



Comparison of high-intensity interval training versus moderate-intensity continuous training in hospitalized patients with interstitial lung disease receiving long-term oxygen therapy: Letter to editor

Mohsen Abedi¹, Maryam Sadat Mirenayat², Ida Mohammadi²,
Seyed Bashir Mirtajani³, Reyhaneh Zahiri², Atefeh Fakharian²

Letter to Editor

1 Pulmonary Rehabilitation Research Center, National Research Institute of Tuberculosis and Lung Diseases AND Physiotherapy Research Center, School of Rehabilitation, Shahid Beheshti University of Medical Sciences, Tehran, Iran

2 Pulmonary Rehabilitation Research Center, National Research Institute of Tuberculosis and Lung Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran

3 Lung Transplantation Research Center, National Research Institute of Tuberculosis and Lung Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran

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Dear Editor

The term interstitial lung disease (ILD) refers to a group of eclectic conditions such as idiopathic pulmonary fibrosis, sarcoidosis, pneumoconiosis, and pneumonitis. Despite the heterogeneity, ILDs are all hallmarked by inflammation and/or fibrosis within the lung parenchyma, subsequently leading to dyspnea, diminished pulmonary function, impaired gas exchange, compromised cardiovascular function, and reduced exercise tolerance. Pulmonary rehabilitation (PR) constitutes an indispensable intervention for managing respiratory symptoms among individuals with chronic respiratory diseases, and has been shown to

exert a positive influence on the functional status and quality of life (QOL) of patients with ILDs.¹ Since physical exercise is a key component of such programs, it is crucial to investigate different types of exercise and their efficacy in PR.

High-intensity interval training (HIIT) is defined as physical activity comprised of relatively brief bursts of vigorous activity (85%-100% of peak oxygen flow rate), followed by rest or low-intensity physical activity to allow recovery. Compared to moderate-intensity continuous training (MICT), which is the default training in most PR programs, HIIT has been shown to have either a similar or a more positive impact on ventricular and endothelial function, peak oxygen flow rate, skeletal muscle function, exercise adaptation, and exercise performance in non-ILD participants. Furthermore, HIIT has

Corresponding Author:

Atefeh Fakharian; Pulmonary Rehabilitation Research Center, National Research Institute of Tuberculosis and Lung Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran
Email: fakharian_2005@yahoo.com

demonstrated higher tolerability and adherence rates in comparison to MICT.

Recently, a randomized controlled pilot feasibility trial has delved into the issue of comparing HIIT to MICT in PR programs for patients with ILD.² The study revealed that the integration of HIIT in ILD rehabilitation programs was feasible, yet the positive outcomes obtained by it were less sustainable than those yielded by MICT. Patients undergoing HIIT programs achieved more rapid yet less substantial results, making it more suitable for those in immediate need of outcome improvement. Intriguingly, and as stated by the authors, all of the study participants who were already receiving long-term oxygen therapy (LTOT) dropped out of both of the PR programs, essentially rendering the study outcomes impossible to extrapolate to this subgroup.

Survival in patients with ILD is generally poor, yet it has been suggested that exercise tolerance – addressed by rehabilitation – is a predictor of longer survival among them. PR programs employing MICT have been shown to be largely safe and most likely effective in patients with ILD, yet this improvement is less conspicuous among LTOT users, who gain less from and have a higher mortality rate after undergoing such programs.³ Be that as it may, the impact of an HIIT PR program

on such patients remains unaddressed by the literature to date.

To address this gap, we, at Masih Daneshvari Hospital, Tehran City, Iran, are undertaking a randomized controlled trial (RCT) to compare the effects of an HIIT-versus MICT-integrated PR program in ILD inpatients on LTOT. We hypothesize that these patients may benefit from the rapid results yielded by HIIT, potentially making PR more customizable to their situation.

Conflict of Interests

Authors have no conflict of interests.

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