

Original Research Article

Psychological Distress in Patients of Multi Drug Resistant Tuberculosis

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ABSTRACT

Introduction-Tuberculosis continues to be a major global health concern. Psychiatric disorder can present a great challenge in the management of patients with multidrug resistant tuberculosis (MDR-TB). Anxiety disorders and psychosis, can greatly impact patient quality of life, as well as physicians' attitudes toward MDR-TB therapy. Successful control of psychiatric symptoms is therefore crucial not only for favorable patient outcome, but also for patients' overall well-being. A patient of MDR Tuberculosis also suffers from significant stress, subclinical depression and anxiety symptoms. We intended to conduct a study aiming to analyze the patterns of psychiatric illnesses in the patients diagnosed as MDR tuberculosis in a tertiary care hospital.

Methodology-Sixty patients of MDR TB underwent a detailed psychiatric evaluation by a consultant psychiatrist. Psychiatric diagnoses were considered as per ICD-10 DCR criteria. Hamilton Depression rating scale (HAM-D) was used to assess Depressive symptoms and Hamilton Anxiety Rating scale (HAM-A) was used to assess anxiety symptoms. Perceived Stress scale (PSS) was used to assess the perception of stress. The statistical analyses were conducted using Statistical package for the social sciences (SPSS version 16) software. The statistical significance was defined at $P < 0.05$.

Results-Most common psychiatric diagnosis in our study was Depressive disorder (28.3%) followed by anxiety disorders (16.7%). 5 (8.3%) MDR patients also suffered from Psychotic Disorders. 20% of patients had perceived very high level of stress.

Conclusion-This study has revealed significant psychological stress and psychiatric comorbidity associated with MDR-TB patients causing significant social and financial challenges to their families. There is a need for psychosocial support of MDR-TB patient and their caregivers to mitigate the negative effects of stigma, and to manage the associated psychological stressors.

Keywords- Multidrug resistant tuberculosis (MDR-TB), psychiatric comorbidity, HAM-D, HAM-A

INTRODUCTION

Tuberculosis continues to be a major global health concern. Tuberculosis is one of top ten leading cause of death worldwide and leading cause from a single infectious agent. In 2018 TB caused 1.2 million deaths among HIV negative patients and 251,000 deaths among HIV positive patients. ^[1] TB affects all countries but African countries and countries like India, china, Indonesia are worse affected. ^[2] An increasing

challenge to public health and to TB prevention is that of transmission of drug-resistant strains of *M. tuberculosis*. Initial evidence suggested reduced transmissibility of resistant strains; however, it is now clear that primary transmission of drug-resistant bacteria (as opposed to acquired resistance) is the dominant mechanism sustaining the global transmission of drug-resistant TB (DRTB) cases. ^[3] Drug resistance arises due to improper use of antibiotics in the

chemotherapy of TB and failure to ensure the complete the whole course of treatment. [4] Psychiatric disorder can present a great challenge in the management of patients with multidrug resistant tuberculosis (MDR-TB). Psychiatric disorders can either be complications related to anti-tuberculosis drugs like Cycloserine or due to other psychosocial factors associated with MDR TB. Psychiatric comorbidities, such as Depression, Anxiety disorders and psychosis, can greatly impact patient quality of life, as well as physicians' attitudes toward MDR-TB therapy. [5] Successful control of psychiatric symptoms is therefore crucial not only for favorable patient outcome, but also for patients' overall well-being. [6] The most commonly reported management strategy to control psychiatric symptoms is to remove the offending agent. However, in case of MDR TB it may not be an option a few published reports describe management strategies that avoid the discontinuation of the drug, for example lowering the dose or simultaneously administering antidepressant or antipsychotic therapy. [7,8] A patient of MDR Tuberculosis also suffers from significant stress, subclinical depression and anxiety symptoms. We intended to conduct a study aiming to analyze the stress and patterns of psychiatric illnesses in the patients diagnosed as MDR tuberculosis in a tertiary care hospital.

