TITLE: DELAY DIAGNOSIS OUTCOME OF PATIENTS WITH MULTIDRUG-RESISTANT TUBERCULOSIS (MDR-TB) IN BRAZI FROM 2015 TO 2019: A SURVIVAL ANALYSIS

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ABSTRACT:

No other infectious disease killed more than Tuberculosis (TB) from 2015-2019, a disease caused by *Mycobacterium tuberculosis*. According to the World Health Organization (WHO), more than 10 million people fell ill due to TB, resulting in 1.2 million deaths globally in 2019. Additionally, Multidrug-Resistant Tuberculosis (MDR-TB) imposes challenges to TB treatment because of the complex and long-term treatment for this disease. Brazil is one of the 25 high-burden countries with TB, in which MDR-TB is also a great concern. WHO established The progress towards the END TB Strategy preconizing the rapid diagnosis of TB to improve patients' outcomes. Here we verified the impact of delayed diagnosis on outcomes in patients with MDR-TB in Brazil from 2015-2019. Data was collected from Sistema de Informação de Tratamentos Especiais da Tuberculose under requisition #25072012623202226. All new MDR-TB cases with a diagnosis up to 365 days were included. Sociodemographic (age, sex, race, and schooling) and clinical variables (HIV, outcome, and delay of diagnosis cases) were performed using absolute and relative frequency. Diagnosis delay was considered after 30 days between the diagnosis date and the first consult. A patient's poor outcome was considered as the patient's treatment failed, default, death, or transferred. A survival analysis was performed comparing the delay of diagnosis to the patient's outcome, and considered statistically significant when $p<0.05$. A total of 4,621 patients were diagnosed with the median age of 39 years old, and with the majority being male (3,195; 69.14%), non-white (3,122; 67.56%), and four to seven years of schooling (1,773; 38.37%). The median time for a patient to be diagnosed was 14 days. The majority was diagnosed before 30 days (3,026; 65.48%), and negative for HIV (3,480; 75.31%). Only 1,594 (34.49%) patients had a delayed diagnosis, and 1,614 (34.93%) had a poor outcome. There was a difference between patients that experienced a poor outcome without a delayed diagnosis in comparison to those who had one ($p<0.05$), in which 1,139 (37.64%) patients had a poor outcome with a non-delayed diagnosis, and 475 (29.78%) patients had a poor outcome with a delayed diagnosis. The estimated median survival time was 115 days, in which 20 days was in the non-delayed diagnosis, and 198 in the delayed group. In conclusion, it was found that the non-delayed diagnosis group was associated with a poorer outcome than those with delayed diagnosis.

Keywords:*Mycobacterium tuberculosis,* multidrug-resistant tuberculosis, epidemiology, survival analysis, Brazil

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