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LETTER FROM ASIA-PACIFIC AND BEYOND

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Letter from Chile

In Chile prior to the COVID-19 pandemic, the prevalence of chronic non-transmissible diseases was high; for example, the obesity rate was 31.2%, hypertension was 26.7% and diabetes stood at 12.3%.[1] Later in 2019, the WHO declared the first case of COVID-19, with 'patient zero' of the pandemic in Chile being diagnosed on 3 March 2020. From that date to the present, our country has seen two peaks: the first in mid-June 2020 with 6938 daily positives and 187 deaths, and the second in early April 2021 with 9171 positive cases and 135 deaths.[1] In light of this, local health authorities adopted a series of measures based on social distancing and mobility restriction, a situation which has gradually been relaxed since September 2020. Together with this, vaccination and testing strategies have managed to decrease the daily infection rate.[2]

One of the main complications from COVID-19 is acute hypoxaemic respiratory failure requiring invasive mechanical ventilatory (IMV) support associated with prolonged hospitalization in an intensive care unit (ICU).[3] To meet this need, Chilean health authorities raised the number of ICU beds, reaching 3000 during the first peak and 4500 during the second peak, with occupation rates of 94% and 96%, respectively. Network functioning was also implemented, so that bed availability was at the national level and not at the local level, allowing patients to move nationwide.[2] While this rise in beds has been able to handle health needs, the clinical condition in which these patients are discharged must not be neglected. Around 72% of adult patients reported suffering dyspnoea, even 2 months after hospital discharge, which would be a side effect of a restrictive pattern moving backwards. Together with dyspnoea, patients also report decreased muscle strength connected with severe mobility restrictions due to prolonged bedrest.[3,4]

After more than a year and a half of the COVID-19 pandemic and two waves, patients in Chile who survived COVID-19 have been observed to have movement-connected fatigue, similar to that observed in patients with severe acute respiratory syndrome, even in those patients who did not develop critical illness or severe respiratory failure. Therefore, strategies must be prepared for functional recovery among patients who came through the hospitalization stage of COVID-19. Muscle weakness in critical COVID-19 patients can rise as high as 27% of the population at the moment of hospital discharge. One risk factor is the immobilization associated with prolonged hospitalization, along with the use of corticoids, sedatives and neuromuscular blockers, typically applied to patients undergoing critical care.[3] All of this lead to muscle mass reduction, which negatively impacts the ability to generate strength. However, there is still more to learn about the profile of respiratory, physical and functional limitations which these patients will present,[4] a fundamental fact for individualizing rehabilitation programmes.

On 2 November 2021, the update from the Chilean Ministry of Health (MINSAL) reported 1390 daily infections, equivalent to a positivity rate of 3.28%. Cumulative MINSAL figures indicate the existence of 1.6 million total confirmed cases, of which 1.6 million have recovered.[1] In particular, discharges from Hospital El Carmen de Maipú (HEC; Santiago, capital of Chile) reached 4681 by 28 October, of whom 615 died, 2201 are over 60 and 478 were on IMV. The current drop in infection numbers, together with decreases in patient complications should make it possible to progressively redistribute efforts and resources to recover these patients' functionality, without ignoring internal hospital environments.

While experts' recommendations suggested structuring an integral, personalized pulmonary rehabilitation programme for patients who survive COVID-19, the inflection point is performing a correct diagnosis articulating the deficits and needs of each individual. Initial evaluation is fundamental and should consider, at minimum, the respiratory, cardiac and musculo-skeletal systems. These results should be complemented with a functional evaluation which considers the daily and social needs of each person. In this context, the concept of a transdisciplinary health team should become standard within the COVID-19 patient care protocol, in order to carry out a complete, integral evaluation. Here, some health services in our country have already implemented telerehabilitation programmes, which have shown significant results in physical performance and quality of life.[4] However, faced with growing demand and the greater number of hospital discharges, this modality needs to be complemented with in-person programmes (Figure 1).

International standards, bearing in mind the decreased lung function and muscle loss in upper and lower limbs at the time of hospital discharge, prescribe aerobic and muscle strength training. This could reach optimal levels if it is duly personalized and adapted to individual needs, based on overloading, one of the basic principles of training theory. We believe that this would be a good time for progressive resource redistribution in order to fortify respiratory rehabilitation programmes. The daily positive rates and the advances which health authorities have made in the vaccination plan, with 14.8 million people having received two doses (90.2%) and 6.5 million having received a booster dose (42.7%),[2] create a favourable environment for secure movement towards health centres. The in-person modality will make it possible to combine respiratory rehabilitation and a

FIGURE 1 Physical therapist at Hospital El Carmen de Maipú (Santiago, Chile) doing aerobic training with a patient discharged from the intensive care unit. The patient was hospitalized for 41 days overall, with 9 days on mechanical ventilation

return to daily life in order to improve training session behaviour and objectives related to the real needs of each patient.

There is likely to be an increase in patients requiring post-COVID-19 pulmonary rehabilitation. Therefore, it will be essential to identify patients who may benefit from this intervention and to design pathways that lead to face-to-face or telematic interventions.

KEYWORDS
COVID-19, pulmonary rehabilitation

CONFLICT OF INTEREST
None declared.

ETHICS STATEMENT
The authors obtained appropriate patient consent for the publication of the patient's photograph.

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