

Letter to the Editor

Early Intervention of Physiotherapy Helps to Reduce Hospital Stay and Improve Functional Capacity of Patients with Severe COVID – ARDS

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Dear Editor,

In India, the decision of when physiotherapy should be given to any patient is made by the treating physician. Guidelines of our institute for physiotherapy management in acute care of COVID 19 also stated that physiotherapy intervention was to be given only after the patient has been screened by the treating physician.^[1] Evidence on the correct time to refer a COVID patient suffering from severe acute respiratory disease syndrome (ARDS) to a physiotherapist is lacking.

The severe cases manifest as pneumonia followed by cytokine storm resulting in ARDS.^[2] It is characterized by three stages, namely, the – acute, organizing, and the healing stage resulting in scar tissues formation and fibrosis.^[3]

We observed the effects of evidence based physiotherapy intervention on length of hospital stay and functional capacity (FC) of patients in 4 COVID patients who, were referred by treating physicians in different stages of severe ARDS. Details of the 4 cases is summarized in Table 1.

As seen in Table 1, total days of hospital stay can be summarized as, Case 1 > Case 2 > Cases 3 > Case 4.

COVID affected the FC of patients such that they were unable to accomplish even basic activities of daily living (BADLs) such as self-care, ablutions, standing, and walking at ≤ 2.5 mph. Metabolic energy equivalents (METs) are a standardized system used to quantify energy cost of different physical activities. 1 MET equals to the amount of oxygen consumed by a person at rest which is 3.5 ml O₂/kg body weight/min. BADLs require ≤ 3 METs.^[4]

As seen in Figure 1, case 1 was deconditioned in a span of 55 days during which he received no physiotherapy treatment. Case 2 attained 1.5 METs by the second session; he was more independent than case 1 throughout his hospital stay. Cases 3 and 4 did not have much decline in FC; therefore, they recovered faster than Cases 1 and 2. Case 4 recovered most rapidly.

At the time of discharge, Case 1 was still dependent on oxygen supplementation and had achieved a capacity of only 1.5 METs; he eventually achieved 3.5 METs with telerehabilitation.

Outcomes of our study were influenced by following factors, increase in awareness of the disease in community, day of hospital admission, medial management, age, and comorbidities.^[5,6] Only Case 1 had comorbidities, this may have contributed to the delay in recovery.

Our Municipal Tertiary Care Hospital was converted into a dedicated COVID 19 management facility on April 18, 2020 (2nd lockdown period). Ours was the first government hospital to

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Table 1: Description of all four cases.

	Case 1	Case 2	Case 3	Case 4
Age/gender	42/Male	60/Male	40/Male	54/Male
Comorbidities	Obstructive sleep apnoea, Hypertension	None	None	None
Medications	IL 6 Blocker, Antibiotics, Corticosteroids, Low molecular weight heparin, Hydroxychloroquine, Lopinavir+Ritonavir, Nifedipine	IL 6 Blocker, Antibiotics, Corticosteroids, Low molecular weight heparin, Hydroxychloroquine	IL 6 Blocker, Antibiotics, Corticosteroids, Low molecular weight heparin, Hydroxychloroquine	IL 6 Blocker, Antibiotics, Corticosteroids, Low molecular weight heparin, Hydroxychloroquine
Day of admission post first symptom	8 th Day	9 th Day	5 th Day	3 rd Day
Physiotherapy referral day post-admission	38 th Day	13 th Day	3 rd Day	3 rd Day
Stage of ARDS at the time of physiotherapyreferral	Healing	Organizing	Acute	Acute
Total days of oxygen dependency	47 days	26 days	11 days	9 days
Total length of hospital stay	44 days	35 days	25 days	11 days

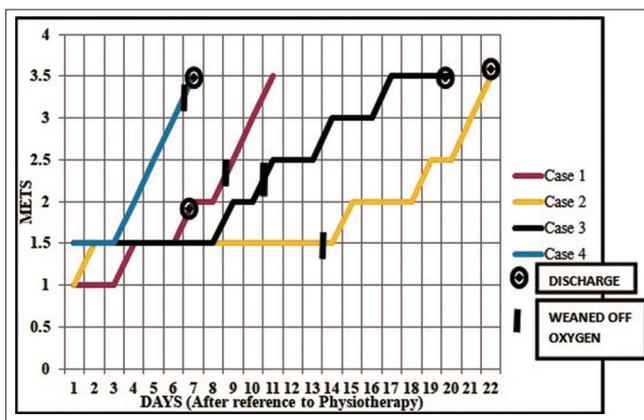


Figure 1: Functional capacities in terms of METs attained in number of days by all four cases after they were referred for physiotherapy.

incorporate physiotherapy in COVID management (May 13, 2020 – the 3rd lockdown period). All four cases were referred for physiotherapy during the 3rd and 4th lockdown period. We observed that as medical management of COVID cases evolved, perceptions of the referring physician regarding the role of physiotherapist also changed over time. Subsequently, patients were referred much earlier for physiotherapy.

To achieve a common goal of weaning off oxygen support, reducing the length of hospital stay and improving functional capacity of COVID patients with severe ARDS, treating physicians should consider reference to physiotherapy as an adjunct to medical management in the early stages.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

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