THE FREQUENCY OF DEPRESSION IN THE TREATMENT OF MULTI DRUG RESISTANT TUBERCULOSIS

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ABSTRACT

Background: Multi drug resistant Tuberculosis (MDR-TB) and depression both remains one of the biggest health problems in developing and industrialized countries and is associated with high rates of morbidity and mortality. Treatment adverse events, psychological problems (depression), pill burden, rigidity of DOT, psychosocial support and interaction with health personnel pose major challenges to adherence for concomitant anti-TB and antiretroviral treatments.

Objective: To determine the frequency of depression after six months treatment of multidrug resistant tuberculosis.

Materials and Methods: The Cross sectional descriptive study was conducted at Department of Pulmonology, PMDT centre, Lady Reading Hospital Peshawar (LRH) on patients enrolled for MDR-TB treatment. In this study a total of 178 cases is calculated with 95% confidence level, 5% margin of error and taking expected percentage of depression i.e. 13.3% in patients under treatment for multidrug resistant tuberculosis with the help of WHO software for sample size determination. More over non-probability consecutive sampling technique was used for sample collection. Duration of the study is six months.

Results: The total of 178 MDR-TB patients was recruited for the study. Out of 178 registered patients, 21 (12%) had depression after six months of treatment. And most of the female patients were found to be depressed.

Conclusion: Our study concludes that the frequency of depression was found to be 12% after six months treatment of multidrug resistant tuberculosis.

Key Words: Depression; MDR-TB; Peshawar; LRH; PMDT; Pakistan

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INTRODUCTION

Tuberculosis (TB) remains one of the biggest health problems in developing and industrialized countries and is associated with high rates of morbidity and mortality. The emergence and spread of Mycobacterium tuberculosis strains resistant to multiple drugs represent a serious threat to TB control worldwide.[1]

The estimated prevalence of MDR among new cases was 1.8% and 6.7% among previously treated cases. The estimated number of new MDR-TB cases annually was 8,000.[2] Early diagnosis of active TB and detection of multidrug-resistant (MDR) strains are essential to interrupt transmission.[3] Treatment adverse events, pill burden, rigidity of DOT, psychosocial support and interaction with health personnel pose major challenges to adherence for concomitant anti-TB and antiretroviral treatments.[4,5]

Management of multidrug-resistant TB (MDR-TB) patients is highly challenging. Such patients are

subject to long and potentially toxic treatments and may develop a number of different psychiatric illnesses such as anxiety and depressive disorders. A mental health assessment before MDR-TB treatment initiation may assist in early diagnosis and better management of psychiatric illnesses in patients already having two stigmatizing and debilitating diseases.[6]

With growing evidence showing psychiatric illnesses such as depression, anxiety and psychosis to be associated with MDR-TB, mental health care for patients with these two stigmatizing and debilitating diseases demands attention.[7] An MDR-TB patient co-infected with HIV is subject to long and potentially toxic treatment that may make the patient debilitated, stressed, and de-motivated.[8]

Psychiatric illnesses, including depressive symptoms, during MDR-TB treatment demand attention. Routine administration of baseline mental health assessments by trained staff has the potential to assist in determining appropriate measures for the management of depressive symptoms during MDR-TB treatment, and help in improving overall treatment outcomes.[6]

One study has reported that among cases under treatment of MDR-TB, the frequency of depression was 13.3%, whereas another study has reported it to be 43%.[9,10]

Rationale of this study is to find out the frequency of depression in the treatment of multidrug resistant tuberculosis. There is enough evidence to suggest that depression is common among MDR-TB patients, however there is variation in prevalence amongst various studies. No such study is available to assess the prevalence of depression in MDR-TB in local literature. Therefore a study is planned to find out the frequency of depression among MDR-TB patients, which on one hand will generate local data and on the other hand will help to improve management of MDR-TB patients.

OBJECTIVE

To determine the frequency of depression after six months treatment of multidrug resistant tuberculosis.

