

Prevalence of Depression in Chronic respiratory diseases

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Abstract: Background & objective: Chronic respiratory diseases continue to be common problem in India and cause significant morbidity and mortality. In patients with respiratory diseases functionality may be severely impaired due to chronic psychogenic and somatic pain, frequent hospitalization. Patients with chronic respiratory diseases and depression are at increased risk of mortality. There are very limited study about prevalence of depression in patients with chronic respiratory illness especially in hilly region of India where patients more symptomatic that lead to physical de conditioning. The objective of our study to establish the prevalence of depression in patients with chronic respiratory illness in hilly region of uttarakhand. **Methods:** We analyze prevalence of depression in Chronic respiratory illness such as Chronic obstructive pulmonary diseases, pulmonary tuberculosis & bronchial asthma in 166 patients hospitalize in chest & tuberculosis department of tertiary hospital. After detailed work up by chest physician these patients were evaluated by psychiatrist for presence and severity of depression using Beck's depression inventory. **Result:** Sample include 116 males and 50 females patients. Pulmonary tuberculosis, COPD, and bronchial asthma was found in 49,84, and 33 patients respectively. Depression was observed in 51.02 % of pulmonary tuberculosis, 64.28 % of chronic obstructive pulmonary diseases and 27.27 % of bronchial asthma patients. Seventy percent of female patients had depression in comparison to 45.68% of males. Severe depression was more frequent in COPD (22.22%) in comparison to pulmonary tuberculosis (16.00%) and Bronchial Asthma (0.00%). **Conclusion:** This study shows that more than half of patients with COPD and pulmonary tuberculosis also suffer from depression. . . Pulmonary rehabilitation reduce anxiety and depression in patients suffer from chronic respiratory disorders **Keywords:** depression, chronic obstructive pulmonary diseases, bronchial asthma, pulmonary tuberculosis

I. Introduction

Psychiatric disorder is common in patients with chronic respiratory illness and not solely on the basis of age, depression, or organic disease. Frequently such patients become depressed, frightened, anxious, and more dependent on others to care for their needs. Exertional dyspnea is a frightening symptom and may lead to a vicious "fear-dyspnea" cycle: With progressive disease, less exertion results in more dyspnea, which produces more fear and anxiety, which, in turn, lead to more dyspnea . This phenomenon seems to be more marked in hilly regions where routine activities put more exertion in comparison to plains. The lifetime prevalence of mood disorder in patients with chronic disease is 8.9% to 12.9%, with a 6-month prevalence of 5.8% to 9.4%¹⁻². In a study 28.1% of patients hospitalized in general medical or surgical hospital wards had depression³⁻⁴. Depression is a leading cause of disability worldwide and an increasing cause of physical and psychological impairment in persons with COPD (chronic obstructive pulmonary disease)⁵. Similarly stigma associated with tuberculosis puts patients at risk of developing depression⁶. The association between asthma and psychological factors has been recognized for centuries⁷. Although sadness and mild depression may be considered a fairly normal response to a diagnosis of chronic illness, more severe, chronic depression can lead to serious consequences for persons with asthma⁸. We did not find any study which assessed depression in chronic respiratory diseases among inhabitants of hilly region. So this study was planned to assess prevalence of depression in patients with chronic respiratory illness

II. Material & method

Type of Study: Cross sectional hospital based study

Method: The study was conducted in a tertiary care teaching hospital situated in subhimalayan zone of Uttarakhand. This hospital caters health need of a large geographical area of hilly region. After taking appropriate permissions study was conducted from 1st January 2012 to 31 April 2012. All consecutive patients of bronchial asthma, chronic obstructive pulmonary diseases, or pulmonary tuberculosis admitted to chest and

tuberculosis ward were considered for study. Those who had duration of illness more than 8 weeks, and agreed to give written informed consent were enrolled in study. After detailed work up by chest physician these patients were evaluated by psychiatrist for presence and severity of depression using Beck's depression inventory. A semi-structured Questionnaire prepared in Hindi was used for details of sociodemographic status and physical illness.. Becks Depression Inventory was used for assessment of depression and grading was done as minimal, mild, moderate and severe.. The questionnaires were filled in by psychiatrist interviewing the patients. Diagnosis was made as per Diagnostic and Statistical Manual of Mental Disorders, fourth edition. Results were analyzed using appropriate statistical tests.

