

Editorial

Rehabilitation of COVID 19 Patients, a Critically Important Issue

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The global outbreak of coronavirus disease 2019 has created an unprecedented challenge to the society. Rehabilitation of this critical illness with high morbidity need to be prioritized in the context of prolonged hospital stay. Coronavirus disease 2019 (COVID-19) is caused by SARS-CoV-2, a newly emergent coronavirus, that was first recognized in Wuhan, China in December 2019. Genetic sequencing of the virus suggests that it is a betacoronavirus closely linked to the SARS virus. By definition, a symptomatic COVID-19 case is a person who has developed signs and symptoms suggestive of COVID-19.¹ While most people with COVID-19 develop only mild (40%) or moderate (40%) disease, approximately 15% develop severe disease that requires oxygen support, and 5% have critical disease with complications such as respiratory failure, acute respiratory distress syndrome (ARDS), sepsis and septic shock, thromboembolism, and/or multi-organ failure including acute kidney injury and cardiac injury.²

Professionals will play a crucial role within the recovery method for people with coronavirus disease 2019 considering the debility, neurological, pulmonary, neuromuscular, and cognitive complications and rehabilitation. Implementation is necessary for the anticipated rehabilitation demands and strategies to meet the wants of this population. COVID-19 perplexities can be reduced by (1) giving multidisciplinary rehabilitation that begins early and be continued throughout the acute hospital reside, (2) providing patient/family education for self-care after discharge from inpatient rehabilitation in either acute or subacute settings, and (3) continuing rehabilitation care in the outpatient department and at home through ongoing rehabilitation or via telehealth.³

Specific airway clearance is not needed in all patients presenting with COVID-19. Till now there have been no reports of having high secretion loads in COVID-19 positive patients. For reducing the risk of transmission

and following usual on-call policies and criteria it is important to keep minimum staff contact with positive patients. So far, COVID-19 patients presenting with features of pneumonia and bilateral patchy shadows or ground-glass opacity in the lungs need hospitalization. This may change as the situation amplify and for that reason, all presenting patients should be discussed with consultant respiratory clinicians or critical care consultants before mechanical devices are used and guidance from a physiotherapist's specific service provider should be followed. Some therapeutic interventions will be contraindicated for patients with COVID-19 which is important to note. Personalized physiotherapy treatments which include mechanical airway clearance or oscillating devices may require for patients with existing respiratory conditions.⁴

In patients with COVID-19, physiotherapy may be beneficial in the respiratory treatment and physical rehabilitation. It is also indicated in patients with COVID-19 who have airway secretions and are unable to clear independently. This may be evaluated on a case-by-case basis and interventions applied based on clinical indicators, and may also be utilized in high risk individuals, e.g., patients with existing comorbidities that may be associated with hypersecretion or ineffective cough (e.g., neuromuscular disease, respiratory disease, cystic fibrosis etc).⁵

Patients should not be routinely referred to physiotherapy if they are acutely unwell and confirmed or suspected case of COVID-19. It is likely to be that there is limited benefit of physiotherapy intervention in the acute stages. Physiotherapists will have a role in the rehabilitation of COVID-19 patients who have not returned to their functional baseline once they are no longer acutely unwell.⁶ WHO recommends limiting the number of health care workers who are in contact with a suspected and confirmed COVID-19 patients and to limit the number of persons present in the room to the absolute minimum required for the patient's

care and support.⁷

For reducing the hospital stay and minimizing functional decline there is a strong evidence suggested that early mobilization with a focus on returning to functional activities will be helpful for the patients. In consequence they can leave the ICU early, and potentially have better long-term outcomes. This phase of management should incorporate a multi-disciplinary approach including measures to prevent avoidable physical and non-physical morbidity, psychological support as most patients have depression, adequate nutrition and an individualized, structured rehabilitation program. This phase should be stepped down to ward-based rehabilitation. Structured individualized exercise program like passive, active assisted, active, or resisted joint range of motion exercises should be prescribed to maintain or improve strength and flexibility.⁵

Physiotherapy is an important intervention that prevents and mitigates the adverse effects of prolonged bed rest and mechanical ventilation during critical illness. Rehabilitation delivered by the physiotherapist is tailored to patient needs and depends on the consciousness state, psychological status and physical strength of the patient.⁸ Common modalities often used by respiratory physiotherapists may be contraindicated in the acute phase as they may further compromise the increased work of breathing. Contraindicated interventions in ICU include diaphragmatic breathing, pursed lips breathing, bronchial hygiene/lung re-expansion techniques, incentive spirometry, manual mobilization techniques or stretching of the rib cage, nasal washings, respiratory muscle training, exercise training and patient mobilization during clinical instability.⁹

Positioning is a vital component of management for the mechanically-ventilated COVID-19 patients, with regular turning recommended to prevent atelectasis, optimize ventilation and prevent pressure sores. Positioning can include lateral (side lying) positioning but may also include prone positioning, which is well-recognized to treat hypoxemic respiratory failure. Prone ventilation may improve lung mechanics and gas exchange, thus improving oxygenation in the

majority of patients with ARDS, and could improve outcomes. With adult patients, prone positioning is recommended for at least 16 hours per day.¹⁰

Physiatrist intervention of patients with COVID-19 disease should be very specific and individualized. Critical patients have coagulopathy, atelectasis, sepsis and inflammatory cascades as cardinal manifestations which do not need any chest physiotherapy rather carry a high risk of aerosol transmission. In the post ICU state the patients will have depression, weakness, wasting muscles and joint stiffness. So they will be particularly benefitted by physiotherapy during convalescence which will reduce the length of hospital stay.

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