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Research Article

Prevalence of Depression in Tuberculosis Patients in a Tertiary Care Hospital

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Abstract: Tuberculosis (TB) is a global health problem, particularly in developing countries. World health organization estimates that 2 billion people have latent TB, while another 3 million people worldwide die each year due to TB. Co morbidity of TB and depression is common and the prevalence of depression with a chronic physical condition ranges between 25 and 33%. Management of depression in TB patients presents a challenge to physicians. This was a prospective study conducted at a tertiary care hospital in South India from March 2014 to June 2015. Patients registered in the DOTS clinic, and currently on anti-tubercular drugs for at least one month duration were included in the study. Patients with medical disorders, psychiatric disorders and treatment for depression prior to the onset of TB were excluded from the study. The study was approved by institutional ethics committee and informed consent was taken from all the participants. A total of 147 participants were included in the study. 84% of TB patients had some degree of depression. Depression was higher in males and in age group of 26-40 years. Most common degree of depression was moderate depression followed by minimal depression. Other statistical significant difference in prevalence of depression was observed in unmarried, patients experiencing side effects, coughing and weight gain patients. Presence of a persistent cough at the time of the study was significantly related to depression (P=0.03), and of the 107 patients, 36 had persistent cough (33.6). A commonly used measure of improvement in patients with TB is weight gain. In the present study 44 patients had weight pain with depression. A significant association was found between the duration of treatment and prevalence of depression. Interestingly the depression was statistically significant in patients <7months of treatment, but other studies have reported that depression increase with the duration of treatment. It is suggested that in order to improve adherence and continuation of anti-TB treatment, timely treatment of depression can play an important role. Primary care doctors and community workers should have a high index of index of suspicion for depression when assessing TB patients
Keywords: Tuberculosis, Prevalence, Depression, Patient Health Questionnaire (PHQ-9)

INTRODUCTION

Tuberculosis (TB) is a global health problem, particularly in developing countries. World health organization estimates that 2 billion people have latent TB, while another 3 million people worldwide die each year due to TB [1]. India has featured among the 22 high TB burden countries; and has accounted for an estimated one quarter (26%) of all TB cases worldwide [2]. Studies have shown that the prevalence of depression and other psychiatric disorders is high among patients with TB [3, 4]. Depression is a common mental illness and one of the leading causes of disease burden affecting 121 million people worldwide. Suicide due to depression is associated with the loss of about 850,000 lives every year [5].

According to Global Burden of Disease (GBD) study, depression is the fourth most important cause of global disability-adjusted life years [6]. It is estimated that up to one-third of individuals with a serious medical condition can experience symptoms of depression. The risk increases with severity of illness and the level of life disruption it causes [7]. Co morbidity of TB and depression is common and the prevalence of depression with a chronic physical condition ranges between 25 and 33% [8] and the cause of the co morbidity remains unclear. All these factors present a management challenge to physicians.

Some of the factors related to depression among persons with chronic pulmonary diseases are chronic psychogenic and somatic pain, frequent hospital admissions and dependency. Interventions using cognitive behavior therapy were done and have proved helpful in the management of various chronic diseases including TB, cognitive therapy resulted in less percentage of defaulter rate and increased number of treatment completion [9]. The present study was done to assess the prevalence of depression and its associated factors among tuberculosis patients.

MATERIAL AND METHODS

This was a prospective study conducted at a tertiary care hospital in South India from March 2014 to June 2015. Patients registered in the DOTS clinic, and currently on anti-tubercular drugs for at least one month duration were included in the study. Patients with medical disorders, psychiatric disorders and treatment for depression prior to the onset of TB were excluded from the study. The study was approved by institutional ethics committee and informed consent was taken from all the participants.

We distributed a self-structured, pre-validated, closed ended questionnaire, also containing socio-demographic and some clinical aspects of TB. The patients were administered to Patient Health Questionnaire (PHQ-9). PHQ-9 is specifically designed for use in primary care and outpatient settings and has-been widely used in both clinical practice and research [10, 11]. The data was recorded and analyzed using SPSS version 16.0. Results were calculated as frequencies (%), means and standard deviations. The Chi-square test was used to calculate the differences between groups at a 5% level of significance.

RESULTS

A total of 147 participants were included in the study. The interpretation of the scores rates the severity of depression. A score of 1-4 indicates minimal depression; 5-9 mild depression; 10-14 moderate depression; 15-19 moderately severe depression; and 20-27 severe depression. The depression in TB patients is shown in table 1.

