



## Tuberculosis series

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Tuberculosis is the leading cause of death from a single infectious agent, ranking above HIV/AIDS. An estimated 10.4 million people fell ill with tuberculosis in 2016, 6.3 million new cases of tuberculosis having been reported. In that same year, there were an estimated 1.3 million tuberculosis deaths among non-HIV-infected individuals and an estimated 374,000 tuberculosis deaths among HIV-infected individuals. The World Health Organization (WHO) End TB Strategy established targets for the 2016-2035 period, including a 90% reduction in tuberculosis-related deaths and an 80% reduction in tuberculosis incidence (new cases per year) by 2030. Globally, the tuberculosis incidence and mortality rates are falling; however, the disease continues to be an important public health issue.<sup>(1)</sup> Therefore, for the celebration of the World TB Day on March 24th, this issue of the JBP features six articles focusing on tuberculosis, including three editorials and three review articles. This tuberculosis series has the objective of highlighting advances in our understanding of many topics related to tuberculosis.

In 2017, the Brazilian National Ministry of Health issued a document outlining a plan for the elimination of tuberculosis—the *Plano Nacional pelo Fim da Tuberculose como Problema de Saúde Pública* (Brazilian National Plan to End Tuberculosis as a Public Health Problem)—which was designed with a view toward achieving the goal of reducing, by 2035, the incidence of tuberculosis to < 10 cases/100,000 population and tuberculosis-related mortality to < 1 death/100,000 population.<sup>(2)</sup> Appropriately, the first editorial in this series is an overview of efforts to eliminate tuberculosis in Latin America. Strategies and approaches have been developed to implement all the three pillars of the WHO End TB Strategy, and the initial results are encouraging.<sup>(3-5)</sup>

It is well known that the third pillar of the WHO End TB Strategy focuses on intensified research and innovation.<sup>(1)</sup> The *Rede Brasileira de Pesquisas em Tuberculose* (REDE-TB, Brazilian Tuberculosis Research Network) is a private, nonprofit nongovernmental organization concerned not only with assisting in the development of new drugs, new vaccines, new diagnostic tests, and new strategies to control tuberculosis but also with the validation of these technological innovations, prior to

their commercialization in the country or incorporation into the Brazilian National Tuberculosis Program. The second editorial provides a general review of the role of the REDE-TB in implementing the WHO End TB Strategy.<sup>(6)</sup>

The third editorial in this tuberculosis series reports on recently published literature reviews related to the diagnosis and treatment of tuberculosis.<sup>(7)</sup> In a review article, the tuberculosis series will also address some of the risk factors associated with tuberculosis, including diabetes, smoking, alcohol use, and illicit drug use. Those conditions are associated with tuberculosis infection and the progression to active tuberculosis, as well as contributing to poor tuberculosis treatment results. In addition, tuberculosis can lead to complications in disease course and management of some diseases, like diabetes. It is therefore important to identify these comorbidities in tuberculosis patients in order to ensure better management of both conditions.<sup>(8-13)</sup>

Another review article will cover tuberculosis in children. Pediatric tuberculosis requires special attention, especially because it represents recent transmission of *Mycobacterium tuberculosis* and the failure of disease control in the community. Investigation of children suspected of having tuberculosis is difficult, and there is a lack of appropriate diagnostic tools. The treatment of tuberculosis in children is also challenging.<sup>(14)</sup>

The final article in this tuberculosis series is a review on new and repurposed drugs to treat multidrug-resistant tuberculosis and extensively drug-resistant tuberculosis. Drug-resistant tuberculosis is a growing global health threat. In 2016, there were 600,000 new cases of infection with rifampin-resistant strains, of which 490,000 were cases of multidrug-resistant tuberculosis.<sup>(1)</sup> The review summarizes what has been achieved to date, as far as new and repurposed drugs are concerned, with a special focus on delamanid, bedaquiline, pretomanid, clofazimine, carbapenems, and linezolid.<sup>(15-22)</sup>

Therefore, we believe that this tuberculosis series, dedicated to the celebration of the World TB Day, offers a valuable overview of the various aspects of tuberculosis control. We hope that this series will give rise to new ideas for research.

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