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Original Research Paper

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DEPRESSION ASSOCIATED WITH MULTI-DRUG RESISTANT TUBERCULOSIS

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ABSTRACT

Background:- Both depression and multi-drug resistant tuberculosis (MDR-TB) are global public health problems with substantial impact on human health.

Material & Methods:-A hospital based cross sectional study was conducted between May 2017 to April 2018 in Department of Respiratory Medicine, Institute of Respiratory Diseases, Sawai Man Singh Medical College, Jaipur, Rajasthan. The demographic details and predisposing factors of 90 newly diagnosed MDR-TB cases were noted.

Results:- Total 90 cases were included in this study. Among these 59(65.6%) cases had depression out of which 30(50.9%) had mild depression, 19(32.2%) had moderate depression and 10(16.9%) had moderately severe depression.

Conclusion:- Younger age, female gender, low weight, low BMI and unmarried status were associated and independent risk factors of depression.

KEYWORDS : Depression; Multi-drugresistant tuberculosis

Introduction

Multi-drug resistant tuberculosis (MDR-TB), defined as resistance to isoniazid(INH) and rifampicin (RIF), has posed serious challenges in controlling TB[1,2]. Compared to first-line anti TB therapy, compliance with MDR-TB treatment is considerably difficult because of its prolonged duration and frequent adverse effects of second-line drugs (SLDs)[3].The Global TB Report 2017 published by the World Health Organization estimates that India contributes 25%(147000) of the global burden of MDR-TB[4].Depression is a major public health problem in India, contributing to significant morbidity, disability as well as mortality, along with significant socioeconomic losses. The prevalence of depression in the general population of India is 5.25%[5].People with depression are often stigmatized and excluded from family and society. They also tend to under-perform in education and work, thereby remain increasingly deprived of economic and social opportunities, with a decreased quality of life. The economic impact of depression is huge and unmeasured and vitiates the cycle of poverty and poor health. Low and middle income households are affected the most. Depression may also adversely affect the compliance to treatment and result in default which in turn may have serious consequences of treatment failure and further extension in drug resistance.

Materials and Methods

This prospective cross sectional hospital based study was carried out on newly diagnosed MDR TB cases at Department of Respiratory Medicine, Institute of Respiratory Diseases, Sawai Man Singh Medical College, Jaipur, Rajasthan. 90MDR-TB cases were included. Known cases of depression or other co-morbid illness were excluded.

Study protocol

After giving full explanation regarding the study, written consent was obtained from all enrolled cases. After applying inclusion and exclusion criteria in newly diagnosed MDR TB cases, study population was selected. Their counselling was done at the time of registration. These patient's socio-demographic data and past history of tuberculosis in detail taken and then depression analysed and categorized by application of the Patient Health Questionnaire (PHQ 9)[6].We got outcome variables and than their analyses done to correlate socio-demographic data, past history of tuberculosis and severity of depression. Patient Health Questionnaire (PHQ 9) for Depression – Score ranges from 0 to 27. Hindi translations of PHQ-9questions were self administered by the patients.

Statistics

Statistical Package for Social Sciences version 20.0 (SPSS Inc, Chicago, IL) was used for data analysis. Continuous variables are presented as mean±SD and non continuous variables as median with inter quartile range (IQR). Bivariate relationships between the variables were assessed by the Spearman rank-correlation coefficient(r). P value of less than 0.05 was considered as significant.

Results

Out of 90 cases 75.5% were above 30 years of age. Nearly 2/3rd cases were male and most of the cases were from urban background. 41.1% cases were uneducated, 77.8% cases were married and 90% cases had body mass index less than 18.5. Most (73.3%) of the cases belonged to lower socioeconomic status. [table-1]

Table-1: Baseline characteristics of study cases

Patients Characteristics	No. of patients (%) N = 90	Mean (Range)
Age(Years)		**38.16(14-73)**
<30	22 (24.5%)	
≥ 30	68 (75.5%)	
Gender		
Male	60 (66.7%)	
Female	30 (33.3%)	
Residence		
Rural	40 (44.5%)	
Urban	50 (55.5%)	
Weight		**41.68(25-70)**
≤40 kg	46 (51.1%)	
>40 kg	44 (48.9%)	
BMI(kg/meter^2)		**15.40(10.1-25.2)**
<18.5	81 (90%)	
≥18.5	9(10%)	
Marital Status		
Married	70 (77.8%)	
Unmarried	20 (22.2%)	
Education		
Uneducated	37 (41.1%)	
Educated	53 (58.9%)	