Table-1: Depression in TB patients

Diagnosis	Number (%)	Mean PHQ-9 score (SD)
No depression	24 (16.3)	0
Minimal depression	33 (22.4)	3.4 (0.9)
Mild depression	29 (19.7)	8.3 (1.46)
Moderate depression	34 (23.1)	13.2 (1.89)
Moderately severe depression	15 (10.2)	17.6 (1.32)
Severe depression	12 (8.16)	24.3 (1.66)

Maximum cases were moderate depression followed by minimal depression. The Association of socio-demographic characteristics with severity of depression is shown in table 2.

Table-2: Association of socio-demographic characteristics with severity of depression

Variable	Severity of depression			P value
	Mild	Moderate	Severe	
Male	18	20	7	NS
Female	11	14	5	NS
Age				
15-25	3	5	2	NS
26-40	11	14	6	0.02
40-50	9	7	3	NS
> 50	6	8	1	NS
Marital status				
Married	12	19	8	NS
Unmarried	17	15	4	0.04
Report of side effects of drugs				
Yes	19	20	9	0.02
No	10	14	3	NS
Patient still coughing				
Yes	9	22	5	0.03
No	20	12	7	NS
Weight gain since treatment				
Yes	11	24	9	0.04
No	18	10	3	NS

The association of depression with duration of treatment is shown in table 3.

Table 3: Association of depression with duration of treatment

Duration of treatment	Severity of depression			P value
	Mild	Moderate	Severe	
< 3 months	15	12	2	0.02
3 to 6 months	6	20	9	0.01
> 7 months	8	2	1	NS

NS= not significant

The characteristics of tuberculosis are shown in table 4.

Table-4: Characteristic of tuberculosis inpatients

Diseases classification	Frequency	%
Pulmonary	102	69.3
Extra-pulmonary	45	30.6
Category		
I	112	76.1
II	35	23.8
Disease extent*		
Mild	29	19.7
Moderate	95	64.6
Severe	23	15.6

* Mild: located to a zone; moderate: more than a zone but one side of the lung; severe: both lungs

DISCUSSION

In the present study 84% of TB patients had some degree of depression. The prevalence of depression was lower in other studies [4, 12]. Depression was higher in males and in age group of 26-40 years. Most common degree of depression was moderate depression followed by minimal depression. Other statistical significant difference in prevalence of depression was observed in unmarried, patients experiencing side effects, coughing and weight gain patients (table 2). Other studies have reported a female preponderance of depression in females [13, 14]. A significant relationship is established between the reported side effects of drugs and depression in our study, similar to another recently conducted study [15].

Presence of a persistent cough at the time of the study was significantly related to depression (P=0.03), and of the 107 patients, 36 had persistent cough (33.6). A commonly used measure of improvement in patients with TB is weight gain. In the present study 44 patients had weight pain with depression (table 2). These findings are similar to a recent study [16]. A significant association was found between the duration of treatment and prevalence of depression (table 3). Interestingly the depression was statistically significant in patients <7months of treatment, but other studies have reported that depression increase with the duration of treatment [17, 18].

Majority of the patients had pulmonary tuberculosis (69.3), category I cases accounted for 76& of the cases. Other characteristics of tuberculosis are shown in table 4. Depression was 100% for those in stage III which was due to the fact that all the cases seen were in this stage. These findings are different from a recent study conducted in India [15]. The difference observed in the present study might be due to geographical and demographic variables.

Psychiatric conditions like depression and anxiety are high among TB patients, major reason being misconception about TB. They considered TB as a dangerous disease that had less chances of survival and cure that resulted in discontinuation of treatment. Other causes reported were lengthy process of treatment, disturbances in their life routine and its chronicity [19].

Limitations of the study

The sample size was small and the present study was conducted in only one centre. We did not include a control group in our study. Future studies should be multi-centric and have a large sample size and include a control group.

CONCLUSION

A considerable proportion of patients suffering from tuberculosis had depression of varying severity. Higher degree of depression was associated with males, age group of 26-40 years, patients with side effects to drugs, unmarried and with pulmonary tuberculosis. It is suggested that in order to improve adherence and continuation of anti-TB treatment, timely treatment of depression can play an important role. Primary care doctors and community workers should have a high index of index of suspicion for depression when assessing TB patients.

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