

Physiotherapy For Post Covid patients-Factors To Consider

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1. Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a new coronavirus that emerged in 2019 and causes coronavirus disease 2019 (COVID-19). COVID 19 infection led to decreased physical activity and decreased endurance in affected individuals. The death rate is 3 to 5%, with new reports of up to 9%, as compared to influenza at around 0.1%. The rates of admission to an intensive care unit (ICU) are approximately 5%. Around 42% of patients admitted to hospital will require oxygen therapy. Based on up-and-coming data, individuals at highest risk of developing severe COVID-19 disease requiring hospitalisation and/or ICU support are those who are older, male, have one co-existing comorbidity, higher severity of sickness scores (measured via SOFA scores), elevated D-dimer levels and/or lymphocytopenia[1].

Physiotherapy is a recognized profession throughout the world. Globally, physiotherapists play an important role in acute hospital wards and ICUs[2]. In meticulous, cardiorespiratory physiotherapy focuses on the management of acute and chronic respiratory conditions and aims to improve physical recovery following an acute illness. Physiotherapy perhaps valuable in the respiratory management and pulmonary rehabilitation of patients with COVID 19 [3]. The role of Physiotherapists is widely appreciable in post covid rehabilitation also. This paper briefly explains the factors to be considered before giving Physiotherapy for Post COVID 19 patients. Few questions should be asked prior to start the treatment program[4].

1. Was the patient admitted in intensive care unit or isolation facility for Covid 19?

2. How many days the patient admitted in intensive care unit?
3. If the patient intubated or underwent tracheostomy?
4. If the patient received oxygen therapy How many litres of oxygen per hour?
5. How much CT score?
6. Was the patient diagnosed with viral pneumonia?
7. Is the patient has any sleep disturbances?
8. Is the patient has any mood disturbances, depression and anxiety?

2. Assessment

2.1. Subjective

The patient may have functional limitations and decreased endurance. Patient reported outcome measures may be helpful to evaluate symptoms. Patient reported outcome measures (PROMIS) may be useful to identify functional limitations[5]. To assess quality of sleep PROMIS bank version 1.0 may be used[6]. The Patient Health Questionnaire-9 (PHQ-9) may be used as a tool to screen depression. To screen for cognitive deficits the Saint Louis University Mental Status Exam may be used[7]. To assess post traumatic stress disorder Primary Care PTSD for DSM-5 (PC-PTSD-5) may be used[8]. A quick review of laboratory investigations including D-dimer and radiological investigations such as X-ray CT chest and pulmonary function investigations if any. Pulmonary function test investigations will reveal the severity of restrictive defects.

2.2. Vital Examination:

The vitals such as blood pressure, pulse rate, respiratory rate and oxygen saturation is an important component before initiating physiotherapy treatment. Care should be taken while taking vital examination to avoid any cross infection.

2.3. Observation:

The physiotherapist should observe patient for any postural changes, use of any assistive device, and quality of gait. The patient should be observed for unsteadiness (quick grasp of balance deficits), facial expressions of discomfort, ease of changing positions, ease of talking. The physiotherapist should note any skin ulcers due to long term hospitalization.

2.4. Palpation:

The physiotherapist should palpate the patient for any tracheal deviation, chest wall expansion with hand placement or using inch tape and also look for any tenderness around the calf muscles, neck, back and shoulder. Pain may be present in neck, shoulder and back if the patient admitted for long term care.

3. Manual assessment of Respiratory motion (MARM)

It is a palpatory procedure based on the physiotherapists interpretation

and estimation of motion perceived by their hands at the posterior and lower rib cage. The physiotherapist using the MARM can determine other aspects of breathing such as rate, regularity, breathing pattern and the relative distribution of breathing motion between upper rib cage and lower rib cage and abdomen[9].

3.1. Percussion:

Mediate percussion technique may be used to assess if there is any lung consolidation or hyperresonant. The physiotherapist should evaluate diaphragmatic excursion using percussion technique. It is mainly useful in ventilated patients. Diaphragmatic excursion is optimistically correlated with lung inspiratory volumes and can precisely reflect the muscle strength and function[10].

3.2. Neurologic assessment:

Sensory examination such as superficial sensation test, deep cortical sensation tests may be assessed to rule out any sensory deficits. Patient should be assessed for gross strength testing for upper limb and lower limb muscles. Additionally tone, deep tendon reflexes should also be tested. The physiotherapist should also assess coordination and ataxia[11].

3.3. Functional tests:

Functional tests are of utmost important in evaluating functional status of the post covid patient. 30 second timed stand test may be useful to evaluate muscle strength in lower limb muscles[12]. Timed up and go test and 2 minute step test[13] of exercise capacity is particularly useful in younger patients. The gold standard is 6 minute walk test to evaluate the functional capacity of covid 19 patients[14]. The 4 item dynamic gait index may also be employed to assess the balance and vestibular disorders[15].

4. Conclusion

This paper highlights the important assessment parameters for post covid 19 patients before starting physiotherapy session. These procedures are pragmatic and easy to assess.

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