Monthly Income (in Rupees)		
≤10000	66 (73.3%)	
>10000	24 (26.7%)	
Previous TB Treatment		
Yes	86 (95.5%)	
No	4 (4.5%)	

After applying PHQ9 scale 59(65.6%) cases were classified as having depression out of which 30(50.9%) had mild depression, 19(32.2%) had moderate depression and 10(16.9%) had moderately severe depression. Most of the cases having depression were male, older than 30 years age, with urban background, weight less than 40 kg, BMI less than 18.5, married, educated and belonged to lower socioeconomic status. [table-2]

Table-2:Association of depression with variables

Variables			Depression
Gender	Male	60 (66.7 %)	35 (59.3%)
	Female	30 (33.3 %)	24 (40.7%)
Age (Years)	<30	22 (24.4%)	20 (33.9%)
	≥ 30	68 (75.6%)	39 (66.1%)
Residence	Rural	40 (44.4%)	26 (44.1%)
	Urban	50 (55.6%)	33 (55.9%)
Weight	≤40 kg	46 (51.2%)	35 (59.3%)
	>40 kg	44 (48.8%)	24 (40.7%)
BMI	<18.5 kg/meter^2	81 (90%)	56 (94.9%)
	≥18.5 kg/meter^2	9(10%)	3 (5.1%)
Marital Status	Married	70 (77.8%)	41 (69.5%)
	Unmarried	20 (22.2%)	18 (30.5%)
Education	Uneducated	37 (41.1%)	22 (37.3%)
	Educated	53 (58.9%)	37 (62.7%)
Monthly Income (in Rupees)	≤10000	66 (73.4%)	45 (76.3%)
	>10000	24 (26.6%)	14 (23.7%)
Previous TB treatment	Yes	86 (95.6%)	57 (96.6%)
	No	4 (4.4%)	2 (3.4%)

After application of statistical tool female gender,age less than 30 years,unmarried status, weight less than 40 kg and BMI less than 18.5were significantly associated with depression. [table-3]

Table-3:Univariate analysis of factors potentially contributing depressed state

Variables		95% CI	odds ratio	p value
Gender	Male	0.1248- 0.9817	0.35	**0.046**
	Female			
Age (Years)	<30	1.6086- 34.3734	7.4359	**0.0102**
	≥ 30			
Residence	Rural	0.3991- 2.2936	0.9567	**0.921**
	Urban			
Weight	≤40 kg	1.0773- 6.5258	2.6515	**0.0338**
	>40 kg			
BMI	<18.5 kg/meter^2	1.0363- 19.3665	4.48	**0.0447**
	≥18.5 kg/meter^2			
Marital Status	Married	0.0338- 0.7301	0.1571	**0.0182**
	Unmarried			
Education	Uneducated	0.2630- 1.5293	0.6342	**0.3106**
	Educated			
Monthly Income (in Rupees)	≤10000	0.5845- 4.0085	1.5306	**0.3862**
	>10000			
Previous TB treatment	Yes	0.2633- 14.6743	1.9655	**0.51**
	No			

Discussion

Frequency of depression observed in this study (65.6%) was much greater as compared with the prevalence in the general population of India (5.25%)[4]. This study finding was much greater as compared with 11% found by Aghanwa et al[7] in Nigeria, 19% found by Aydin IO et al[8] in Turkey, 49% found by Natani et al[9] in India. Arshad Javaid et al[10]also found younger age and female gender associated with depression. The gender difference is likely to be due to a complex interaction between biological, psychological and socio-cultural vulnerabilities[11]. Female patients with MDR-TB in developing countries become lonely and socially stigmatized with consequent depression[12].In the present study all MDR-TB cases with age lower than 30 years had experienced more episode of depression as compared to older age patients. A possible explanation for the stated reason is that as MDR-TB treatment is of longer duration and large number of drugs accompanied makes young people more prone to loss in their self-esteem and courage[13]. Reason for depression may include hopelessness, sense of worthlessness, hospitalization, social stigmatization and loss of earning all these factors lead to self-depreciation, conscious and unconscious fear of ailment and death [14,15].Unmarried status found to be significantly associated with depression. A possible explanation as these unmarried cases are younger in age and low maturity level cannot withstand such harsh situation of disease burden as well as social stigma hence leading towards significant depression[16]. Low body mass index leads to malnutrition and makes a person more prone to tuberculosis infection. However, according P. Vega et al[3] multiple treatment failures, losing family members to the disease and poverty found to be associated with baseline depression. According Natani GD et al[9] depression was associated with cases of labour class, illiterates, duration of illness, separated or widowed and those with low per capita income. Adherence is especially important in the case of MDR-TB, as this is often a patient's last treatment option; failure to complete this treatment leads to a high rate of fatality, in addition to ongoing transmission of highly drug-resistant strains.

