

The Place of Early Rehabilitation in Intensive Care Unit for COVID-19

To the Editor:

Coronavirus disease 2019 (COVID-19) created a previously unseen pressure on public health systems. A main issue during the peak of the disease is the availability of intensive care unit (ICU) beds to manage the severe complications of COVID-19.¹ Currently, the major focus is on acute care, but the surging number of people who recover from the infection is shifting medical attention to survivors discharged from ICUs.

The challenge of COVID-19 requires a multidisciplinary approach. Rehabilitative intervention should be part of the treatment pathway from the early stages of the disease. There is an urgent need to build a knowledge based on the most effective nonpharmacological measures to ensure the earliest discharge and the best recovery after complicated COVID-19 infection. Multimodal rehabilitation, in every stage of the illness, must be part of a holistic medical approach, but consensus on timing and type of intervention is still missing.

In light of the pressure on ICUs during the epidemic peak, we highlight the role of an often-undervalued approach to reduce the length of hospital stay and the burden on health care systems.

Early physiotherapy in acute respiratory distress syndrome, beginning early in ICU, is a critical therapeutic tool to reduce complications of immobilization in critical illness, such as myopathy, neuropathy, and ventilator dependency. Benefits include improved residual respiratory, musculoskeletal, neurological, and psychological function; it prevents readmissions in the medium and long term, improves health status, and perceived quality of life after discharge.²⁻⁴ Interventions in an acute setting may also motivate active recipients' involvement in their rehabilitation pathway, increasing the compliance with treatment after discharge.

The benefits of early rehabilitative intervention in ICU for acute respiratory

distress syndrome⁵ are clear, but if this approach is appropriate for COVID-19, co-infection is still controversial. There are suggestions that rehabilitation is not required in the acute stage of the condition⁶ or recommended only after weaning.⁷

To clarify this topical issue, authors set up an interventional, two-arm, nonrandomized trial comparing hospital length of stay in individuals receiving early physiotherapy in ICU versus those who did not (NCT04381338). Participants are enrolled in two teaching hospitals in the Veneto region (Padova and Verona, Italy), which each provides a different standard of care, with early intervention in one but not in the other.

In Padova, all individuals with COVID-19 admitted to ICU with a diagnosis of acute respiratory distress syndrome are enrolled, in an early rehabilitation intervention protocol as part of the local standard of care (for details, see <https://clinicaltrials.gov/ct2/show/NCT04381338?term=rehab&cond=COVID&draw=2&rank=1>). At admission, a multidisciplinary assessment confirms enrolment criteria.⁵ Stable cardiovascular, respiratory, and general parameters (ie, fever, thoracic radiography) are mandatory to start and continue sessions (20 mins each, 3 times daily/6 day a week). In Verona, no rehabilitative intervention takes place during ICU admissions.

The program is based on the level of consciousness (Glasgow Coma Scale⁸), regardless of ventilation modality: unconscious individuals (Glasgow Coma Scale score ≤ 8) are offered passive mobilization and pronation, whereas conscious persons start a hierarchical, personalized protocol. The program includes endurance, functional, respiratory, and strength training. Dysphagia, which often complicates intubation, is also treated during sessions.

After ICU discharge, multimodal physiotherapy treatment continues throughout the hospital stay. An individualized program is agreed for home discharge, focusing on recovering autonomous daily-living skills and counteracting muscular and cardiovascular deconditioning.

An assessment on the role of individual clinical history, pre-COVID-19

performance status, preexisting drug therapy, level of ventilator support, hemodynamic and postural management during admission, and complications to correlate with the intervention and outcomes will be made. Findings will provide essential information in case of a new wave of COVID-19 infection and will be instrumental to support timely and personalized rehabilitation in these people.

In view of the difficult circumstances, it is essential that this information is shared, particularly about practices that it is not yet fully cognizant to establish whether they have a role to play.

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