Table 1- Sociodemographic profile of cases

Education	Total patients	Number of patients with Depression disorder	%
Illiterate	48	34	70.83
primary	77	41	53.24
secondary	41	13	31.70
Total	166	88	53.01
Marital status			
Married	158	87	53.16
Unmarried	8	1	12.50
Age (years)			
15-30	23	14	60.86
31-45	40	14	17.50
46-60	51	25	49.01
>60	52	35	67.30
Total	166	88	
Sex			
Male	116	53	45.68
Female	50	35	70.00
Total	166	88	
Per capita family income/month(INR)			
<10000	147	78	53.06
10000-20000	14	9	64.28
>20000	5	1	20.00
Total	166	88	
Occupation			
Unemployed	118	65	55.08
Employed	35	15	42.85
Retired	13	8	61.53
Total	166	88	

Table 2. Classification of patients according to duration of illness

Duration	Total pt	No of depressed pt	%
< 3 month	29	13	44.82
3 – 6	32	17	53.13
6 – 12	13	7	53.84
> 12	92	51	55.43
Total	166	88	

Table 3. Prevalence of depression in chronic respiratory illness

Diseases	Total patient	Number of patients with depression	%
Pulmonary TB	49	25	51.02
COPD	84	54	64.28
B. Asthma	33	09	27.27
	166	88	53.01

Table 4. Severity of depression in different respiratory diseases

Disease	Mild	Moderate	Severe	Total
Pulmonary TB	14(56.00%)	07(28.00%)	04(16.00%)	25(100%)
COPD	24(44.44%)	18(33.33%)	12(22.22%)	54(100%)
B asthma	08(88.88%)	01(11.11%)	0(0.00%)	09(100%)

Table 5. Prevalence of depression in Pulmonary Tuberculosis

Pulmonary Tuberculosis case classification	Total	Number of patients with depression	Percentage
New	35	16	45.71
Previously treated	14	9	64.28

III. Result

During the study period 270 patients were admitted in chest ward and 192 patients suffers from either chronic obstructive pulmonary diseases , pulmonary tuberculosis & bronchial asthma .Of these 26 were excluded on basis of exclusion criteria and remaining 166 were enrolled in the study. Sample include 116 males and 50 females patients. Pulmonary tuberculosis, COPD, and bronchial asthma was found in 49,84, and 33 patients respectively. The mean age of study patients was 46.23 years. Seventy percent of female patients had depression in comparison to 45.68% of males. Disease wise analysis revealed that depression was observed in 51.02 % of pulmonary tuberculosis, 64.28 % of chronic obstructive pulmonary diseases and 27.27 % of bronchial asthma patients. On further analysis of tuberculosis patients it was revealed that depression was present in 45.71% of new sputum positive and 64.28 % of previously treated cases. Severe depression was more frequent in COPD (22.22%) in comparison to pulmonary tuberculosis (16.00%) and Bronchial Asthma (0.00%). Depression was more frequent in Illiterate (70.83 %), unemployed (55.18%), and retired (61.53%) patients.

IV. Discussion

This study found that depression was more frequent in COPD compared to bronchial asthma and pulmonary tuberculosis . Several factors may contribute to a higher rate of depressive symptoms in COPD when compared to other chronic disorder⁹. We found that prevalence of depression in COPD in our study was higher than earlier research.¹⁰ This may be due to variability of patients in severity of airway obstruction and demographic characteristics of study patients¹¹. COPD is a slowly debilitating disease in which difficulty breathing is a progressive symptom that is distressing to patients¹²⁻¹⁴. Furthermore, treatment of dyspnea is less effective in COPD than treatment of relevant symptoms in other chronic disorders. In addition, oxygen therapy can be associated with social stigma.¹³⁻¹⁴ Given the large number of persons with COPD who have depressive symptoms and the association of depression with worse outcomes in chronic diseases, it is possible that better identification and treatment of depressive symptoms in patients with COPD would offer an effective option to improve outcomes in this population. We observed that almost half of pulmonary tuberculosis patients had depression which is similar to other studies.^{15 -16} The prevalence of depression in patients of pulmonary tuberculosis varies depending upon number of factors like longer period of suffering, hospitalization ,loss of earning, sense of hopelessness, social stigma¹⁷. The prevalence of depression was increased in patients who received treatment in past in compare to newly diagnosed case of pulmonary tuberculosis. This may be due to longer period of illness¹⁵, prolong hospitalization, more severe disease. This study also shows that prevalence of depression in Patients of bronchial asthma was lower than COPD and Pulmonary Tuberculosis but higher than general population.^{18- 19} Several data suggest that depressed patients subjectively perceives themselves as having more severe asthma symptoms than euthymic patients, but this perception is supported by objective measure of diseases severity.²⁰ Bronchial asthmatic symptoms can cause insomnia, anxiety that may increase the BDI scoring.

V. Conclusion

This study shows that more than half of patients with COPD and pulmonary tuberculosis also suffer from depression. The higher prevalence of depression in this study due to its different geographical location. Pulmonary rehabilitation reduce anxiety and depression in patients suffer from chronic respiratory disorders

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