



Pulmonary rehabilitation: a mandatory intervention in diffuse interstitial lung diseases

Rehabilitación pulmonar: una intervención obligada en enfermedades pulmonares intersticiales difusas

Saraí del Carmen Toral-Freyre*

*Instituto Nacional de Enfermedades Respiratorias Ismael Cosío Villegas. Mexico City. Mexico.

There is an urgent need to improve preventive, diagnostic and therapeutic measures in respiratory patients, including those suffering from diffuse interstitial lung diseases (DILD), perhaps even more. The health personnel who intervene every day in the complex approach to these pathologies and patients must efficiently offer interventions that expand the therapeutic options that could result in the reduction of disability and premature mortality; with this, it will be possible to meet the United Nations' Sustainable Development Goal, which is a one-third reduction in premature mortality from non-communicable diseases, including chronic respiratory diseases (CRD), by 2030. Based on estimates made globally from 1990 to 2019, CRD were the third leading cause of death responsible for 4.0 million deaths with a prevalence of 454.6 million cases worldwide. While total deaths and prevalence of CRD have increased 28.5 and 39.8%, age-standardized rates have decreased for chronic obstructive pulmonary disease (COPD) and asthma, but not for interstitial diseases.¹

Pulmonary rehabilitation (PR) is recognized as a central component of this process. The change of health behavior is vital for the optimization and maintenance of the benefits of any intervention in chronic care, PR has taken the lead in the implementation of strategies to achieve this objective² and are a fundamental part of the treatment of pulmonary diseases, especially chronic, such as DILD, contributing

comprehensively in the improvement of symptoms, effort tolerance, quality of life and reintegration into work, social and family activities that allow an improvement in the general and psychological health status of patients, in addition to reducing costs and the use of health services, which is a beacon of hope for the respiratory and exercise limitations they present,² as demonstrated in their Colombian study Betancurt PJ et al.

The pulmonary rehabilitation departments consolidated in hospitals that have research areas and ethics committees have the opportunity to enrich the scientific evidence through their studies and research protocols in the different respiratory pathologies. There is little scientific evidence published globally for the benefits of long-term pulmonary rehabilitation programmes (PRP) for patients with DILD, as demonstrated in two Cochrane reviews.

2013 ATS/ERS statement on pulmonary rehabilitation defines it as «a comprehensive intervention based on a thorough patient assessment followed by patient-adapted therapies including, but not limited to, exercise training, education, and behavior change, designed to improve the physical and psychological condition of people with chronic respiratory diseases and promote long-term adherence to health-enhancing behaviors.»² It is a conceptual definition and therefore does not identify the specific structure, environment, and supports that are required for PRPs to be successful.³

Correspondence:

Dra. Saraí del Carmen Toral-Freyre

Instituto Nacional de Enfermedades Respiratorias Ismael Cosío Villegas. Mexico City, Mexico.

E-mail: toralfreyre@yahoo.com.mx

How to cite: Toral-Freyre SC. Pulmonary rehabilitation: a mandatory intervention in diffuse interstitial lung diseases. *Neumol Cir Torax*. 2023; 82 (2):61-62. <https://dx.doi.org/10.35366/115391>

New models of PR, such as telerehabilitation, and web-based PR have demonstrated in some trials, driven by non-inferiority and using robust methods, results similar to those of traditional PR in a hospital setting, which expand access to and increase participation in PR. The expected outcomes are improvements in breathlessness, quality of life and exercise tolerance and a reduction in hospital admissions.³

The future of PR is geared towards engaging more patients in personalized programs. To that end, programs should be widely publicized and health professionals should be trained to deal with the individual needs and preferences of the cases. The exercise program should be viewed as an individualized program at the limit of the patient's abilities to provide as powerful a training stimulus as possible. Towards the end of the program, subjects need to develop self-management skills that allow them to live with their disease, maintain the benefits of the program, and translate them into better quality and quantity of physical activity.^{4,5}

Successful implementation will be judged only if the essential components of the pulmonary rehabilitation program (PRP) are delivered, changes are measured, and if the expected results are achieved, a rigorous approach to quality.³

There remains a real challenge in investigating the long-term benefits of PR and its maintenance programs. It is naive to believe that the effects of a few weeks program would last forever, when followed by a maintenance program they are likely to translate into significant long-term health benefits through improved cardiovascular fitness, metabolic, or muscular.⁴ In several diseases such as interstitial⁶ diseases, asthma,² in pretransplant patients⁷ with pulmonary hypertension,⁸ in patients with COVID-19,⁹ among other CRD.

