

The role of physiotherapy on the care of patients with Covid-19 in intensive care units

Covid-19 is a pathology reported as a new coronavirus pneumonia (2019-nCoV) that can lead to respiratory failure. Clinical manifestations include fever, dry cough, dyspnea, myalgia, fatigue and radiographic evidence of pneumonia. Organic dysfunctions such as shock, acute respiratory distress syndrome, heart injury and acute renal injury may also occur. Studies suggest that about 5% of patients will need hospitalization in intensive care units (ICU)¹.

The ICU aims, in addition to preserving human life, to provide specialized rehabilitation in the care of critical patients, aiming to optimize the perceived quality of life and the reintegration to society. As such, it is important to have the multidisciplinary support of doctors, physiotherapists, nurses, occupational therapists, speech therapists, psychologists, social workers, among others. Through a therapeutic plan with well-defined goals and objectives, with adequate measures to each clinical case², functional rehabilitation should ideally begin within intensive care and follow a continuum after discharge from the ICU, up to the patient's full recovery.

Early rehabilitation, while still in the ICU, favors a better return of functionality, fewer days of mechanical ventilation, decrease in *delirium*, muscle weakness and days of hospitalization, as well as improved quality of life. Even in a context of more severe cases, such as hypoxemic patients using mechanical ventilation and/or oxygen therapy, physical rehabilitation can start in the ICU, always considering the criteria of stability and safety, as well as the individualized prescription of exercises³.

Thus, with early treatment, sedated patients can benefit from mobilization, passive stretching and functional positioning to maintain muscle and joint integrity. Upon awakening, be they intubated or in spontaneous breathing, patients can start to do more exercises, training higher postures, among others, depending on the level of consciousness and muscle strength, always considering the maximum capacity of the patient. Some techniques that may be useful include mentalizing exercises, performing movements on functional diagonals, peripheral neuromuscular

electrical stimulation, resistance apparatus (weights, dumbbells, elastic bands), exercises in lateral decubitus, and the bridge position. The complaints and functional demands reported by the patient in the ICU should guide the prescribing process and the creation of individualized goals and objectives.

However, the return to activities can be affected by dyspnea and lack of physical conditioning, leading to low tolerance to activities. Cardiopulmonary rehabilitation programs can be adapted for critical patients and the exercises initiated with the use of ergometer cycles, for example, with individually defined time, intensity and frequency (guided by perceived effort scales, such as the Borg scale). Energy conservation techniques can be taught to patients for routine activities.

Covid-19 brings some specificities to the rehabilitation of the patient. Due to hypoxemia, rehabilitation should be monitored, with the possibility of providing oxygen therapy and other therapies if necessary. Therapeutic materials should be strictly sanitized and preferably, used on an individual basis. Hospital-based social isolation, with the absence of visiting hours and contact with the external environment, can contribute to low therapeutic adherence. Understanding the patient's preferences, previous work activities and desires for the future, as well as the possibility of inserting the family through telephone contact or video calls, can help adherence in this process and fulfillment of such gaps.

Therefore, therapeutic approaches to increase the survival of these patients are essential; however, the return of them to society in the most functional way possible is no less important. This issue becomes relevant for the return to their social and family environment, as well as for economic issues; otherwise, the impacts both at the individual level (non-return to work activities) and at the collective level (increased health costs) can be drastic. The rehabilitation process, fundamental role of the physiotherapist, should not be forgotten or minimized even during a pandemic. Early rehabilitation can avoid or minimize

deficits, causing the individual to be discharged in full physical condition or with a lower demand for physiotherapeutic follow-up after discharge.

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