Survival analysis of adult pulmonary tuberculosis patients in Selangor, Malaysia between the years 2013-2019

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ABSTRACT

Introduction: Patients with tuberculosis (TB) continue to die from the disease despite on effective treatment. Understanding the survival of TB patients on treatment is the first step to deciphering the TB-related-death-among-treated-individual conundrum. Preventing TB-related death among TB patients on treatment also has an advantage since the ongoing monitoring and administration of curative treatment enable a window of opportunity for action and a higher chance of success. **Objective:** To assess the 1-year survival of adult pulmonary TB (PTB) patients on treatment in Selangor, Malaysia, from 2013 to 2019 and to compare the survival based on the patients' sociodemographic and clinical features. **Materials and Methods:** We conducted a retrospective cohort study of all adult PTB patients registered in Selangor, Malaysia between 1st January 2013 and 31st December 2019 using MyTB, the national online TB surveillance registry of every TB patient diagnosed and reported in Malaysia. We retrieved the patients' sociodemographic and clinical features at the time of diagnosis, treatment duration, and outcome details. We utilized Kaplan–Meier method to determine the survival function for each categorical variable and Log-Rank test to compare them. **Results:** We enrolled 24570 adult PTB patients, and 595 (2.4%) died from TB during the study period. The mean survival time of the patients at 1 year of treatment was 356.2 days, while the 1-year survival rate was 96.9%. There were significant differences in survival by age group, sex, residing district, residing location, highest education level, employment status, sputum smear AFB at diagnosis, chest radiography at diagnosis, concurrent EPTB involvement, treatment history, and HIV status ($p < 0.001$). **Conclusions:** Our findings propounded that TB patients with sociodemographic and clinical features associated with low survival should be put on close monitoring, effective health education and support, medical optimization from co-morbidities, and a low threshold for medical specialty referral.