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Most Persistent Symptoms after Recovering From COVID-19 in Kirkuk City, Iraq

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ABSTRACT

The COVID-19 pandemic has affected millions of people worldwide, many people recovering within a few weeks, while others experience persistent symptoms long after the disease has resolved. This study aimed to identify the most prevalent and persistent symptoms reported by individuals who have recovered from COVID-19. Questionnaires were distributed to 87 participants [male and female] in Kirkuk City, Iraq who had recovered. The most common persistent symptoms were fatigue (recorded in 51.7% of participants), hair loss 42.5%, joint and muscle pain 39%, Dyspnea 25.3%, headache 31%, anxiety 20.7%, and chest pain. 20.7%, cough 11.5%, Dysgeusia 8%, Anosmia 19.5%, heart problems 24.1%, depression 27.5%, anemia 14.9%, vitamin D and B12 deficiency 20.6% and 12.6% respectively and sleep disturbances 33.3%. Our findings indicate that persistent symptoms after recovery from COVID-19 are diverse and prevalent, and can significantly affect the quality of life of infected people. Clinicians should be aware of these symptoms and consider them while managing and monitoring COVID-19 patients. More study is required to better understand the mechanisms underlying these symptoms and develop suitable treatments.

Introduction

Coronavirus is a zoonotic virus that is an RNA virus in the Coronaviridae family. It is a group of viruses that cause respiratory illnesses and were first identified in 1937 as coronaviruses due to their crown-like appearance under microscopy [1]. China reported the first case of COVID-19 in November 2019. COVID-19 is typically transferred by contact with an infected person's cough or sneeze. It also spreads when a person touches a virus-infected surface or object and then touches their eyes, nose, or mouth. The COVID-19 virus can survive for up to 72 hours [2]. Surviving COVID-19 may be only the beginning of many challenges on the lengthy road to recovery for patients infected with the virus. Although there isn't enough data to properly establish and define post-COVID-19 syndrome, an increasing body of research suggests a wide range of physical, psychological, and cognitive issues may be experienced by virus survivors [3]. In Shaima's study, 87.4% of patients who recovered from the condition reported continuing to suffer from at least one symptom, particularly tiredness and dyspnea [4]. The most frequently reported signs among Covid-19 patients were: cough, fever, dyspnea, musculoskeletal problems (myalgia, joint pain, Fatigue), gastrointestinal symptoms, anosmia, and others. However, there is a lack of data on symptoms that continue after recovery. So we investigated the symptoms that remained after patients were discharged from the hospital after recovering from COVID-19 in Kirkuk City.

Methods

In this written work, a questionnaire was prepared and given to 87 persons who recovered from Covid-19 after being discharged from the hospital after the last negative Covid-19 swab in Kirkuk city, Iraq.

Results and discussion

Table (1): Symptoms after recovering from covid-19

The symptoms	No. (%)
Fatigue	45 (51.7%)
Headache	27 (31%)
anxiety	18 (20.7%)
Dyspnea	22 (25.3%)
Chest pain	18 (20.7%)
Joint and muscle pain	34 (39%)
Cough	10 (11.5%)
Dysgeusia	7 (8%)
Anosmia	17 (19.5%)
heart problems	21 (24.1%)
Hair loss	37 (42.5%)
Depression	24 (27.5%)
Anemia	13 (14.9%)
Vitamin B12 deficiency	11 (12.6%)
Vitamin D deficiency	18 (20.6%)
Sleep disturbances	29 (33.3%)

In the current study, a group of symptoms that persisted after complete recovery from Covid-19 were monitored in 87 patients. Fatigue was the most common symptom, accounting for 45 (51.7 %) of the total, the results indicate that an abnormality in the inflammatory response pathways is responsible for chronic fatigue post-viral infection [5] Comparing individuals who recovered from West Nile virus infection with and without post-infection tiredness, Garcia et al. [6] studied the expression of cytokines in the former group, Higher levels of IL-2, IL-6, 12p70, GM-CSF, IFN-, and IFN--inducing protein 10 (IP-10) were found in patients who complained of fatigue. Hair loss was also noted at 37 (42.5%), a high percentage when compared to the other symptoms. The following mechanisms, such as antigen mimicry between the virus and hair follicles, cytokine shift and tissue death brought on by COVID-19 that further exposed auto antigens, could relate COVID-19 to hair loss. Hair loss can also be exacerbated by the psychological stress caused by the COVID-19 pandemic [7]. Joint and muscle pain persisted in 34 (39%), Patients with COVID-19 were tracked for 6 months after being released from the hospital in multiple studies conducted in Turkey, France, and Italy. Sixty per cent of patients continued to have covid-19-related symptoms. Fatigue, myalgia, and joint pain were the most common, with an average incidence of 30%, 20%, and 15%, respectively [8, 9]. The cytokines released, such as IL-1 and IL-6, have the ability to interact with pain receptors and induce pain. Direct viral invasion of muscle cells can potentially cause acute pain. Muscle cells have ACE2 receptors, which act as an anchor for covid-19. Viral invasion causes local inflammation and pro inflammatory cytokines, which cause pain following infection [10]. Sleep disturbances, depression, and anxiety persisted at29 (33.3%), 24 (27.5%), and 18 (20.7%) respectively. In the study Deng et al [11] which included 31 studies assessing sleep problems, depression, and anxiety in patients recovering from corona, the average rate of depression was 45%, anxiety 47%, and sleep disorders 34%.Several factors are likely to be responsible for these psychological symptoms, including a lack of contact with family and loved ones throughout the quarantine

