



EDITORIAL

Investigating the response to COVID-19 and understanding severe TB cases: The 2022 Pulmonology TB series



Some discoveries in prevention, diagnosis and treatment of tuberculosis (TB) and subsequent implementation led to speed-up of progress towards the modern management of this disease, which in 2020 still killed 1.5 million people and caused suffering to another 8.5 million, of whom 3.3 million were women and 1.1 million children.¹

It is important to remember we fight an ancient foe. The agent responsible for the “white plague”, discovered by Robert Koch, was presented in Berlin on 24th March 1882, nowadays known as World TB Day.² We also remember other important discoveries, which among many others included the introduction of X-rays (Wilhelm Conrad Röntgen, 1885), of the Bacillus Calmette-Guérin (BCG) vaccination with an attenuated strain of *Mycobacterium bovis* (which Albert Calmette and Camille Guérin introduced into clinical practice in 1921) and of treatment with streptomycin (William H. Feldman and Horton Corwin Hinshaw- first case treated with the new drug in 1944).

Pulmonology was in the frontline of the fight against TB with its TB series published in 2018^{3–11} and in 2021,^{12–14} the latter focused on the COVID-19 pandemic and its relationship with TB. TB is essentially one of the main ‘victims’ of the COVID-19 pandemic, for several reasons including the direct interaction between the two diseases in terms of morbidity and mortality,^{12,15–19} the shifting of specialised staff from TB services to manage the COVID-19 emergency and the effects of fear on patients and staff, the impact of lockdown/social distancing measures and the re-organization of health services among others.^{20–24}

Importantly, the further perspective of this deadly interaction, including the potential risk of developing post-TB and post-COVID-19 sequelae hampering the quality of life and requiring rehabilitation services must be considered.^{12,25–29}

The topic of the 2022 World TB day is “Invest to end TB. Save lives”.³⁰

Pulmonology is happy to contribute to the fight against TB by publishing three relevant articles, which complete what was done in previous years, by covering the area of health services organization and management of severe cases of TB.

The first article of the series by Rodrigues et al. is aimed at investigating how infection control norms and standards were applied during the different waves of the COVID-19 pandemic in the out-patient centers in Portugal and globally, and how these centers, which are responsible for diagnosis, treatment, screening and prevention of TB responded during the pandemic.³¹ The study is comprehensive and representative, and offers the possibility of reflecting on the need for health services to adapt in order to prevent further transmission of COVID-19 (but also of TB) while continuing to manage and control TB to prevent a future resurgence and increased mortality from the disease, a scenario which the World Health Organization has forecasted.¹

An area that is still poorly understood is how to optimize management of severe cases of TB with or without COVID-19, admitted to an Intensive Care Unit (ICU), given their challenging management and poor prognosis.³²

Pulmonology has previously published an interesting contribution from developing countries to create a simple score to predict which patients are likely to deteriorate and die rapidly if not transferred to ICU.³³

The second paper of the Pulmonology TB series 2022 is a systematic review by Galvin et al. which investigated 529 articles in the literature to raise important questions on the topic.³⁴ The study identified an average mortality rate exceeding 50% among the severe TB patients admitted to ICU, ranging from 29% to 95%. In addition, the study demonstrated that mortality in high TB prevalence/limited-resource settings is 23.4% higher than in low TB prevalence ones. Interestingly, the existing severity scores investigated underestimate the actual mortality. Other significant findings of the study are that acute respiratory failure is the

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leading cause of admission to ICU and that negative predictors of outcome exist, including hospital-acquired infections, the need for mechanical ventilation and vasopressors, delay in anti-TB treatment, more than one organ failure and worse severity scores.

Still on the same page, an original study based on an extensive data set of 448 patients from 9 countries in Europe, Latin America and Asia investigated the characteristics of the severe TB patients admitted to ICU, including the cause of admission (the most frequent being intubation) and the description of their clinical management and outcome (in press). Interestingly, about half of the patients initiated anti-TB treatment in the ICU. The study findings indicate that a substantial proportion of patients had malabsorption necessitating intravenously administered anti TB drugs. The study demonstrated a positive correlation between the predictive scores and the patients' mortality in terms of prognosis. The probability of treatment success was significantly associated with a longer duration of intravenous anti-TB treatment.

This is the most extensive study on the topic so far, its strengths being also in its global representativeness.

We hope this contribution of Pulmonology to the World TB Day and the fight against the White Plague will be appreciated by our readers and that the findings of these three studies will help to end TB in the COVID-19 pandemic era.

Declaration of Competing Interest

None.

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