

A Importância do Desempenho da Medicina Física e de Reabilitação nos Pacientes com COVID-19 em Hospitais de Agudos e Pós-Agudos (Pacientes Críticos e Pós Críticos). A Contribuição da Sociedade Portuguesa de Medicina Física e de Reabilitação

The Importance of Physical and Rehabilitation Medicine Performance in COVID-19 Patients: In and Post Acute Hospitals (Critical and Post-critical Patients). The Contribution of the Portuguese Society of Physical and Rehabilitation Medicine

Catarina Aguiar Branco⁽¹⁾

COVID-19 disease (caused by the SARS-CoV-2 virus) was declared by the World Health Organization (WHO) as a pandemic, on March 11, 2020, being pathogenically and clinically little known, raising fears, without a robust scientific evidence for the intervention and requiring guidance and directives for critical and pos-critical medical care, including Physical and Rehabilitation Medicine (PRM); this last as a medical specialty and a multi-professional, inter and multidisciplinary health area, in the *continuum* of care. Statistics showed 13.8% of cases with severe disease and hospitalization, 6.1% in intensive unit care (IUC) with Adult Respiratory Distress Syndrome, prolonged invasive mechanical ventilation (IMV), neuromuscular sedation and blockade, high risk of acquired muscle weakness (AMW), prolonged and difficult ventilatory weaning; relevant functional deficits, maintained beyond discharge from the IUC and hospital; restriction on future activity and participation; increase in days of hospitalization in the IUC and in patients hospital total stay, with an estimated general lethality rate of 2%.

Thus, in compliance with health measures, patient's and health professional's protection and Health Systems

sustainability (including National Health Service circuits of critical and post-critical patients), several measures and guidelines have been developed by Health Authorities (Portuguese *Direção Geral da Saúde*-DGS and Portuguese Health Ministerium), Scientific Societies, Professional Orders and Professional Associations. Those have been adopted by health institutions and specialties, such as PRM. All them aim to contain the expansion of the disease and mitigate its clinical, functional, activity / participation and economic effects; all goal to plan and implement measures that ensure a timely, appropriate and articulated response of the entire Health System to COVID-19 (but also to all the other pathologies, which remain incident or prevalent), a phase that is still present currently in Portugal. The Portuguese Society of Physical and Rehabilitation Medicine (SPMFR) has collaborated with other Portuguese official institutions in the production of scientific technical documents about "PRM/Rehabilitation performance" in COVID-19 pandemic, such as the DGS standard guideline no. 20/2020 on Rehabilitation Care and Home Respiratory Care published on 03.04.20; has created several task forces, with PRM doctors and other elements of medical scientific societies

(1) President of the Portuguese Society of Physical Medicine and Rehabilitation (SPMFR).PRM Physician, PRM Senior Graduate Hospital Assistant, Centro Hospitalar Entre Douro e Vouga PRM Department Director - Portugal

and professional associations, such as the performance of PRM in critical patients in the IUC (coordination Catarina Aguiar Branco, Afonso Rocha, Inês Machado Vaz and Jonathan Rios), or in other services and post hospital discharge (coordination Anabela Pinto, Catarina Aguiar Branco, Ana Rolo Duarte, Énio Pestana); has produced on its website, with the collaboration of PRM Services/Departments vehicles of technical-scientific home information, in different pathologies, to support patients and health professionals.

The (early) multimodal interventions of PRM (and of the Rehabilitation Care Team) in COVID-19 IUC and pos IUC patients have to be done in close coordination with Intensive Medicine and other specialty / departments. The Rehabilitation Team include, in its core, PRM Physicians, Rehabilitation Nurses, Physiotherapists, Speech Therapists, and in specific cases, Occupational Therapists, that act in respiratory, cardiovascular, neuromuscular, swallowing and phonation areas, under PRM Physician supervision, coordination and monitoring. The COVID-19 clinical features and necessities last through continuing care circuits pos IUC to other in-bed hospital departments, so that PRM multimodal interventions must continue in addition to IUC, as clinical and functional outcomes have already shown us in these last months. So in other critical diseases and functional conditions, they increase, right away, the possibility of early extubating or prolonged ventilatory weaning decreasing, but also reduce the incidence of AMW, central and peripheral deconditioning and functional disability, optimize cognitive, respiratory, cardiovascular, neuromuscular and osteoarticular functions, improve vital and functional prognosis and quality of life of cute hospital critically and post critically ill patients. But the specific cardiorespiratory and neuromuscular characteristics and severity of COVID-19 disease associated with patient comorbidities and critical interventions prolonging hospitalizations, functional deficits or activity decrease in hospital and in post-hospital discharge, lead evidence to guide rehabilitation decisions and interventions in all acute hospital continuum care circuits, but also (important) in post-acute hospitals, regional rehabilitation centers and PRM clinics/community care.

COVID-19 strengthened the necessity of identification of high risk contagious interventions (and PRM health professionals protection); or of those deleterious, either of those, yet, without proven efficacy, in a risk-benefit physiatry assessment and clinical decision regarding recognition of safety criteria for initiation, maintenance or suspension of rehabilitation. These oblige regular PRM medical evaluation,

rehabilitation program review by levels and professional intervention areas and discussion/guidance in rehabilitation team, with the clearing of specific objectives (according to the stages of the disease and its evolution) and early start of a structured, integrated, multimodal, individualized program with different components and rehabilitation techniques. PRM program duration, in all the *continuum* care, depends on the clinical phase, tolerance and individual response to the frequency and specificity of the intervention modalities, on effort and fatigue and on the degree of patient collaboration. These all accomplishes the dynamic clinical character, that COVID-19 patients present and require from PRM professionals (teams and services/departments), showing the rehabilitation human resource allocation necessity (coordinated by PRM physician) in (specific) hospital units and entailing the reinforcement, rearrangement or conception of PRM measures and interventions in COVID-19 patients, These have real impact on the organization and response of PRM care in IUC and other services/departments in acute institutions (including PRM ones). PRM protocols in COVID-19 patients in IUC and pos IUC (hospital e post hospital care), proposed by SPMFR, are defined by sequential levels of intervention. They have the knowledge and agreement of the Portuguese Society of Intensive Care, were published in the SPMFR Website and Scientific Journal and made known to other national and international scientific and health institutions. They begin with PRM evaluation and medical decision, regarding patient medical and technical necessities and interventions risk-benefits; the compliance with safety criteria, evolution and levels of care dependence according to critical patient's consciousness and collaboration, clinical and functional situation, prognosis, family and social supports; in obedience with good practices and the best clinical and ethical judgment by the PRM physician. So, it's urgent (as a goal) to (nationally) plan and implement measures, that ensure a timely, appropriate and articulated PRM/rehabilitation response of the entire Portuguese Health System, in its different levels of care (hospital and ambulatory).

*The COVID-19 disease, leads to a new medical and health dimension: **The (pos-critical and acute hospital) long term COVID-19 patients with multidimensional clinical and functional sequelae and its required rehabilitation. A new reality is emerging: the multimodal, multi-professional and inter-multidisciplinary (PRM) Rehabilitation Care Pos COVID-19, coordinated by PRM Physician. Subject already discussed in international and national PRM academic, scientific, professional and health care institutions.***