Prevalence of Multi Drug Resistance Tuberculosis in Abbassia Chest Hospital from July 2006 to December 2009

Thesis Submitted For Partial Fulfillment of the Master Degree in Chest Diseases and Tuberculosis

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ADA	**Adenosine Deaminase.**
AFB	**Acid-Fast Bacilli.**
Am	**Amikacin.**
BCG	**Bacille Calmette-Guerin.**
CFT	**Complement Fixation Tests.**
Cfx	**Ciprofloxacin.**
Cfz	**Clofazimine.**
Clr	**Clarithromycin.**
Cm	**Capreomycin.**
CMI	**Cell Mediated Immunity**
Cs	**Cycloserine.**
DNA	**Deoxyribonucleic Acid.**
DOTS	**Direct Observed Treatment with Short Course Chemotherapy.**
DST	**Drug Susceptibility Testing.**
DTH	**Delayed Type Hypersensitivity**
E	**Ethambutol.**
ELISA	**Enzyme-Linked Immuno-Sorbent Assay.**
EMB	**Ethambutol.**
Eto	**Ethionamide.**
Gfx	**Gatifloxacin**
H	**Isoniazide**
HIV	**Human Immunodeficiency Virus.**
IBS	**irritable bowel syndrome.**
IFA	**Immuno-Flurescent Assay.**
INF γ	**Interferon Gamma.**
INH	**Isoniazide.**
Km	**Kanamycin.**
LCR	**Ligase Chain Reaction.**
Lfx	**Levofloxacin.**
LiPA	**Line Probe assay.**
LJ	**Lowenstein-Jensen.**
Lzd	**Linezolid.**
M	**Mycobacterium.**
MDR-TB	**Multi-Drug-Resistant Tuberculosis.**

Mfx	**Moxifloxacin.**
MGIT	**Mycobacterial Growth Indicator Tube.**
MIC	**Minimal Inhibitory Concentration.**
MOTT	**Mycobacteria Other Than Tubercle bacilli.**
NRAMP	**Natural Resistance-Associated Macrophage Protein.**
NTP	**Natural Tuberculous Program**
MS	**Malate Synthase.**
Ofx	**Ofloxacin.**
P	**Pyrazinamide.**
PAS	**P-AminoSalicylic acid.**
PCR	**Polymerase Chain Reaction .**
PN	**Peripheral Neuritis**
POA	**Pyrazinoic acid.**
PPD	**Purified Protein Derivative.**
Pto	**Protionamide.**
PZA	**Pyrazinamide.**
R	**Rifampicin.**
RMP	**Rifampicin.**
RNA	**Ribonucleic Acid.**
S	**Streptomycin.**
SCC	**Short Course Chemotherapy.**
SD	**Standard Deviation.**
SM	**Streptomycin.**
TB	**Tuberculosis.**
TEMA	**Tetrazolium Microplate Assay.**
Th	**Thioacetazone.**
TNFγ	**Tumour Necrosis Factor alpha.**
Trd	**Terizidone.**
Vi	**Viomycin.**
WHO	**World Health Organization**
XDR	**Extensive Drug Resistance**

Introduction

Tuberculosis (TB) is a medical, social and economic disaster of immense magnitude that is occurring over the world ***(WHO, 2005).***

Strains of Mycobacterium tuberculosis that are resistant to both isoniazid and rifampicin with or without resistance to other drugs have been termed multi-drug resistant strains. Isoniazid and rifampicin are keystone drugs in the management of TB. While resistance to either isoniazid or rifampicin may be managed with other first-line drugs ***(Ormerod, 2005)***.

Multi-drug resistant TB (MDR-TB) demands treatment with second-line drugs that have limited sterilizing capacity and are less effective and more toxic. ***(Sharma and Mohan, 2004).***

Emergence of (MDR-TB) is complicating tuberculosis control efforts. ***(Loddenkemper et al, 2002).***

The incidence of drug resistance has increased since the first drug treatment for TB was introduced in 1943. The emergence of MDR-TB followed the widespread use of Rifampicin since the 1970s. The WHO Stop TB Department estimates the number of incident cases (including new & re-treatment cases) occurring worldwide in 2003 alone to be 458 000. ***(Zingol et al, 2006)***

According to WHO, TB profile for Egypt in 2004, the prevalence rate of new cases of multi-drug resistant tuberculosis was 2.2%, while that of previously treated tuberculous cases, which was discovered to be multidrug-resistant tb, was 38%. ***(WHO, 2004)***.

The spectrum of this form of TB now ranges from "basic" MDR-TB, with resistance only to rifampicin and isoniazid, to

XDR-TB where there is additional extensive drug resistance to at least three of the six main classes of second-line antituberculous drugs. ***(Centers for Disease Control and Prevention, 2006)***

Early detection of drug-resistance TB allows starting of an appropriate treatment, which has an impact in the better control of the disease. ***(Palmino, 2006).***

The treatment of MDR-TB is a challenge which should be undertaken by experienced clinicians at centers equipped with reliable laboratory service for mycobacterial culture and in vitro sensitivity testing ***(Frieden and Munsiff, 2005)***.

The recommended duration of treatment is guided by smear & culture conversion. The minimal recommendation is that; treatment should last for at least 18 months after culture conversion. Extension to 24 months may be indicated in patients defined as "chronic cases" with extensive pulmonary damage. ***(WHO, 2006).***

One of the major concerns about second-line antituberculous drugs is their potential to cause adverse effects. The experience of MDR-TB treatment pilot projects has contributed to greater knowledge about these adverse reactions in various populations**.** ***(Nathanson et al, 2004)***