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THE EFFECT OF COVID-19 VACCINATION ON CHRONIC COVID SYMPTOMS

COVID-19 cases, caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), have surpassed 420 million cases globally. Although the disease subsides within 14 days, some infected individuals experience a long-form of COVID-19 (long COVID) wherein the symptoms linger for a prolonged period, i. e., several months after initial infection.

Long COVID can cause multiorgan dysfunction and adversely impact the lives of patients. According to one study, over 85% of the long COVID patients complain of lingering symptoms even after a year post-onset. There is no treatment for long COVID other than general advice, multidisciplinary rehabilitation, and self-management. However, it has been speculated that vaccination against SARS-CoV-2 can help ameliorate long COVID, but there is little evidence to support this notion.

Long COVID patients were categorized in the vaccination cohort if they received a COVID-19 vaccine between the study baseline and 60 days, and non-vaccinated subjects were classified as controls.

Propensity score matching was performed between the two cohorts, and patients were assessed at two intervals during the study, first at 60 days and the other at 120 days post inclusion in the study. Patients were asked to complete an online questionnaire at these intervals enquiring about the symptoms.

Patients reporting the persistence of symptoms had to undertake subsequent assessments with long COVID symptom (ST) and impact tools (IT), which examine the 53 known symptoms of long COVID and six dimensions of lives impacted by the disease.

The data from about 910 adults who had a confirmed or suspected infection and reported persistence of COVID-19 symptoms after more than three months of illness with at least one symptom associated with long COVID was analysed. The median age of the subjects was 47 years, and a large proportion (80.5%) of them were females, and more than 60% had a confirmed history of COVID-19.

Half of the subjects were vaccinated with at least one dose of COVID-19 vaccines. Among the vaccinated, around 359 (78.9%) individuals received the BNT162b2 vaccine, 48 subjects injected with ChAdOx1 vaccine, 47 patients with the mRNA-1273 vaccine, and just one individual received Ad26.COV2.S vaccine.

About 16.6 and 7.5 % of patients, respectively, in the vaccination and control cohorts, had remission of all long COVID symptoms at 120 days after study baseline. The long COVID ST score was slightly higher in the control group (14.8) than in the vaccination cohort (13). The long COVID IT score was lower for vaccinated subjects (24.3) than controls (27).

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6), implying that the impact on patients' lives due to long COVID was significantly lower in the vaccination cohort than in the control group.

Twenty-six patients (5.7%) from the vaccination cohort reported adverse effects following vaccination, with two of them being hospitalized for deep vein thrombosis and meningitis. Some of them (2.8%) reported relapse of long COVID symptoms, and others (1 %) developed known vaccination-induced local and systemic reactions (pain at the site of injection, mild fever, etc.)

Conclusions

COVID-19 vaccination could reduce the severity of long COVID and its impact on patients' lives. With just two serious adverse effects of vaccination in long COVID patients, they suggested that SARS-CoV-2 vaccines are safe for these patients. Moreover long COVID might be due to any of the following three reasons: 1) persistent viral reservoir, 2) stimulation of immune system due to the presence of viral fragments, and 3) autoimmunity due to infection. Nonetheless, further research is required to investigate the exact mechanism of long COVID-19 and develop therapeutics and prophylactic measures for long COVID.

TELEMEDICINE ASSISTING COVID-19 PATIENTS

The ongoing coronavirus disease 2019 (COVID-19) pandemic has been caused by the spread of a contagious virus known as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Despite the commencement of COVID-19 vaccination around the world, the emergence of new SARS-CoV-2 variants has led to a rapid increase in the number of COVID-19 cases, which has also increased COVID-19-related hospitalization and mortality rates.

An introduction to telemedicine

Due to the vast amount of pressure put on hospitals, particularly that which was witnessed during the COVID-19 pandemic, many hospitals were forced to release stable and treated patients to make space for severe cases. Some of the patients who are discharged under this type of pressure could require extended oxygen treatment; therefore, this approach is not ideal. Both healthcare professionals and policymakers have recognized that telemedicine could be an effective tool for the remote treatment of stable patients. Telemedicine is defined as the utilization of electronic information and communications technology to support the health care system.

Previous studies have demonstrated that the implementation of telehealth measures has effectively helped patients who live in remote regions. Furthermore, research has shown that practicing telemedicine not only reduces mortality but also decreases the days lost

due to unplanned cardiovascular hospitalizations.

Similarly, during the Ebola outbreak, mobile applications helped trace and monitor confirmed cases. In Taiwan, online communication with healthcare providers through online video calls increased the availability of medical consultants during the SARS-CoV-1 outbreak.

In the current COVID-19 pandemic, telemedicine has played an important role in treating chronically ill patients during the lockdown. Although many available studies cover different aspects of the COVID-19 pandemic, none have addressed the time when COVID-19 patients could be safely released from the hospital.

About the study

In acknowledging the urgent need for managing outpatients, especially after hospital discharge, scientists have conducted a pilot telemonitoring program. The data collected from this program has been published in a recent Research Square* study while it is being considered for publication in BMC One Health Outlook.