Operational Definitions

Multidrug Resistant Tuberculosis: It was defined as TB that was resistant to at least both was oniazid and rifampicin[11] that was confirmed by phenotypic drug susceptibility testing (DST).

Depression: It was labeled if HADS score is 11 or more after at least six months of treatment of MDR-TB.

MATERIAL AND METHODS

Setting: Department of Pulmonology, Lady Reading Hospital, Peshawar.

Study Design: Cross sectional descriptive study.

Duration of Study: Six months.

Sample Size: Sample size of 178 cases is calculated with 95% confidence level, 5% margin of error and taking expected percentage of depression i.e. 13.3% in patients under treatment for multidrug resistant tuberculosis[9] with the help of WHO software for sample size determination.

Sampling Technique: Non-probability, consecutive sampling.

Selection Criteria:

Inclusion Criteria:

Patients of age 20-60 years of either gender under treatment of MDR-TB (as per operational definition) for more than 6 months.

Exclusion Criteria:

Patients previously having neurological or psychological problems before diagnosis of MDR-TB (as per medical record and history)

Co-infection with HIV

Data Collection Procedure:

One hundred and eighty (180) cases fulfilling inclusion criteria were enrolled in study from Programmatic Management of Drug Resistance Tuberculosis (PMDT) site at Department of Pulmonology, Lady Reading Hospital, Peshawar. Informed consent was taken from patients. Demographic data (including name, age, gender, duration of MDR-TB treatment) was also be recorded. Then patients were assessed for depression by using HADS scoring criteria. Patients were labeled as depressed, if HADS score is 11 or more, (as per operational definition). All the information was collected on a specially designed proforma.

Data Analysis

All the collected data was entered into SPSS version 20 and analyzed through it. Quantitative data like age and duration of MDR-TB was presented as mean and standard deviation. Qualitative data like gender, depression was presented as frequency and percent-

age. Depression was stratified for age, gender and duration of MDR-TB treatment to control effect modifier. Post stratification was done through Chi square test keeping P-value $\leq$ 0.05 was taken as significant. All the results were displayed in charts, tables and graphs.

RESULTS

This study was conducted at Department of Pulmonology, Lady Reading Hospital, Peshawar. In which a total of 178 patients were observed to determine the frequency of depression after six months treatment of multidrug resistant tuberculosis and the results were analyzed as;

Age distribution among 178 patients was analyzed as 36(20%) patients were in age range 20-30 years, 46(26%) patients were in age range 31-40 years, 53(30%) patients were in age range 41-50 years, 43(24%) patients were in age range 51-60 years. Mean age was 39.45 ± 14.49. (Table 1)

Frequency of depression among 178 patients was analyzed as 21(12%) patients had depression while 157(88%) patients didn't had depression.(Table 2)

Gender distribution among 178 patients was analyzed as 80(45%) patients were male while 98(55%) patients were female. (Table 3)

Duration of MDR-TB among 178 patients was analyzed as 71(40%) patients had MDR-TB < 1 year while 107(60%) patients had MDR-TB > 1 years. Mean age was 39.45 ±14.49. (Table 4)

DISCUSSION

Multi drug resistant tuberculosis (MDR-TB) remains one of the biggest health problems in developing and industrialized countries and is associated with high rates of morbidity and mortality.

Our study shows that similar results were found in another study conducted by MehreenSet al[12] in lady reading hospital Peshawar in which Out of 213 registered patients, 139 (65.5%) had depression at baseline. At the end of 1st quarter, only 47 (22.6%) still had depression and at the end of 2nd quarter this number further decreased to 35 (16.43%) Two third of the depressed patients were suffering from mild to moderate depression whereas 8.95% patients were severely depressed at the start of their treatment

Table 1. Stratification of Depression With Respect to Age Distribution (n=178)

Depression	Yes	No	Total	χ^2
20-30 years	4	32	36	0.99
31-40 years	6	40	46	
41-50 years	6	47	53	
51-60 years	5	38	43	
Total	21	157	178	

