

Comparing the Efficacy of Different Therapies for Rehabilitation of Pneumoconiosis in Chinese Patients: A Comprehensive Network Meta-Analysis of Evidence

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Objectives:

The research project aims to demonstrate the effectiveness of different rehabilitation therapies in improving lung function compared to current conventional therapies and provide the relative ranking by employing less time and resources.

Background:

In Hong Kong, a wide range of rehabilitation therapies, including respiratory training, exercise rehabilitation, health education and psychological support, etc., is provided to patients with pneumoconiosis. These therapies have demonstrated benefits in enhancing exercise capacity, quality of life, and psychological well-being, but their efficacy in improving pulmonary function is limited. To determine which rehabilitation therapy is more effective, the traditional approach is to compare different therapies in a randomized controlled trial. However, such a trial would require recruiting a large number of participants (at least over a thousand patients with pneumoconiosis) and committing substantial resources to deliver rehabilitation therapies and conduct follow-up. This is not only extremely costly but also time-consuming to complete. Given the substantial data available from existing trials, this project aims to perform a comprehensive network meta-analysis of these data, which is a commonly used, reliable and cost-effective way to compare the efficacy of different rehabilitation therapies in Chinese patients with pneumoconiosis.

Methodology:

The project was conducted following internationally recognized PRISMA process. Firstly, approximately 3 000 articles were located through a comprehensive search of 10 large databases; Then, more than 60 articles that met the established criteria were identified. These qualified papers, with relevant data being extracted, were analyzed using standardized methods.

Impact:

A comprehensive research analysis on the efficacy of different rehabilitation therapies can be provided, which can be a reference for patients and their families, and also serve as a guide of different therapies to rehabilitation institutions.

Result and Conclusion:

1. A total of 2 360 articles were identified through the literature search, and 239 articles were ultimately eligible for inclusion.
2. Six rehabilitation interventions were compared in these articles, including 1) exercise-based pulmonary therapy; 2) non-exercise-based pulmonary therapy; 3) respiratory therapy; 4) Chinese herbal medicine; 5) acupoint treatment; and 6) a combination of Chinese herbal medicine and acupoint treatment.
3. Respiratory therapy and exercise-based pulmonary therapy were more effective in improving pulmonary function, dyspnea, and psychological well-being.
4. Respiratory therapy and the combination of Chinese herbal medicine and acupoint treatment were more effective in improving exercise capacity.
5. The safety analysis showed that all the interventions above were safe for all patients.