ABSTRACT

Objectives: To determine prevalence of multidrug-resistant tuberculosis (MDR-TB) and associated risk factors among adult (≥18 years) HIV positive patients registered at Mpilo Opportunistic Infection (OI) clinic. To assess the association of CD4 count and MDR-TB.

Background: Tuberculosis (TB) is a major public health disease, affecting one third of the world's population and killing approximately two million people yearly. The emergence of resistance to anti -tuberculosis drugs, particularly MDR-TB

has become a global threat .Its association with HIV positivity has been reported. It is estimated that approximately 3.6% of all incident TB cases are MDR-TB. In Zimbabwe there are no clear guidelines for MDR-TB case finding in new TB patients. This may lead to mis-treatment as all new TB cases are initiated on first line drugs. Of late Zimbabwe has undergone serious economic hardships which together with its very high burden of HIV could have a negative impact on MDR-TB. Despite the high risk of MDR-TB in HIV positive patients, little has been done to investigate the burden of MDR-TB in these patients. This study determined prevalence of MDR-TB in adult HIV positive patients

Methods:A health facility based cross-sectional study was carried out at Mpilo OI Clinic between 01March and 31July 2012. Convenience sampling was used to recruit 275 adult HIV positive patients into the study on a daily basis. A single sample for MDR-TB was collected from each one of these participants. A total of 275 sputum and aspirate(Bone marrow, Aspirates, pus Cerebrospinal fluid) samples were collected and cultured for MDR-TB using both the Liquid using BACTEC Mycobacterium Growth Indicator Tube 960 (MGIT) and the Conventional Solid Lowenstein Jensen (LJ)culture methods. Whole blood for CD4 count was collected from each participant and tested using BD FACS Calibur Flow Cytometry CD4 count machine. Logistic regression was used to determine predictors of MDR-TB prevalence.

Results: The prevalence of MDR-TB was 2.6% among adult HIV patients registered at Mpilo OI Clinic and attended the clinic between 01 March and 31July 2012.In the multivariate analysis, MDR-TB prevalence was associated with CD4 count (OR 0.14 p=0.043)

Conclusion: A prevalence of 2.6% of MDR-TB among HIV positive patients was found. This is very high considering this high MDR-TB risk group. A CD4 count of >200 cells/ul was found to be protective of high MDR-TB prevalence. Targeted interventions of MDR-TB are necessary to reduce incident MDR-TB cases among HIV positive patients. Increased MDR-TB case finding through culture and Drug Susceptibility testing before initiation of First line drugs is necessary to reduce mistreatment. Infection control measures need to be put in place to reduce transmission of MDR-TB.

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ABBREVIATIONS

Mpilo OI Clinic	Mpilo Opportunistic infections clinic
MDR-TB	Multidrug-resistant Tuberculosis
TB	Tuberculosis
MOTT	Mycobacterium Other Than Tuberculosis
AFB	Acid Fast Bacilli
XDR-TB	Extremely Drug Resistant Tuberculosis
ZN	Zielh Neelsen
LJ	Lowenstein Jensen
MGIT	Mycobacterium Growth Indicator Tube
MPT 64 AG KIT	MPT 64 Antigen kit
SADC	Southern Africa Development Community
WHO	World Health Organization
IUATLTD	International Union Against Tuberculosis and Lung Diseases
CDC	Centers for Disease Control
MRCZ	Medical Research Council of Zimbabwe
ART	Anti Retroviral Treatment
PNB	Para Nitro Benzoic acid
HIV	Human Immuno- deficiency Virus

S.A	South Africa
DST	Drug Susceptibility Testing
CSF	Cerebro-spinal Fluid

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