Note: χ2= Chi square; Mean age was 39.45 ±14.49

Table 2. Depression in MDR-TB Patients (n=178)

Depression	Frequency	Percentage (%)
Yes	21	12%
No	157	88%
Total	178	100%

Table 3. Stratification of Depression With Respect to Gender Distribution (n=178)

Depression	Yes	No	Total	χ^2
Male	9	71	80 (45%)	0.84
Female	12	86	98 (55%)	
Total	21	157	178	

Note: χ 2= Chi square

Table 4. Stratification Of Depression With Respect To Duration Of MDR-TB (n=178)

Depression	Yes	No	Total	χ^2
< 1 year more than 6 month	8	63	71(40%)	
>1 years	13	94	107 (60%)	
Total	21	157	178	0.86

Note: χ^2= Chi square

(baseline). At each follow up psycho logical assessment was done and find out the depression level. At first follow up (1st month of treatment) depression was 42.3%, out of which 97.34% were suffering from mild and moderate depression whereas 2.65% patients were severely depressed. When the depression was assessed at 2nd month follow up (3rd visit) it was 36.3%, out of which more patients (97.93%) were suffering from mild and moderate depression whereas 2.06% patients were severely depressed. At third month (4th visit) depressed patients were 30.0% out of which 90.0% patients were suffering from mild and moderate depression whereas 10.0% patients were severely depressed. At start of the treatment (at baseline), 74 normal patients 21 (15.90%) patients had mild and moderate depression after taking one month treatment, whereas 4.10% suffered from severe depression. Twenty (15.15%) were those patients who were normal at zero and 1st month but mildly depressed at 2nd month (3rd visits). At 3rd month (4th visit) 14 (10.60%) more normal patients were became depressed, out of this 13 (92.85%) were suffering from mild depression whereas 1 (7.15%) patient was severely depressed. Out of 74 patients without depression at the baseline, 17 (23%) became depressed at the end of 1st quarter and 9 (12.8%) more developed depression at the end of 2nd quarter making a total of 26 (35.13%) in those not depressed at baseline

Similar results were found in another study conducted by Aamir S et al[13] in which (mean age 36 years), married 44 (68%),less educated (6.5 mean years ofeducation), lowsocioeconomic class 55(85%) and patients from ruralbackground, 57(88%) were affected by TB with co-morbid anxiety and depression.at the end of 6 months, 14 (22%) patients having moderate to severe level of comorbid anxiety and depression showed MDR-TB and therefore, did not adhere to the treatment for 6months. The rest of 33 (50.7%) complied to TBtreatment as after early screening of anxiety anddepression they consulted a local psychiatrist for thediagnosis and treatment of anxiety and depression.Their adherence to TB treatment can be attributed toearly detection and timely intervention of anxiety anddepression. While among 18 (27.7%) TB patients who had no co-morbid symptoms of anxiety and depression,only 3 (4%) showed MDR-TB

Similar results were found in another study conducted by Vega P et al[14] in which the frequency of depression was 13.3%.

The present research concluded that level of depression was high among TB patients. Reasons forthehigher level of depression was its misconception about TB. They considered TB as adangerous disease that had less chances of survivaland cure that resulted in discontinuation of treatment.Other causes reported were lengthy process oftreatment, disturbances in their life routine and its chronicity. It is suggested that in order to improve adherence and continuation of DOTS, as multi-drugresistance (MDR-TB) is common among TB patients,timely treatment of symptoms like anxiety anddepression can play an important role. It can behypothesized that TB patients diagnosed and treated intime for psychiatric co-morbidity are more likely tocontinue with TB treatment. To further address thisimportant issue in future, comparativestudies on largerrandom samples taken from different private andgovernment sector hospitals and TB centres across thecountry are recommended.

CONCLUSION

Our study concludes that the frequency of depression was found to be 12% after six months treatment of multidrug resistant tuberculosis.

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