

# Prevalence and characteristics of tuberculous meningitis in Malaysia 2015-2020

**Saraswathiy Maniam\*, Siti Roszilawati Ramli, Asmah Razali, Norazah Ahmad**

Bacteriology Unit, Infectious Disease Research Centre, Institute for Medical Research, Jalan Pahang, Kuala Lumpur, Malaysia

## ABSTRACT

**Introduction:** Globally, tuberculosis (TB) is one of the top 10 causes of death and the leading cause of morbidity from a single infectious agent. As stated by WHO Global Tuberculosis Report 2020, in 2019 an estimated of 10million people fell ill with TB worldwide, while 1,400,000 people died of TB. Tuberculous meningitis (TBM) is a subtype of tuberculosis which constitutes about 5% of all extrapulmonary tuberculosis and about 1-2% of active tuberculosis. **Objective:** This study was conducted to analyse the prevalence of tuberculous meningitis in Malaysia from 2015-2020. Through this study we were also able to analyse the demographic characteristics and clinical profiles of TBM patients. **Materials and methods:** This is a cross sectional study using data collected from Malaysia national case-based TB registry (MyTB) between year 2015 and 2020. These data were analysed using SPSS version 21.0 for windows (SPSS Inc., USA). All the statistical analyses with p-value less than 0.05 is considered significant with the 95% confidence interval. **Results and conclusion:** There were total of 2072 TBM cases from year 2015 till 2020, which comprised of 1.38% of total TB cases within 6 years. Most of the patients were Malaysian (1682 cases (81.2%)) while only 390 (18.8%) cases were reported among foreigners. Most cases were detected among the age group of 35-44 with average of 77.8 (22.5%) cases per year, followed by age group 35-44 with average of 66.8 (19.35%) cases per year. Of all the TBM cases, 23.2% (481 cases) patients were known case of HIV. TBM is a disease with poor prognosis as the consequence of the half of the affected patient is death or severe disability which is evidenced by 42.7% (885) patients who were passed away. Tuberculous meningitis imposes a great challenge in both diagnosis and management, as most affected patients will be left with severe long-term complications even with treatment. It is important to understand the epidemiology and characteristics of tuberculous meningitis in Malaysia to improve the management and enhance the control of this deadly disease.

**Keywords:** Tuberculous meningitis, epidemiology, Malaysia