

Respiratory Physiotherapy is Effective Subordinate in COVID-19 Patients

Denise Battaglini*

Department of Medicine, University of Barcelona (UB), Barcelona, Spain

Introduction

A respiratory illness epidemic caused by a novel human coronavirus (SARS-CoV-2) was discovered in Wuhan, China, in late 2019. The epidemic, now known as coronavirus disease 2019 (COVID-19), spread quickly over the world and was declared a pandemic by the World Health Organization on March 11, 2020 [1]. SARS-CoV-2 is transmitted by respiratory droplets and human-to-human contact, which are the two most common ways of infection. A mild febrile sickness with dry cough and moderate to severe respiratory distress emerges within a few days of infection. Most COVID-19 patients arrive to the intensive care unit (ICU) with hypoxemic respiratory failure [1], which is the first sign of a terrible systemic illness (MODS-CoV-2). COVID-19 lung presentations are exceedingly diverse, as seen by chest CT scans revealing various degrees of respiratory involvement [2]. As a result, alternative ventilatory methods, such as early chest physiotherapy (CPT) and rehabilitation, may be necessary for different individuals. In general, CPT techniques are regarded critical in patient care during an ICU stay [3]. As noted in a recent publication by the Italian Association of Respiratory Physiotherapists (ARIR) [4], this also applies to COVID-19 patients. Early mobility and rehabilitation may assist to prevent or offset the effects of prolonged bed rest, improving physical function and outcomes while also shortening hospital stays by increasing ventilator-free days. The role of CPT in critically sick patients with SARS-CoV-2 infection has to be investigated because this is a relatively new issue. Recent papers on COVID-19 patients' respiratory physiotherapy offered broad guidelines but did not address severely sick COVID-19 patients [3, 4]. In three groups of COVID-19 patients, the role of respiratory rehabilitation was documented [3].

1) Acute phase, presenting with critical respiratory impairment (emergency department, first aid, ICU, step-down unit);

2) Acute phase, presenting with severe respiratory impairment (internal medicine, respiratory, infectious disease, or other wards); and

3) Post-acute phase, presenting with severe respiratory impairment (internal medicine, respiratory, infectious disease, or other wards) (other units, intermediate care facilities, subacute wards). The current review examined the evidence for the critical role of chest physiotherapy in critically ill COVID-19 patients during mechanical ventilation and after weaning, as well as how it can be safely implemented with careful planning, including healthcare staff training and the proper use of personal protective equipment to reduce the risk of SARS-CoV-2 exposure.

Characteristics of COVID-19 and its management: Hypoxemia and sudden respiratory failure are two respiratory features of severe COVID-19. COVID-19 is linked to unusual respiratory mechanics, such as well-preserved respiratory system compliance, high or low respiratory system compliance [2]. In addition, chest CT scans of COVID-19 patients revealed four distinct patterns of pulmonary involvement:

1) A multifocal, over perfused ground-glass phenotype with centrilobular nodules, patchy consolidation, and intra-bronchial air bronchogram;

2) Septal capillary dilatation and congestion, followed by exudation into the alveolar space with interstitial edema; 3) Vascular exudation in the interstitium. This explains why COVID-19 patients present with an extremely variable clinical course, and why individualized ventilatory strategies are required.