We must remember that you should not enter a PRP or any of its components (e.g. pulmonary physiotherapy) without having a specialist doctor who is treating and monitoring a patient with CRD or acute. Ideally, the specialist doctor should give indications of the scope of each component of the PRP.^{2,10,11}

Patients who suffer from DILD and go through the complex journey of diagnosis, treatment and clinical evolution from the moment they detect that the cough and dyspnea they perceive is not normal, to the moment they experience the adverse effects of the different treatments proposed to them, deserve to have the benefit of a PRP. It is up to the health system to form multidisciplinary groups in PR to provide personalized care to these patients and

that they have the opportunity to access the benefits that PR can offer them.

REFERENCES

1. Momtazmanesh S, Moghaddam SS, Ghamari SH, Rad EM, Rezaei N, Shobeiri P, *et al*. Global burden of chronic respiratory diseases and risk factors, 1990-2019: an update from the Global Burden of Disease Study 2019. *EClinicalMedicine* [Internet]. 2023;59:101936. Available in: <https://linkinghub.elsevier.com/retrieve/pii/S258953702300113X>.
2. Spruit MA, Singh SJ, Garvey C, Zu Wallack R, Nici L, Rochester C, *et al*. An official American Thoracic Society/European Respiratory Society statement: key concepts and advances in pulmonary rehabilitation. *Am J Respir Crit Care Med* [Internet]. 2013;188(8):e13-e64. Available in: <https://doi.org/10.1164/rccm.201309-1634st>.
3. Holland AE, Cox NS, Houchen-Wolloff L, Rochester CL, Garvey C, ZuWallack R, *et al*. Defining modern pulmonary rehabilitation: an official American Thoracic Society workshop report. *Ann Am Thorac Soc* [Internet]. 2021;18(5):e12-e29. Available in: <https://doi.org/10.1513/annalsats.202102-146st>.
4. Troosters T, Blondeel A, Janssens W, Demeyer H. The past, present and future of pulmonary rehabilitation. *Respirology* [Internet]. 2019;24(9):830-837. Available in: <https://doi.org/10.1111/resp.13517>.
5. Cox NS, Dal Corso S, Hansen H, McDonald CF, Hill CJ, Zanaboni P, *et al*. Telerehabilitation for chronic respiratory disease. *Cochrane Database Syst Rev*. 2021;1(1):CD013040.
6. Dowman L, Hill CJ, May A, Holland AE. Pulmonary rehabilitation for interstitial lung disease. *Cochrane Database Syst Rev* [Internet]. 2021;2(2):CD006322. Available in: <https://doi.org/10.1002/14651858.cd006322.pub4>.
7. Hoffman M, Chaves G, Ribeiro-Samora GA, Britto RR, Parreira VF. Effects of pulmonary rehabilitation in lung transplant candidates: a systematic review. *BMJ Open* [Internet]. 2017;7(2):e013445. Available in: <https://doi.org/10.1136/bmjopen-2016-013445>.
8. Dong C, Li Y. Exercise rehabilitation training in patients with pulmonary hypertension: a review. *Heart Lung Circ* [Internet]. 2022;31(10):1341-1348. Available in: <https://doi.org/10.1016/j.hlc.2022.06.660>.
9. Ahmed I, Mustafaoglu R, Yeldan I, Yasaci Z, Erhan B. Effect of pulmonary rehabilitation approaches on dyspnea, exercise capacity, fatigue, lung functions, and quality of life in patients with COVID-19: a systematic review and meta-analysis. *Arch Phys Med Rehabil* [Internet]. 2022;103(10):2051-2062. Available in: <https://doi.org/10.1016/j.apmr.2022.06.007>.
10. Güell Rous MR, Díaz Lobato S, Rodríguez Trigo G, Morante Vélez F, San Miguel M, Cejudo P, *et al*. Rehabilitación respiratoria. *Arch Bronconeumol* [Internet]. 2014;50(8):332-344. Available in: <https://linkinghub.elsevier.com/retrieve/pii/S0300289614000878>.
11. Ries AL, Bauldoff GS, Carlin BW, Casaburi R, Emery CF, Mahler DA, *et al*. Pulmonary rehabilitation: Joint ACCP/AACVPR Evidence-Based Clinical Practice Guidelines. *Chest*. 2007;131(5 Suppl):4S-42S. Available in: <https://doi.org/10.1378/chest.06-2418>.