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Diagnosis and management of post-tuberculosis lung disease

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Worldwide, an estimated 10.6 million people fell ill with tuberculosis in 2021. Tuberculosis is the second leading infectious killer after COVID-19, and a total of 1.6 million people died from tuberculosis in 2021. However, tuberculosis is curable and preventable. Since 2000, approximately 74 million lives have been saved because of adequate tuberculosis diagnosis and treatment. In 2020, it was estimated that there were 155 million tuberculosis survivors still alive globally.[1]

Most tuberculosis programs focus on diagnosing and treating patients who are followed up until the end of treatment. However, monitoring and clinically and functionally evaluating after treatment is fundamental, since up to 50% of patients (> 70% of those with multidrug-resistant tuberculosis) have post- tuberculosis lung disease (PTLD), defined as "evidence of chronic respiratory abnormality, with or without symptoms, attributable at least in part to previous (pulmonary) tuberculosis."[2,3]

Patients with PTLD may have varying degrees of functional and structural lung sequelae, such as bronchiectasis, fibrosis, and pleural thickening. Due to structural sequelae, they are at a high risk for other pulmonary infectious diseases, including those caused by bacteria, viruses, nontuberculous mycobacteria, and fungi, requiring protocols for diagnostic and prevention. They may have lung function deficits (obstruction, restriction, or mixed patterns), having a two-fold greater risk of presenting with spirometric abnormalities than the general population, and approximately 10% of these patients may have lost more than half of their lung function.[2,4,5] In addition, these patients may have persistent respiratory symptoms, such as residual cough and dyspnea, in addition to reduced exercise capacity and quality of life.[2,6] Furthermore, it has been shown that tuberculosis survivors have a long-term post-treatment mortality rate almost three times higher than the general population, with most deaths occurring in the first year after the end of treatment.[7]

In fact, tuberculosis can cause several types of sequelae besides PTLD. Tuberculosis survivors may experience cardiovascular and pericardial disorders, neurological impairments, as well as psychological and socioeconomic effects. Nightingale et al.[8] have recently published a clinical statement on post-tuberculosis health and wellbeing. The authors developed a guide for the diagnosis and management of post-tuberculosis conditions, such as PTLD, cardiac disorders, neurological disorders, and post-tuberculosis effects in children and adolescents. They described the clinical presentation, made recommendations for assessment after tuberculosis treatment, and discussed the clinical and pharmacological management of each of the post-tuberculosis conditions.

This important document joins the previously published "Clinical standards for the assessment, management and rehabilitation of post-TB lung disease,"[9] which had already highlighted the importance of a minimal basic assessment at the end of tuberculosis treatment to verify the possibility of PTLD. Only with the early recognition of disabilities can strategies be devised for a better approach and treatment/rehabilitation of PTLD cases.[10,11]

In Brazil, although there are many patients living with tuberculosis sequelae, functional and radiological assessment after the end of treatment is neither routinely performed, nor is it recommended in the Brazilian Ministry of Health "*Manual de Recomendações para o Controle da Tuberculose no Brasil* (Manual of Recommendations for Tuberculosis Control in Brazil)."[12] In this sense, the Brazilian Thoracic Society has decided to develop a specific document for the diagnosis and management of PTLD in Brazil. The elaboration of the document should be carried out during a meeting of specialists in tuberculosis to be held during the next congress of the Society in August of 2023. The document will be fundamental to emphasize that tuberculosis must be considered a leading cause of chronic lung disease and that the diagnosis and treatment of PTLD must be implemented in various programmatic settings.

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AUTHOR CONTRIBUTIONS

All of the authors equally contributed to the writing, reviewing, and approval of the manuscript.

CONFLICTS OF INTEREST

None declared.

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