Conclusion

Healthcare professionals involved in the management of MDR-TB patients should be properly skilled to execute proper mental health assessment tools, in particular at baseline, so that the presence of depression can be identified on earlier basis. It is recommended to regularly monitor the mental health status of MDR-TB patients by skilled clinical psychologist/counsellors, using simple, validated and cost-effective tools. Patients can be referred to a psychosocial support group comprised of patients in treatment and cured individuals. This methodology has been effective in combating the psychosocial impact of the disease, including marginalization and stigma, hopelessness and grieving, as well as contemplation of suicide or treatment default. Patients with depression are more prone to non adherence to treatment and default, causing further increases in resistance to drugs and treatment failure. Consequently, effective management of depression is critical not only for the desired patient outcome, but also for patient's overall health and physician's satisfaction while dealing with MDR-TB therapy.

References

1. Cole ST (2001) Drug resistance and tuberculosis chemotherapy-Fromconceptto genomics. Bacterial Resistance to Antimicrobials 355.
2. Chiang CY, Centis R, Migliori GB (2010) Drug-resistant tuberculosis:Past,present, future. Respirology 15: 413-432.
3. P. Vega,A. Sweetland, J. Acha (Psychiatric issues in the management of patients with multidrug-resistant tuberculosis) INT J TUBERC LUNG DIS 8(6):749–759 © 2004 IUATLD
4. Global Tuberculosis Report 2017. Geneva: World Health Organization; 2017 (www.who.int/tb/publications/global_report)
5. World health Organization - Depression in India (http://www. searo.who.int /india/depression_in_india.pdf)
6. Spitzer RL, Kroenke K, Williams JBW. Patient Health Questionnaire Study Group. Validity and utility of a self-report version of PRIME-MD: the PHQ Primary Care Study. JAMA. 1999;282:1737–44.
7. Aghanwa HS, Erhabor GE (1998) Demographic/socioeconomic factorsin mental disorders associated with TB in southwest Nigeria. J Psychosom Res 45: 353-360.
8. Aydin IO, Ulusahin A (2001) Depression, anxiety comorbidity and disability in tuberculosis and chronic obstructive pulmonary disease patients: applicability of GHQ-12. Gen Hosp Psychiatry 23: 77–83.
9. Natani GD (1985) Depression in TB patients: Correlation with duration of disease and response to anti-tuberculous chemotherapy. Indian Journal of Tuberculosis 32: 195.
10. Javaid et al., J Depression Anxiety 2017, Journal of Depression and Anxiety Depression and its Associated Factors with Multidrug-Resistant Tuberculosis at Baseline.

11. Bereket Duko, Abebaw Gebeyehu, and Getnet Ayano et al (Prevalence and correlates of depression and anxiety among patients with tuberculosis at WolaitaSodo University Hospital and Sodo Health Center, WolaitaSodo, South Ethiopia)Cross sectional study.BMC psychiatry 15:1.
12. Orth U, Robins RW, Roberts BW (2008) Low self-esteem prospectively predicts depression in adolescence and young adulthood. J Pers Soc Psychol 95: 695-708
13. Griffiths KM, Christensen H, Jorm AF (2008) Predictors of depression stigma. BMC psychiatry 8:25.
14. Tandon AK, Jain SK, Tandon RK, Asare R, 1980) Psycho-social study of tuberculous patients. Ind J Tuberc 27:172.
15. Morris MD, Quezada L, Bhat P, Moser K, Smith J, et al. (2013) Social, economic, and psychological impacts of MDR-TB treatment in Tijuana, Mexico: a patient's.
16. Purohit DR (1978) Incidence of depression in hospitalized TB patients. Ind J Tuberc 25: 147.