

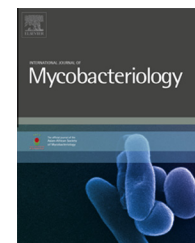
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Non-tuberculosis mycobacteria: Trend of isolation rate and characteristics of NTM in Cambodia during 2011–2013

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ABSTRACT

Background: The evidence of increase in the prevalence of non-tuberculosis mycobacteria (NTM) is being reported around the world. In Shanghai, China, it rose from 4% to 6% in the years between 2005 and 2008. Cambodia is one of the 22 high-tuberculosis (TB) burden countries. The NTM isolation rate among pulmonary smear-positive previously treated TB and new smear-positive non-converter at months 2 or 3 was 25% in 2011.

Objective: To determine the trend of the NTM isolation rate from presumptive multidrug-resistant tuberculosis (MDR-TB) cases during the period 2011–2013 and their characteristics. **Methods:** A retrospective cross-sectional study which included all presumptive MDR-TB patients whose samples reached two main mycobacterial culture laboratories of the National TB Program during the period 2011–2013. Each of the two samples were examined by smear microscopy with Ziehl Neelsen, cultured with Lowenstein Jensen and BACTEC MGIT 960, and identified for mycobacteria with ICA test. Possible cases were defined as a single positive NTM isolate, and definite cases were defined as two positive NTM isolates. The NTM isolation rate and the relationship of NTM and smear result were analyzed.

Results: A total of 6115 sputum samples of 3,338 patients were cultured, of which 32.3% (n = 1079) of the patients have at least one positive culture with a median age of 51 years (IQR: 40–62) and 59.5% were males. Out of these, 36.9% (n = 398) were NTM isolates with median age of 56.5 years (IQR: 46–65) and 51.0% were males. Of these, 39.7% (n = 158) were defined as NTM cases. The isolation rate of NTM among culture-positive of presumptive MDR-TB patients were 26.1%, 31.5%, and 46.9% in the years 2011, 2012, and 2013, respectively. This isolation rate was strongly correlated with a grade of smear result, but not TB treatment history. The proportion of NTM by grade of smear results were 62%, 53%, 27%, 15%, and 6% among smear-negative, scanty, 1+, 2+, and 3+, respectively, and the proportion of NTM by type of TB patients was 66.7%, 53.0%, 38.5%, 34.4%, 30.9%, 29.4%, and 2.7% among pulmonary TB smear-negative previously treated cases, non-converter of new smear-positive cases, symptomatic close contacts of known MDR-TB patient, failure, HIV/TB new smear-positive, relapse, and return after default, respectively.

Conclusions: The isolation rate of NTM in Cambodia among presumptive MDR-TB patients was found to be remarkably high and increasing over the last 3 years and strongly correlated with the grade of smear result. Further studies and appropriate managements should be done for those patients.

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