

Editorial

Addressing Post-COVID Fibrosis and Illness: A Call to Action

The ongoing pandemic COVID-19 has created unprecedented challenges for mankind across the world. This global crisis has prompted a change in priority of the health system reorganisation. Although mortality is not beyond control, morbidity and post-COVID illness in absolute numbers are excessive. Hence, to address this grim situation is highly important and worth focusing at this stage, since the number of patients with post-COVID disability continue to rise despite the decline in the overall cases of the pandemic.

We have been encountering many post-COVID patients experiencing multiple symptoms of varied illnesses even many weeks after being discharged from the hospital. These patients have mostly pulmonary symptoms primarily due to COVID induced pneumonia. In addition to respiratory symptoms, the most common symptoms remain fatigue (seen in more than half of patients) and cognitive dysfunction, seen in one-third of the patients.¹ Within a few months' time COVID-19 survivors complain mainly of fatigue or muscle weakness, insomnia, anxiety and/or depression.

However, at this moment no one knows how long these symptoms are likely to last and what will be the fate of lung parenchymal damage. Nevertheless for many patients it will remain as an obstacle for long enough to resume normalcy in their work-life. The degree of lung damage and the quality of care at the intensive care unit (ICU) usually influence the range of long-term pulmonary outcomes of the patients. Neuromuscular impairments occur in nearly half of the patients who have prolonged ICU stays due to critical illness polyneuropathy, which can lead the ongoing dysfunction for greater than five years in about 85% of the individuals. Pulmonary dysfunction may be seen in up to half of individuals with a long term need for ventilators by a few patients. In fact, for individuals that require artificial respiration on a ventilator for over three days, 65% are likely to have functional deficits at one year, 75% likely to have cognitive impairment at discharge and 45% likely to have it at one year, and more than 25% will have significant psychiatric issues related to their illness, including major depression and post-traumatic stress disorder in the first year after discharge.² The prolonged hospitalisation, physical debility and need for ventilator support alone could result in significant physical, emotional, cognitive and functional deficits that require both acute care and long-term rehabilitation

interventions in those who develop central nervous system dysfunction from ischaemic episodes.³ The persistent post-COVID dyspnoea and fatigue have been reported not to be correlated with the severity of the disease, or to routine markers of inflammation and cell turn over, or pro-inflammatory molecules. However, pre-existing depression and anxiety are over-represented.⁴

Rehabilitation is essential for patients with prolonged suffering from moderate to severe sequel of COVID-19. Severely ill patients on high flow oxygen or ventilator support for longer duration and having more severe impairment with decreased pulmonary diffusion capacities and abnormal chest radiograph are the key population for rehabilitation.⁵ Rehabilitation after COVID-19 is a need and constitutes a challenge for a large number of post-COVID-19 patients. Many of these patients require rehabilitation not only for pulmonary but also for neurological (motor dysfunction, neuromuscular and cognitive dysfunction), physical, social and vocational purpose.³

The monitoring of the progress and recovery should be organised to assess whether a more intensified multi-disciplinary rehabilitation programme is needed. The complications from COVID-19 can be reduced by (1) delivering inter-disciplinary rehabilitation that is initiated early and continued till the need of the patient is met with, (2) educating for own-care after discharge from hospital-centric rehabilitation, and (3) practicing and continuing rehabilitation exercises in the outpatient department (OPD) setting, and at home through ongoing therapy either in-person or via tele-health. This may be initiated in one of the medical rehabilitation centres or in pulmonary rehabilitation centres. It should be patient-centric and multi-disciplinary. A rehabilitation process for post COVID-19 patients should facilitate evaluation of all patients, care of the needy, also uniformity and equal access to the care-taking into account any personal safety and appropriateness of rehabilitation. Pulmonary rehabilitation improves dyspnoea, increases exercise tolerance, improves quality-of-life and reduces health-care utilisation in such patients.⁶ The first step to include/exclude them for rehabilitation is to be done at the time of discharge of COVID-19 patients from hospital. It is important to maintain the continuity of care from hospital stay to post-COVID outpatient or home-based rehabilitation. The assessment should be based on minimum assessment tools for disabilities.

These aftermath symptoms meddle with the social life of the patients at home and at workplace, *i.e.* they have disturbances of activity and participation. So the rehabilitation system for post-COVID-19 patients should ensure uniformity of care, taking into account any diversity, personal difficulties, co-morbidities and environment. Along with other disciplines, like neurology, cardiology, psychiatry, physiotherapy, occupational therapy, and nutrition specialist, the pulmonary rehabilitation of the needy patients should be considered looking at the safety and should include nutrition, postural and airway clearance technique, breathing exercises, stretching, oxygen supplementation, and physical activity.

There is an updated expert opinion and consensus statement, definition, scopes, utilities in addition to both inclusion and exclusion criteria are clearly described.⁷ Us clinicians across the world must find a better way to come up with a uniform protocol for multi-disciplinary pulmonary rehabilitation programme, and focused care to meet the varied needs of such individuals.

Prasanta Raghav Mohapatra

*Member, Editorial Board
and*

Professor and Head

*Department of Pulmonary Medicine and Critical Care
All India Institute of Medical Sciences
Bhubaneswar-751 019 (Odisha), India
Email: prmhapatra@hotmail.com*

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