In this study, patients were recruited either during the time of being discharged from Barlicki Memorial Hospital in Lodz, or after completing their first outpatient visit six weeks after discharge from another center.

Participants were recruited between December 2020 and May 2021 and were provided with equipment to record daily saturation and heart rate measurement, as well as a tablet for remote data transmission. The researchers also obtained daily reports of cough, dyspnea, and fatigue from the study participants.

Study findings

The researchers monitored thirty patients for at least forty-five days and a minimum of two weeks after spontaneous saturation normalization. The mean age of the study participants was 55 years.

The researchers divided the groups in accordance with their clinical improvement. For example, patients with greater than 10% improvement in their functional vital capacity (FVC) or greater than 15% increase in their lung transfer for carbon monoxide (TL,CO) were considered to be clinically improved patients. Comparatively, patients who exhibited at-rest saturation measurements lower than 94% indicated a lack of clinical improvement.

The non-improvement group exhibited lower than 94% SpO₂ with higher variations in saturation measurements up to day 22. These patients also did not show significantly improved pulmonary function tests two-three months post-hospital discharge. Importantly, the researchers emphasized the lack of data to guide the use of home pulse oximetry or validate it in disease progression.

The researchers observed that participants who missed two or more measurements during the observation period were more inclined to be categorized into the clinically improved group. Furthermore, daily heart rate measurements did not differ between the study groups.

In the clinically improved study cohort, only one patient returned to the hospital because of diarrhea as a post-hospitalization and post-antibiotic consequence. Between both groups, the data on dyspnea and cough intensity were not statistically significant.

Conclusions

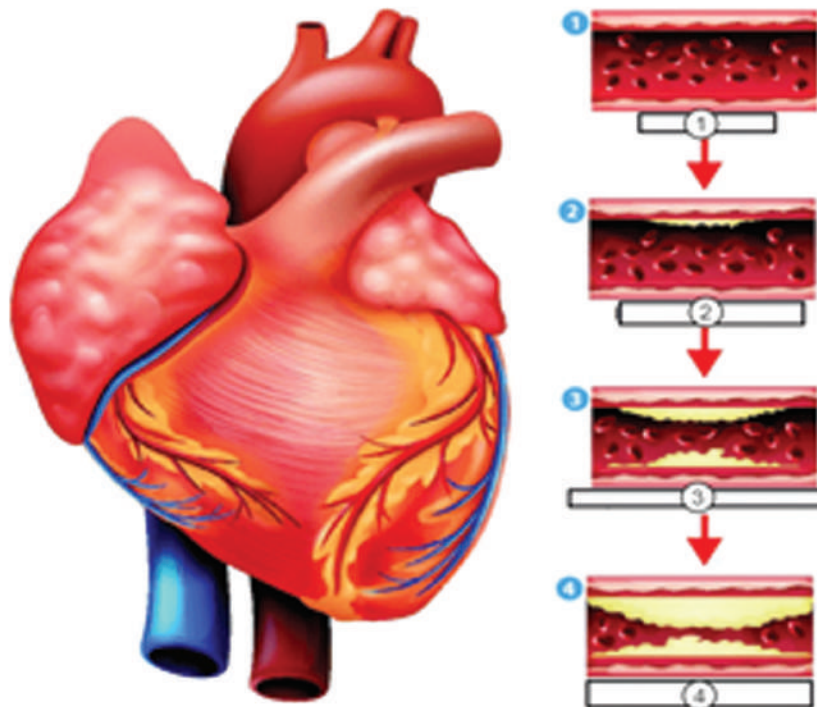
The findings from the current study demonstrate that telemedicine allows for the management of COVID-19 patients in a controlled manner.

One of the limitations of this study is the lack of randomization; however, the key strengths of this study are its longer observation time and the computation of the correlation between patient's pulmonary function tests and pulse oximetry results. This study emphasizes that home oxygen saturation telemonitoring could help predict the trajectory of the disease course.

IDENTIFY AND SELECT THE APPROPRIATE FROM THE PICTURE

Near complete blockage-Health Artery- Plaque obstructs blood flow-Initial fat deposit

Coronary Artery Disease



- 1 _____
- 2 _____
- 3 _____
- 4 _____

STAFF PUBLICATIONS

1. Doppalapudi Sandeep, Suryadevara Vidyadhara, Yallam Sailaja, Battula Sowjanya Lakshmi, Nayudu Vanya. Formulation and Evaluation of Atorvastatin Solid Dispersions using Entada scandens seed starch as Superdisintegrant. Research Journal of Pharmacy and Technology.
2. Rahamthulla Shaik, Bala Sowmya Samanthula, Sundara Karthik Pulivarthi, Pramod Kumar Adusumilli. Knowledge, Attitude and Practice of Contact Lens Users among South Indian Population. Indian Journal of Pharmacy Practice. Vol 14, Issue 4 , 239-244.
3. Doppalapudi Sandeep, Suryadevara Vidyadhara, Padarathi Pavan kumar. A Survey On Internet Gaming Disorder And Its Evaluation Among Students Of Guntur District. Journal of Cardiovascular Disease Research. Volume: 12, Issue: 5, 1999-2005.

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