METHODOLOGY

This cross-sectional descriptive study was based on the interview of the patients diagnosed as MDR tuberculosis coming for treatment in Institute of Medical sciences, BHU, Varanasi. Sixty patients of MDR TB underwent a detailed psychiatric evaluation by a consultant psychiatrist. Psychiatric diagnoses were considered as per ICD-10 DCR criteria. Hamilton Depression rating scale (HAM-D) (HDRS) was used to assess Depressive symptoms and Hamilton Anxiety Rating scale(HAM-A) was used to assess anxiety symptoms.

Perceived Stress scale (PSS) was used to assess the perception of stress.

Hamilton Depression rating scale (HDRS) – also known as HAM-D is a most widely used clinical administered scale for assessment of depression. The original version contains 17 items pertaining to symptoms of depression experienced over the last week. A Score of 0-7 is generally accepted to be within the normal range, while a score of 20 or higher indicate clinical Depression. Score 8-13 indicate mild, 14-18 indicate moderate, 19-22 indicate severe more than 23 indicate very severe Depression. [9]

Hamilton Anxiety Rating scale (HAM-A)- The HAM-A is one of the first scales developed to assess symptoms of anxiety disorder and most widely used in both clinical and research setting. The scale consists of 14 items pertaining to psychological and physical complaints related to anxiety. Each items is scored on a scale of 0(not present)-4(severe), with a total score ranging from 0-56. Total score less than 17 indicates mild, 18-24 indicates moderate and 25-30 indicates severe anxiety. [10]

Perceived Stress Scale (PSS)- PSS is the most widely used scale to measure perception of stress. It is measure of the degree to which situation in one's life are appraised as stressful. It has 10 items scored on scale 0 (Never)- 4 (most often). Total Score Ranges from 0-40 with higher scores indicating higher perceived stress. Total score ranging from 0-13 would be considered low stress, 14-26 moderate stress, 27-40 high perceived stress. [11]

The statistical analyses were conducted using Statistical package for the social sciences (SPSS version 16) software. The statistical significance was defined at $P < 0.05$.

RESULTS

In this study we included sixty patients of MDR TB coming to Tuberculosis unit for treatment in Institute of medical sciences, Banaras Hindu

University, Varanasi. The Socio-demographic characteristics of the subjects are presented in table 1.

Table1. Socio- Demographic data of subjects

Variable	Number	Percentage
SEX		
Male	36	60%
Female	24	40%
Marital Status		
Single/Divorced	24	60%
Married	36	40%
Family Type		
Nuclear	39	65%
Joint	21	35%
Residence		
Rural	13	22%
Urban	47	78%
Occupational Status		
Unemployed	40	67%
Employed	20	33%
Education		
Primary	1	1.7%
High	15	25%
Inter	14	23%
Graduate	22	37%
Postgraduate	8	13.3%
Socio Economic Status		
Lower	3	5%
Upper Lower	28	46.7%
Middle	25	41.7%
Upper Middle	4	6.6%

The mean age of patients in our study was 29.5 years (± 6.5). Majority of patients were Male belonging to lower socioeconomic status from urban area around Varanasi. As shown in Table -2, most common psychiatric diagnosis in our study was Depressive disorder (28.3%) followed by anxiety disorders (16.7%). 5 (8.3%) MDR patients also suffered from Psychotic Disorders. Past history of psychiatric illness was only present in 4 patients, 3 had past history of depression and 1 patient had psychosis. In our subjects tobacco was most common substance abused (28.3%) followed by alcohol 3.3% & cannabis (1.7%).

Table2- clinical characteristic of subjects

Psychiatric Diagnosis	Number	Percentage
Depressive Disorder	17	28.3%
Anxiety Disorder	10	16.7%
Psychotic Disorder	5	8.3%
Dissociative Disorder	1	1.7%
Substance Abuse		
Tobacco	17	28.3%
Alcohol	2	3.3%
cannabis	1	1.7%
Past History of Psychiatric Illness		
Nil	56	93.3%
Psychosis	1	1.7%
Depression	3	5%

Table 3- HAM-D, HAM-A & PSS Score

HAM-D score	Number	Percentage
Mild	24	40%
Moderate	6	10%
Severe	12	20%
Very Severe	6	10%
HAM-A Score		
Mild	28	46%
Moderate	24	40%
Severe	2	3%
PSS Score		
Low	7	12%
Moderate	41	68%
High	12	20%