Ventilatory management: COVID-19 treatment at the start of the pandemic was predicated on the designation of respiratory involvement as ARDS-like, which meant low tidal volume (VT; 6 mL/kg PBW) and plateau pressure (30 cmH₂O) with severe PEEP. Low-VT ventilation (48 mL/kg PBW) with PEEP levels titrated according to peripheral oxygen saturation was recommended in the initial guidelines for the care of COVID-19 patients, which backed up this method (SpO₂). However, this should only be used in individuals who have COVID-19-like ARDS. In COVID-19, continuous positive-pressure ventilation (CPAP) or non-invasive ventilation (NIV) with intense breathing effort may be harmful, since it may raise the risk of patient-inflicted lung damage (P-SILI). In order to minimize the formation of P-SILI, which might increase lung damage, prolonged times with non-invasive ventilatory assistance should be avoided, and intubation should be favoured. Additionally, an esophageal balloon should be introduced in non-intubated patients to keep the pressure below 15 cmH₂O, reducing the incidence of P-SILI. Early intubation, on the other hand, should be approached with caution since endotracheal intubation and mechanical ventilation can both cause lung injury. As a result, the decision to use early intubation or not should be carefully considered. The phenotypic of the patient may help differentiate the cardiac anomalies documented in COVID-19. Because of the projected reduced ventilatory pressures and tidal volumes supplied to the lungs in the phenotype-1/L-type, right heart dysfunction is expected to be less visible than in the phenotype-3/H-type [5].

1.3. Mechanically ventilated COVID-19 patients: Physiotherapy has been shown to help ICU survivors improve their long-term physical function. However, the genuine efficacy of chest physiotherapy in the ICU is debatable, particularly in patients who have already had alveolar injury [3, 4]. The ARIR recently published a position paper concerning the role of chest physiotherapy in COVID-19 patients [3], suggesting limitation of some procedures- such as diaphragmatic breathing, bronchial hygiene, lung re-expansion techniques, manual mobilization, respiratory muscle training, nasal washing, and exercise training- in the acute phase of the illness. According to the research, physiotherapy techniques cause considerable alterations in respiratory function, as

*Corresponding author: Denise Battaglini, Department of Medicine, University of Barcelona (UB), Barcelona, Spain, E-mail: battaglinid@gmail.com

Received: 02-Feb-2022, Manuscript No. jnp-22-55532; **Editor assigned:** 04-Feb-2022, PreQC No. jnp-22-55532(PQ); **Reviewed:** 18-Feb-2022, QC No. jnp-22-55532; **Revised:** 24-Feb-2022, Manuscript No. jnp-22-55532(R); **Published:** 03-Mar-2022, DOI: 10.4172/2165-7025.1000509

Citation: Battaglini D (2022) Respiratory Physiotherapy is Effective Subordinate in COVID-19 Patients. J Nov Physiother 12: 509.

Copyright: © 2022 Battaglini D. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

well as cardiovascular and brain hemodynamic abnormalities, all of which might have potentially hazardous consequences.

Conclusion

COVID-19 is a novel disease process that has yet to be fully understood. Several recognized physiotherapy approaches can be safely employed in this subset of patients to minimise atelectasis and improve outcomes, despite the fact that there is yet no proof of their usefulness in the specific scenario of COVID-19. To limit exposure, all physiotherapy procedures should be meticulously planned, and workers should always wear proper personal protection equipment.

References

1. Wu C, Chen X, Cai Y, Zhou X, Xu S, et al. (2020) Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. *JAMA Intern Med* 180(7):934-943.
2. Li Y, Xia L (2020) Coronavirus disease 2019 (COVID-19): role of chest CT in diagnosis and management. *Ajr Am J Roentgenol* 214(6):1280-1286.
3. P Thomas, C Baldwin, B Bissett, I Boden, R Gosselink, et al. (2020) Physiotherapy management for COVID-19 in the acute hospital setting: clinical practice recommendations. *J Physiother* 66:73-82.
4. Vitacca M, Carone M, Clini EM, Paneroni M, Lazzeri M, et al. (2020) Joint statement on the role of respiratory rehabilitation in the COVID-19 crisis: the Italian position paper. *Respiration* 99(6):493-499.
5. Guarracino F, Vetrugno L, Forfori F, Corradi F, Orso D, et al. (2021) Lung, heart, vascular, and diaphragm ultrasound examination of COVID-19 patients: a comprehensive approach. *J Cardiothorac Vasc Anesth* 35(6): 1866-1874.