

CLINICAL SIGNIFICANCE AND USEFULNESS OF PULMONARY REHABILITATION IN PATIENTS WITH RHEUMATIC DISEASES

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Inflammatory rheumatic diseases, characterized by chronic pain and functional limitations, have a far-reaching impact on individuals and society. Although the availability of new and effective drugs that improve the prognosis of rheumatic diseases has increased in the last decade, optimal treatment still requires interdisciplinary rehabilitation. This is especially true for patients who have autoimmune-mediated lung damage as part of their rheumatic disease, which is not an uncommon finding. Lung involvement in these patients is a major factor influencing the prognosis of the disease, with some diseases having characteristic presentation patterns related to the affected lung structures.

The typical manifestation of lung disease associated with rheumatic diseases is interstitial lung disease (ILD), with usual interstitial pneumonia (UIP) being the most common pattern. However, although ILD is a common complication and one of the leading causes of death in patients with rheumatic diseases, there is little evidence on the role and principles of pulmonary rehabilitation in these diseases. Aerobic training is considered the cornerstone of non-pharmacological treatment and is strongly recommended in international guidelines, but there is currently no consensus on the intensity, frequency, or type of rehabilitation program for patients with rheumatic diseases, especially those with increased cardiopulmonary risk. It is recommended to apply the same principles of pulmonary rehabilitation as in chronic obstructive pulmonary disease (COPD). Rehabilitation interventions in rheumatic patients usually combine medical exercises, patient education, occupational therapy, and the use of orthoses and aids. Results of randomized controlled trials (RCTs) have shown that whole-body training is the main component of pulmonary rehabilitation in patients with ILD. Pulmonary rehabilitation of patients with inflammatory rheumatic diseases at the Department of Physical and Rehabilitation Medicine with Rheumatology of Dubrava University Hospital is carried out by an interdisciplinary team, and the rehabilitation program and individual goals are clearly defined before the start of rehabilitation.

On average, the rehabilitation program is carried out for up to 12 weeks with an emphasis on performing interval-type endurance exercises. One session per day, five times a week of supervised individual exercise with a physiotherapist and 30 minutes of cycling at 50-70% of maximum intensity calculated based on the six-minute walk test (6MWT) or Cardiopulmonary Exercise Testing (CPET) with intensity progression during the program. CPET, as the gold standard for assessing cardiorespiratory fitness, plays a key role in selecting personalized exercise programs that are safe and effective. Furthermore, CPET allows for monitoring and continuous adaptation of the exercise

program over time, facilitating timely modifications to the rehabilitation regimen. This adaptability not only improves the effectiveness of pulmonary rehabilitation but also ensures that patients remain at an appropriate level of effort, maximizing their recovery potential and improving overall outcomes. The results obtained at our Department have shown, in accordance with the literature, that pulmonary rehabilitation can reduce dyspnea and increase exercise capacity in patients with inflammatory rheumatic diseases and ILD of varying severity. However, long-term effects need to be determined. In conclusion, rheumatic diseases in which phases of exacerbation and remission alternate usually require lifelong treatment. Despite the availability of effective drug treatment, the adverse outcome of chronic rheumatic disease on the lives of patients is still not negligible. Therefore, although there are no specific guidelines for pulmonary rehabilitation, comprehensive multidisciplinary rehabilitation can contribute to the results of treatment of patients with pulmonary manifestations of inflammatory rheumatic diseases.

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