arthralgia (20.0%), insomnia (16.4%), dyspnea (15.8%), mood swing (15.8%), chest pain (15.2%), palpitation (13.9%), cough (12.7%), anorexia (8.5%), diarrhea(1.8%), and oblivion (1.8%).Figure 2

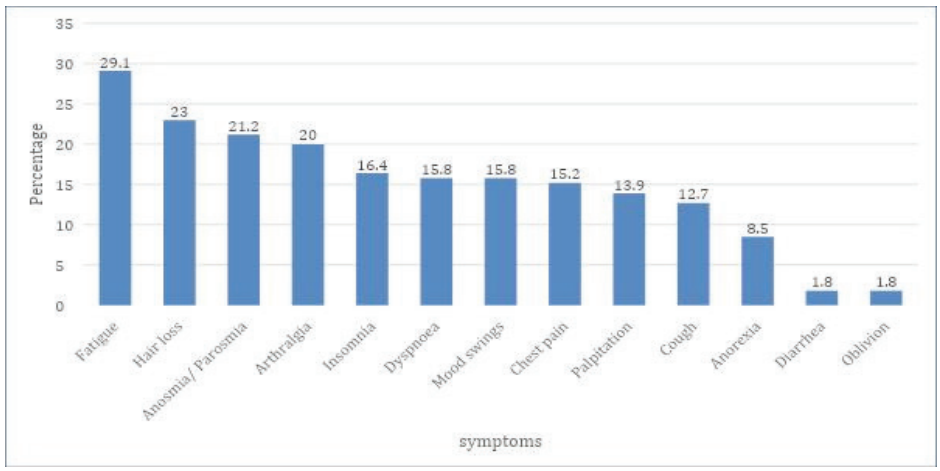

Figure 2: The percentage of post covid 19 symptoms in the study sample

Discussion

In the light of the covid 19 pandemic and its great impact on Iraq and since there is limited data on this novel disease especially in our country the aim of our current study is to describe the prevalence of post covid-19 symptoms and its characteristics.

In the review of previous studies, a meta-analysis shows that post covid 19 symptoms are present in more than 60% of patients[10],another study in Bangladesh found that 70% of people infected with covid 19 developed post covid symptom[12], this is consistent with our study that also found that 66.7% developed post covid 19 symptoms.

To assume that COVID-19 ends with the resolution of its symptoms and the avoidance of mortality currently cannot be accepted as the evidence shows that covid 19 affects multiple systems in the body mainly the respiratory system By analogy with post-sepsis syndrome and post-ICU syndrome COVID-19 infection may result in long-term effects named as post COVID syndrome.

The current study found that the most reported post covid symptom was fatigue in accordance with follow up studies in the United Kingdom, Italy andBangladesh which also revealed that fatigue is the most frequent symptom among individuals with post covid[9, 12, and 13]. Correspondingly after SARS some patients developed chronic fatigue syndrome/ myalgic encephalomyelitis (CFS/ME) [8].

As shown in Figure 3, our study indicated that the prevalence of post covid 19 is more in women, in line with our study another study in Switzerland found that women more often reported at least one persistent symptom [14]. And the prevalence of post covid symptoms is more in non-smoker in comparison to smokers, we didn't find a significant difference in the prevalence of post covid 19 in those who had comorbidities and those who didn't, this is consistent with a cohort study in France[15].

Although it's not clear why some people develop persistent post covid 19 symptoms and others don't, severe covid 19 illness that require intensive care admission was found to lead to persistent post recovery symptoms[16, 17]. This is termed as post intensive care syndrome[18], in our study those who were in critical condition and required management in intensive care unit, all of them developed post covid 19 syndrome.

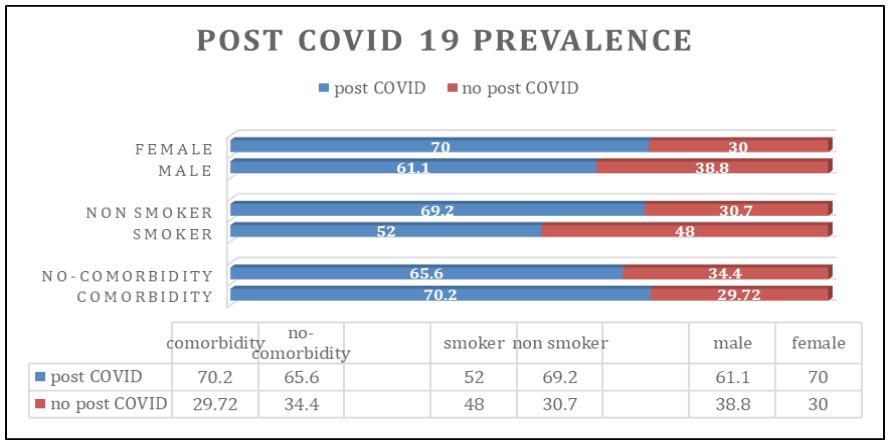

Figure 3: Post covid 19 prevalence according to gender, smoking status and the presence of comorbidities

Following a severe systemic inflammatory response syndrome and excessive release of inflammatory cytokines post covid 19 patients are at great risk of developing subsequent pulmonary fibrosis and may be the persistent symptoms of fatigue, dyspnea, cough and weakness are the early manifestation of the lung fibrosis[19, 20], in the current study (15.8%) reported difficulty breathing, and (12.7%) reported cough this might be explained by persistent fibrotic changes in the lung.

Limitations:

Our study had certain limitations, first of all,our study sample was from the outpatient clinic so the sample is not entirely representative of the targeted population. Secondly, the study is cross-sectional so we didn't have to follow up, further follow up would carry a better understanding of the progression of post covid 19 symptoms. Finally, the sample size was small. Studies in the future should have more diverse and bigger sample sizes.

Conclusion

Majority of COVID-19 recovered individuals have a wide variety of persistent symptoms that impact their everyday functioning,which is now referred to as post COVID syndrome. Several elements may influence the development of this condition. Age, gender, smoking and the presenceof pre-existing medical conditions are all factors to consider.

Even though all subjects recovered from COVID-19 should be monitored for long-term evaluation and management of post COVID symptoms, our study found that patients with critical conditions had the highest riskof developing post COVID syndrome, emphasizing the importance of close monitoringof this group.

Conflict of Interest: The authors have no conflict of interest to declare with the materials presented in the paper.

Source of Funding: Self.

Ethical Clearance: Not required.

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