Table 4- Correlation between PSS Score & HAM-D , HAM-A

	Mean score (SD)	Pearson correlation(r)	P-Value
HAM-D	13.2 (± 7)	.75	.001*
HAM-A	15.8 (± 5.5)	.68	.001*
PSS	20 (± 6.6)		

Hamilton Depression rating scale showed that significant proportion (30%) of patients were suffering from severe or very severe depressive symptoms. Proportion of patients suffering from moderate to severe anxiety symptoms was also high (43%). 20% of patients had perceived very high level of stress (Table-3). Correlation analysis showed significant correlation between PSS scores and HAM-D, HAM-A scores (Table-4).

DISCUSSION

India contributes to one-fourth of the global burden of multidrug-resistant tuberculosis ^[12] (MDR-TB). Tuberculosis in itself chronic devastating illness with significant morbidity and mortality and multi drug resistance further complicate the situation. Drug adherence is one of the important issues for these patients. Psychiatric comorbidities further complicate the situation. In our study we not only looked at psychiatric comorbidities we also evaluated sub-clinical depression and anxiety. Psychiatric comorbidity was found in about 55% patients. Depression was the most common psychiatric comorbidity (28.3%) in our study followed by anxiety disorder and psychotic disorder. 33.3% patients had comorbid substance dependence, Tobacco was most common substance abused (Table-1). Our study results are in line with the other studies from Northern India. Chaudhri et al (2013)

evaluated 214 outpatients registered at DOTS Centre in Kanpur, India. They found 82.2% had psychiatric comorbidity; out of which 85.2% had anxiety neurosis, and 14.8% had depression. [13] Panchal et al (2011) screened 600 patients of pulmonary TB admitted in Hospital for Chest Diseases and Tuberculosis, Jaipur. They assessed patients using Beck depressive inventory scale. Depression was present in 82% female tuberculous inpatients and in 52.6% males immediately after the diagnosis. [14] Chandrashekar et al (2012) observed 100 patients hospitalized for pulmonary tuberculosis in Bangalore. They used MINI International Neuro Psychiatric Interview Scale and found 46% of psychiatric morbidity, majority were depressive disorders (36%) followed by anxiety disorders (24%) comorbidity of depressive and anxiety disorders in 16% of patients. [15] Supriyanto, et al. studied medical records of MDR-TB patients admitted for MDR-TB treatments to Sardjito Hospital from January 2014 to July 2016 and screened for psychiatric disorders found that 32.8% MDR-TB patients admitted to Sardjito Hospital were diagnosed with psychiatric disorders and 52.4% of them had psychotic symptoms & Depression was the most common diagnosis. [16]

In our study perceived stress was moderate to high in significant proportion of patients (88%) and it was significantly correlated with higher depressive and anxiety symptoms. Our study highlights the importance of stress in psychological health of the MDR patients. Management of stress is particularly important as extended periods of stress can cause destructive changes in the body such as ulcers, back pain, headaches, raised blood pressure, indigestion, and a variety of other psychological problems. [17] In a situation of chronic stress, the neuroimmune axis gets overstimulated and breaks down, thus causing neuroendocrine/ immune imbalances that can establish a state of chronic low-grade inflammation, a possible prelude to various illnesses. [18] Limited

sample size is one of the limitation of our study. We used well validated specialized scales for assessment of Depression, anxiety and stress. Psychiatric diagnosis was made after detailed evaluation by qualified psychiatrist, Stress was independently assessed it came out to important factor for psychological distress of the MDR patients.

CONCLUSION

This study has revealed significant psychological stress and psychiatric comorbidity associated with MDR-TB patients causing significant social and financial challenges to their families. There is a need for psychosocial support of MDR-TB patient and their caregivers to mitigate the negative effects of stigma, and to manage the associated psychological stressors. Our findings also raise several policy relevant issues in the management of MDR-TB in the community. Psychosocial intervention strategies should be planned, which could aid the MDR-TB patients to cope with their psychosocial challenges leading to improved treatment adherence, reduced default and TB transmission rates.

Conflict of interest: There is no conflict of interest

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