period [12]. Fear of illness due to lack of knowledge about the coronavirus [13]. Feelings of blame [14]. And social stigma [15]. Some of the recoveries also suffered from anemia, Vitamin D deficiency and vitamin B12 deficiency, at a rate of 13 (14.9%), 18 (20.6%) and 11 (12.6%) respectively, COVID-19 is causing food shortages to exacerbate. Stress, whether before or after illness, reduces important nutrient storage. More than 22 different dietary factors (multiple nutritional deficits) influence infection outcomes. People who are more prone to become infected as a result of MND are also more likely to develop long-term symptoms (long COVID) [16].

Anosmia and dysgeusia were also observed in 17 (19.5%) and 7 (8%) of the recovered, respectively, and lasted for more than two months for some. Anosmia and dysgeusia have frequently been noted as the primary signs of COVID-19 infection in people. While many reports that these symptoms persist even after recovery, Most of the time, the cause of dysgeusia is unknown [17]. The most probable cause of dysgeusia is postulated to be associated with the peripheral neurotropism of covid-19 or direct poisoning of olfactory epithelium or taste buds [18]. In addition, the pathophysiology of anosmia involves inflammation and cytokine release brought on by the infection, which changes neural signalling and causes patients to lose their sense of smell [17]. Sensorineural anosmia can develop as a result of sensory neuron damage in the olfactory bulbs [19]. Covid-19 drugs have been linked to arrhythmias, heart failure, and microvascular angiopathy, all of which can have serious consequences for a patient's quality of life. In this study, the percentage of those with heart problems after recovery was 21 (24.1%). Acute cardiac damage due to COVID-19 is anticipated, most likely as the result of a cytokine storm leading to non-ischemic myocardial injury [20]. Early infection not only causes direct damage to cells but also induces inflammatory chemokines and cytokines and cytotoxic immune cell responses. It appears that immune-mediated and viral damage work together to induce heart damage in the later stages of infection. Covid-19 infection causes a complicated cytokine storm that is mediated by several components of the human immune response [21]. Other symptoms that remained after recovery were Dyspnea 22 (25.3%), chest pain 18 (20.7%) and Cough 10 (11.5%), the causes can be attributed to lung damage [22]. Among other symptoms, persistent headaches after recovery became an increasingly common reason for consultation, at 27 (31%).It is obvious that the headache present during the infection's acute phase may continue after recovery, become a major problem for the patient, and maybe result in disabilities [23]. The possibility that headaches may persist after recovery in some patients due to the inflammatory response cannot be ruled out. Significant amounts of inflammatory cytokines are detected 3-9 months after hospital discharge, according to some recent research [24, 25]. Another possible cause is the acute phase inflammation that persists and activates the trigeminal vascular system [26].

Conclusion

The persistent symptoms after recovering from COVID-19 are a significant concern for individuals who have contracted the virus. This research paper has provided insight into the most persistent symptoms, which include Fatigue, Headache, anxiety, Dyspnea, Chest pain, Joint and muscle pain, Cough, Dysgeusia, Anosmia, Heart problems, Hair loss, Depression, Anemia, Vitamin B12 and D deficiency and Sleep disturbances. These symptoms may persist for weeks or months after initial infection, and their duration and severity can vary significantly from person to person. Healthcare providers must be aware of and alert to these signs in survivors of COVID-19 to provide the best possible care. Additionally, more study is required to understand the mechanisms of these long-lasting symptoms further and to create effective strategies to reduce their influence on survivors' long-term health and quality of life.

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