Monaldi Archives for Chest Disease

Monaldi Archives for Chest Disease 2026; 96:3525
doi: 10.4081/monaldi.2025.3525

Post-tuberculosis lung disease patients benefit from vaccinations as other respiratory conditions

Giovanni Battista Migliori,[1] Rosella Centis,[1] Lia D'Ambrosio,[2] Dina Visca,[3,4] Onno W. Akkerman,[5,6] Denise Rossato Silva,[7] Daria Podlekareva,[8,9] Yousra Kherabi[10,11]

[1]Respiratory Diseases Clinical Epidemiology Unit, Istituti Clinici Scientifici Maugeri IRCCS, Tradate, Italy; [2]Public Health Consulting Group, Lugano, Switzerland; [3]Department of Medicine and Surgery, University of Insubria, Varese, Italy; [4]Department of Medicine and Cardiopulmonary Rehabilitation, Istituti Clinici Scientifici Maugeri IRCCS, Tradate, Italy; [5]Department of Pulmonary Diseases and Tuberculosis, University Medical Center Groningen, University of Groningen, Netherlands; [6]Tuberculosis Center Beatrixoord, University Medical Center Groningen, University of Groningen, Haren, Netherlands; [7]Faculty of Medicine, Federal University of Rio Grande do Sul, Porto Alegre, Brazil; [8]Centre of Excellence for Health, Immunity and Infections (CHIP), Copenhagen University Hospital – Rigshospitalet, Denmark; [9]Department for Respiratory Medicine and Infectious Diseases, Copenhagen University Hospital – Bispebjerg, Denmark; [10]Infectious and Tropical Diseases Department, Bichat-Claude Bernard Hospital, Assistance Publique-Hôpitaux de Paris, Université Paris Cité, France; [11]Infection, Antimicrobials, Modelling, Evolution (IAME), French Institute for Medical Research (INSERM), Université Paris Cité, France

Key words: post-tuberculosis lung disease, chronic respiratory diseases, vaccination, tuberculosis, global health policy.

Correspondence to: Giovanni Battista Migliori, Respiratory Diseases Clinical Epidemiology Unit, Istituti Clinici Scientifici Maugeri IRCCS, Via Ronaccio 16, 21049 Tradate, Italy.
E-mail: giovannibattista.migliori@ivsmaugeri.it

Dear Editor,

A joint statement of the Italian respiratory, infectious diseases, and public health societies has been recently published on the best vaccination strategies in respiratory disease [1].

This important contribution will significantly help patients affected by chronic respiratory diseases, as well as by other chronic conditions of the cardiovascular system, liver, kidney, immune system, *etc*. [1]. These conditions, including chronic obstructive pulmonary disease (COPD), asthma, bronchiectasis and interstitial lung diseases, are mentioned as part of the core Chronic Respiratory Diseases [1].

We find it relevant to add such an important condition as post-tuberculosis lung disease (PTLD) to the list of risk groups for vaccination. PTLD is well recognized as a chronic respiratory condition, and an integrated approach to management of tuberculosis (TB) and lung health is promoted by the World Health Organization [2-6].

Recent national guidelines from major countries (*e.g*., Brazil) emphasized the importance of managing PTLD, including a tailored vaccination plan [3], and the Latin American Thoracic Association has developed a regional guideline to support national adoption of the same principles in the whole of Latin America [4].

The fact that about half of the total TB-related suffering was attributed to PTLD (precisely 47% of the 122 million disability-adjusted life years estimated in 2019) has attracted much attention on this topic [7-10].

Residual lung impairment after the completion of standard anti-TB treatment is prevalent (affecting up to 50-70% of patients completing anti-TB treatment) and predisposes to multiple lung diseases (*e.g*., COPD, chronic pulmonary aspergillosis, bronchiectasis, and COVID-19) [11-15]. The risks of cancers and cardiovascular diseases also increase in post-TB patients [6-9]. The post-TB morbidities adversely impact patients' quality of life and lead to a four-fold higher mortality rate compared to the general population [9-15].

Vaccination is an important approach to prevent and mitigate the evolution of lung damage caused by TB, and rehabilitation of patients with PTLD is essential to allow them to return to an active and productive life [16,17].

Recent evidence highlights the urgent need for a comprehensive vaccination plan in PTLD patients [2,18]. In addition to vaccines against influenza, pneumococcal disease, and COVID-19, PTLD patients should receive vaccines recommended for the general population or specific age groups, including tetanus, diphtheria, pertussis, measles, and shingles [2,18]. These vaccinations are essential to reduce the burden of preventable infections and improve long-term outcomes in this vulnerable population. Integrating vaccination into PTLD care is not optional — it is essential.

