

POST-TUBERCULOSIS LUNG DISEASE: AN ONGOING CHALLENGE FOR LUNG HEALTH

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The Bangladesh National Tuberculosis Control Programme has successfully implemented the TB control strategies emphasizing active case finding and appropriate treatment with focus on microbiological cure. However, successful microbiological cure does not always signify restoration of respiratory health. A considerable proportion of patients continue to experience chronic respiratory symptoms after completion of anti-tuberculous therapy. These patients are often overlooked, symptoms may be accepted as an unavoidable consequence of previous illness, and unfortunately, in some cases unnecessary retreatment for TB is initiated. To address this gap, the term Post-Tuberculosis Lung Disease (PTLD) was proposed during the first international symposium held in 2019 in Stellenbosch, South Africa. PTLD is defined as evidence of chronic respiratory abnormality, with or without symptoms, attributable at least in part to previous tuberculosis. Factors associated with PTLD include TB-related lung injury causing extensive structural damage, delayed recovery with persistent inflammation, recurrent TB episodes, and relapse. Inadequate treatment factors include poor adherence, drug resistance, treatment failure, and delayed diagnosis. Host-related risk factors include pre-existing lung diseases (COPD, asthma), immunosuppression (HIV, diabetes, malnutrition including vitamin D deficiency), cardiovascular disease, and co-infections. Environmental contributors include smoking, biomass fuel exposure, air pollution, and occupational hazards. Mycobacterial virulence, antimicrobial susceptibility, and host genetic polymorphisms may play a role for developing these risks. The clinical spectrum of PTLD includes tracheobronchial stenosis, pulmonary fibrosis, bronchiectasis, TB-associated obstructive airway disease, pleural thickening, residual cavitary lesions, secondary bacterial and fungal infections such as aspergilloma, and non-tuberculous mycobacterial infection. Early detection requires structured surveillance through clinical history, physical examination, chest radiography, spirometry, six-minute walk test, and routine laboratory investigations at treatment completion, followed by periodic reassessment. Advanced investigations such as echocardiography, chest CT, and comprehensive pulmonary function testing may also be indicated. Management of PTLD focuses on patient education, symptomatic treatment, vaccination, and pulmonary rehabilitation. Despite its importance, PTLD remains a neglected area of global lung health, with limited evidence regarding burden, risk factors, prevention strategies, and standardized management pathways. To address this gap, with financial support of TB Reach-Stop TB Partnership, Bangladesh Lung Foundation, in partnership with Damien Foundation, and under the stewardship of the National Tuberculosis Control Programme, has initiated a PTLD project in 10 upazillas of Tangail and Mymensingh districts. Till date approximately 5749 patients declared cured of TB over the last two years have been screened for symptomatic PTLD and 2097 (36%) have been identified as PTLD cases following clinical evaluation and initial investigations. Standard symptomatic treatment combined with community-based pulmonary rehabilitation has demonstrated statistically significant improvements in symptoms, pulmonary function, exercise capacity, quality of life, and mental health outcomes. Given the substantial burden of PTLD among successfully treated TB patients, greater national and global attention is urgently required. Recognition of PTLD by clinicians and identification as a public health priority is imperative to ensure comprehensive lung health through appropriate interventions. Integration of PTLD services into existing primary healthcare and TB programme infrastructure offers a practical and scalable solution. There also remains significant scope for research and innovation to address this neglected yet important chronic respiratory condition.

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