

**EPIDEMIOLOGICAL STUDY OF  
MULTIDRUG-RESISTANT TUBERCULOSIS  
AT YANGON DIVISIONAL TB CENTRE  
(2000-2006)**

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## Abstract

A cross-sectional study was conducted at Union Tuberculosis Institute to explore the epidemiology of MDR-TB at Yangon Divisional TB Centre from 2000 to 2006. The objectives of the study are; (1) to find out epidemiological distribution of MDR-TB, (2) to determine a trend of MDR-TB from 2000-2006, (3) to describe different patterns of drug resistance, (4) to identify treatment outcomes and (5) to determine prevalence of MDR-TB among all TB cases registered at Yangon Divisional TB Centre. All MDR-TB patients registered at Yangon Divisional TB Centre from 2000 to 2006, were included in this study. Secondary data was collected by reviewing medical records. SPSS version 11.5 was used for data analysis. Among total 329 cases, 195 patients were male (59.3%) and 134 were female (40.7%). The ratio of male to female is 1.5:1. Mean age  $\pm$ SD is  $36\pm 12.54$  years (range = 16-70). The highest frequency was found in 25-34 year (37.1%) and the lowest in 65+ year (2.4%). 154 cases (46.8%) were from east district of Yangon Division, followed by north (83 cases, 25.2%), west (75 cases, 22.8%) and south district (17 cases, 5.2%). The prevalence of MDR-TB reached to the highest peak (515/100,000) in 2002 (95%CI = 407.41-643.29) and to the lowest (123/100,000) in 2006 (95%CI = 83.52-174.48). Overall prevalence trend was declined from 2002 to 2006. Resistance to Streptomycin (76.3%), ETB (46.8%), and PZA (14.3%) were observed. DST for PZA was not done in 250 cases (76%). The most common drug combination resistance was HRS (35.6%). Resistance to 2 drugs (HR), 3 drugs (HR+1drug), 4 drugs (HR+2 drugs) and 5 drugs (HR+3 drugs) were 17%, 42.3%, 27.3%, and 13.4% respectively. 178 patients (54.1%) achieved culture conversion and 59 cases (17.9%) were still positive in culture 2. Treatment was successful in 152 cases (46.2%) but failed in 22 cases (6.7%). 125 patients (38%) were defaulted and 24 patients died (CFR = 7.3%). Therefore, DST for all Category II and I failure cases and default from treatment are major challenges to N.T.P in the treatment of MDR-TB. The strategies to reduce number of defaulters are crucial in the successful treatment of MDR-TB and defaulter tracing activities should be strengthened among all health care providers involved in TB control. DOTS-Plus may provide reasonable results in resource-poor settings.

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## **List of abbreviations**

AFB	Acid-fast bacilli
AIDS	Acquired Immuno-deficiency Syndrome
CFR	Case Fatality Rate
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment Short Course
DOTS-Plus	The internationally recommended strategy for TB Control Case Management Strategy under Development, Designed to manage MDR-TB using second line drugs within DOTS Strategy in low- & middle- income countries.
DR	Drug Resistance
DRS	Drug Resistance Surveillance or Survey
DST	Drug Susceptibility Testing
FDC	Fixed-dose combination
GLC	Green Light Committee
HIV	Human Immunodeficiency Virus
INGO	International Non-governmental Organization
ITR	Individualized Treatment Regimen
IUATLD	International Union Against Tuberculosis and Lung Diseases
MDGs	Millennium Development Goals
MDR-TB	Multidrug-resistant tuberculosis
NGO	Non-governmental Organization
NTP	National Tuberculosis Programme
SEA	South-East Asia
SEAR	WHO South-East Asia Region
STR	Standardized Treatment Regimen
TB	Tuberculosis
TB/ HIV	Tuberculosis / Human Immuno-deficiency Virus
UTI	Union Tuberculosis Institute
XDR-TB	Extensively drug-resistant tuberculosis