We therefore propose the possibility of capturing this element if or when similar statements are published or updated.

We perfectly know that in the context of Italy, as well as that of other high-income countries, PTLD is not a major issue. However, in all countries where TB is still a clinical and public health priority and even in the low-incidence countries of Europe, this addition will be of paramount importance.

References

1. Micheletto C, Aliberti S, Andreoni M, et al. Vaccination strategies in respiratory diseases: recommendation from AIPO-ITS/ETS, SIMIT, SIP/IRS, and SItI. Respiration 2025;1-19.
2. Nasiri MJ, Silva DR, Rommasi F, et al. Vaccination in post-tuberculosis lung disease management: a review of the evidence. Pulmonology 2025;31:2416801.
3. Silva DR, Santos AP, Visca D, et al. Brazilian Thoracic Association recommendations for the management of post-tuberculosis lung disease. J Bras Pneumol 2024;49: e20230269.
4. Inwentarz JS, Migliori GB, Lagrutta L, et al. Recomendaciones para el manejo de la enfermedad pulmonar post tuberculosis. Respirar 2024;16:271-88.
5. Migliori GB, Marx FM, Ambrosino N, et al. Clinical standards for the assessment, management and rehabilitation of post-TB lung disease. Int J Tuberc Lung Dis 2021;25:797-813.
6. WHO. Integrated approach to tuberculosis and lung health: policy brief. Geneva: World Health Organization; 2025. Available from: https://iris.who.int/bitstream/handle/10665/380840/9789240107526-eng.pdf?sequence=1.
7. Menzies NA, Quaife M, Allwood BW, et al. Lifetime burden of disease due to incident tuberculosis: a global reappraisal including post-tuberculosis sequelae. Lancet Glob Health 2021;9: e1679-87.
8. Zawedde J, Abelman R, Musisi E, et al. Lung function and health-related quality of life among adult patients following pulmonary TB treatment. Int J Tuberc Lung Dis 2024;28:419-26.
9. Nightingale R, Carlin F, Meghji J, et al. Post-TB health and wellbeing. Int J Tuberc Lung Dis 2023;27:248-83.
10. McDonald AK, Nakkonde D, Kaggwa P, et al. Prevalence of TB-related symptoms and self-reported disability among adult TB survivors. IJTLD Open 2024;1:540-6.
11. Pontali E, Silva DR, Marx FM, et al. Breathing back better! A state of the art on the benefits of functional evaluation and rehabilitation of post-tuberculosis and post-COVID lungs. Arch Bronconeumol 2022;58:754-63.
12. Thomson H, Baines N, Huisamen T, et al. A new understanding of clinical patterns in post-TB lung disease. Int J Tuberc Lung Dis 2024;28:115-21.
13. Hoole AS, Ilyas A, Munawar S, et al. Post-TB bronchiectasis: clinical characteristics and microbiology. Int J Tuberc Lung Dis 2024;28:405-6.
14. Martinez-Garcia MA, Guan WJ, de-La-Rosa D, et al. Post-TB bronchiectasis: from pathogenesis to rehabilitation. Int J Tuberc Lung Dis 2023;27:175-81.
15. WHO. Policy brief on tuberculosis-associated disability; 2023. Available from: https://www.who.int/publications/i/item/9789240077799.
16. Silva DR, Mello FCQ, Galvão TS, et al. Pulmonary rehabilitation in patients with post-tuberculosis lung disease: a prospective multicentre study. Arch Bronconeumol 2025. DOI: 10.1016/j.arbres.2025.02.007.
17. Silva DR, Pontali E, Kherabi Y, et al. Post-TB lung disease: where are we to respond to this priority? Arch Bronconeumol 2025. DOI: 10.1016/j.arbres.2025.03.001.
18. Silva DR, Santos AP, Visca D, et al. The potential for vaccines to aid the treatment of post-TB lung disease. Int J Tuberc Lung Dis 2024;28:111-2.

Received: 18 April 2025; Accepted: 22 April 2025; Early view: 26 May 2025.

Contributions: all authors have drafted the work and substantively revised it, read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Conflict of interest: the authors declare that they have no competing interests.

Ethics approval and consent to participate: not applicable.

Availability of data and materials: not applicable.

Funding: this work was partially supported for Istituti Clinici Scientifici Maugeri, by the "Ricerca Corrente", funding scheme of the Italian Ministry of Health. The funder had no role in the design, data collection, data analysis, and reporting of this study.

Acknowledgments: this study is part of the scientific activities of the Global Tuberculosis Network (GTN). The authors wish to thank Francesca Ferrari for her editorial support in developing the manuscript.