



EDITORIAL

Approach of the physiotherapist in intensive care units in the context of the COVID-19 pandemic

Atuação do fisioterapeuta em unidades de terapia intensiva no contexto da pandemia de COVID-19

Some types of coronavirus can infect humans, causing severe respiratory disorders. SARS-CoV-2 is the virus that causes COVID-19, a disease that was first identified in Wuhan, in the province of Hubei, People's Republic of China, on December 1, 2019. On December 31 of the same year, it was officially reported the first case in the world. The disease spread to several countries and, on March 11, 2020, the World Health Organization defined the outbreak as a pandemic [1]. Upon the writing of this editorial, there were more than 2.4 million confirmed cases in 213 countries, with more than 163,000 deaths recorded worldwide due to COVID-19 [1]. In Brazil, the first case was confirmed on February 25, 2020, with a progressive increase in the number of people affected in several states. Currently, we have over 40 thousand confirmed cases and a lethality of 6.3% [2].

Statistics show that 80% of individuals diagnosed with COVID-19 do not require hospitalization. Among the 20% hospitalized, only 15% will need access to intensive care. In this context, several actions by health care regulatory agencies in many countries are being taken to mitigate the high demand for beds, equipment and professionals necessary to fight the pandemic. In addition, class entities and professional associations around the world have published guidelines to guide the approach of patients with COVID-19 [3-5]. In Brazil, the Brazilian Association of Cardiorespiratory Physiotherapy and Physiotherapy in Intensive Care (ASSOBRAFIR) makes available on its website several recommendations for action against COVID-19 [3].

In the intensive care setting, the Brazilian physical therapist is at the forefront of the advanced respiratory support, based on the best scientific evidence. However, the infection caused by SARS-CoV-2 has never occurred before, bringing a new challenge to all researchers and health care professionals. COVID-19 emerged a few months ago and spread rapidly around the world, with not enough time for the development of clinical trials, let alone systematic reviews that can direct interventions. Recommendations for treatment have been developed based on the experience of countries that have faced or are facing a large number of cases of COVID-19, in publications on the treatment of other coronaviruses, such as the Middle East Respiratory Syndrome (caused by the MERS coronavirus-CoV) and Severe Acute Respiratory Syndrome (caused by the SARS-CoV coronavirus), as well as in studies on Acute Respiratory Distress Syndrome (ARDS) [4].

Due to the high risk of contamination, there are differences between the general intensive care environment and an ICU for patients with COVID-19. In the latter, it is essential that professionals use personal protective equipment (PPE), including long-sleeved gowns, gloves, mask with high filtration capacity (N95 or FFP2),

cap and face shield or goggles [1]. These devices bring discomfort to professionals and can even cause skin lesions, such as those caused by the face mask [1]. In addition, the percentage of mechanically ventilated patients with severe respiratory failure is extremely high. Patients on spontaneous ventilation can suddenly evolve to the need for intubation and the institution of mechanical ventilation, which can last for up to 2 to 3 weeks. For this reason, if not all, the vast majority of patients are undergoing oxygen therapy or invasive mechanical ventilation, requiring intensive physical therapy.

The worsening of the disease is characterized by significant hypoxemia, resulting from different pathophysiological processes that affect the ventilation-perfusion ratio [6]. In general, the use of low-flow oxygen therapy devices, such as the nasal catheter and non-rebreathing mask with a reservoir bag, it is recommended to minimize the dispersion of aerosols since the disease is highly contagious through droplets containing the virus [3]. The application of high flow nasal oxygen therapy or non-invasive ventilation, even under conditions of biosafety considered "ideal", involves several questions regarding its risk-benefit ratio. During invasive mechanical ventilation, to avoid dispersion of aerosols, a closed suction system and a heat and moisture exchanger filter should be used near the patient's airway, as well as a barrier filter connected at the end of the expiratory branch of the ventilation circuit [3]. The protective ventilation strategy is recommended, consisting of the application of volumes and pressures that do not cause alveolar hyperdistention, in addition to adequate values of positive end expiratory pressure (PEEP) [3-6]. The use of the ARDSnet's "PEEP Table" (predetermined combinations of PEEP and inspired oxygen fraction - FiO_2) is controversial for patients with COVID-19, as many individuals have severe hypoxemia with little or even normal respiratory system compliance, not being responsive to the increase in PEEP. Conversely, unnecessary elevation of PEEP can overload the right ventricle and increase the lung perfusion impairment. Therefore, PEEP should be adjusted individually, preferably by using a decremental protocol for its titration. Another procedure that has been widely used is the prone position of patients with severely compromised gas exchange (PaO_2/FiO_2 ratio < 150) [3-5]. As it involves risks and contraindications, this conduct must be carried out carefully and by trained staff, considering that not all patients will be responsive to it. Since MV is one of the risk factors for intensive care unit-acquired weakness and these patients remain on ventilation for up to 3 weeks, we must pay attention to early mobilization/therapeutic exercises in this context [3]. The physiotherapist, as a member of the multidisciplinary team, also acts in cardiopulmonary resuscitation, aid to tracheal intubation and transport of patients on MV, procedures that have particularities in patients with COVID-19 [3].

The role of the intensive care physiotherapist in the context of COVID-19 is not restricted to the abovementioned examples. Moreover, the therapeutic approach must be individualized. The conduct to be applied comprises frequent evaluations and reassessment, which requires considerable attention and labor from the professionals involved. What we do or do not do may interfere in patients' prognosis. In a single 12-hour turn, the physiotherapist may have to perform numerous procedures in the ICU or COVID Emergency, such as: aid to intubations, multiple pronations and returns to the supine position, many monitoring assessments, PEEP titrations, mechanical ventilation adjustments, alveolar recruitments, conduction of weanings from mechanical ventilation, extubations, participation in cardiopulmonary resuscitations, among others. Due to the respiratory severity of patients and the constant risk of contamination, the work routine in this environment is much more physically and emotionally stressful than usual. On the other hand, this pandemic highlighted the importance of the physical therapist in intensive care, promoting the acknowledgement of the community and among the health care managers.

Fernando Guimarães  *

* Associate Professor at Physical Therapy Department, Head of the Inpatients Section of the Physical Therapy Service at Clementino Fraga Filho Hospital, Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, RJ, Brazil.

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