



## PSYCHIATRIC COMORBIDITY IN PATIENTS OF BRONCHIAL ASTHMA

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**ABSTRACT**

**Introduction:** Present study was done to determine the prevalence of psychiatric comorbidity in patients of bronchial asthma. Since the comorbid psychiatric disorder can lead to over diagnosis of asthma attacks & overutilization or underutilization of health care services it is important to assess the patients of bronchial asthma for psychiatric comorbidity. Assessment of asthma patients for comorbid psychiatric disorders can lead to more appropriate and adequate treatment of both asthma and associated psychiatric condition.

**Materials & Methods:** A hospital based observational study was conducted in department of psychiatry of a tertiary care hospital. Study included 50 consecutive patients suffering from bronchial asthma attending Pulmonary Medicine OPD in our hospital. Subjects were assessed with a semi structured proforma containing details of socio-demographic profile and questions pertaining to the aims of the study. Psychiatric comorbidities were diagnosed as per DSM-V criteria [6]. Data was analysed by SPSS ver 21.0.

**Results:** Most common psychiatric co-morbidity was major depressive disorder (28%) followed by anxiety disorders (26%), alcohol (5%) and nicotine dependence (10%). A significant association was observed between marital status and severity of asthma symptoms with presence of psychiatric co-morbidities ( $p < 0.05$ ). Similarly, a significant association was also observed between asthma drug usage and psychiatric co-morbidity ( $p < 0.05$ ). Number of hospital and causality visits were also higher among these cases, the difference was however not statistically significant.

**Conclusion:** Present study observed a higher prevalence of psychiatric co-morbidities in patients of bronchial asthma especially depression and anxiety disorders. Psychiatric co-morbidities leads to an increase in the use of health care resources by these patients. So there is an urgent need for accurate diagnosis & management of these comorbidities to improve the quality of life of asthma patients.

**KEYWORDS :** Anxiety Disorders, Bronchial Asthma, Depression, Psychiatric Co-morbidities**INTRODUCTION**

Asthma is a chronic inflammatory disorder of the airways in which many cells & cellular elements play a role. The chronic inflammation causes an associated increase in airway hyper-responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness & coughing, particularly at night or in the early morning. These episodes are usually associated with widespread but variable airflow obstruction that is often reversible either spontaneously or with treatment [1,2].

Asthma is a common illness, affecting as much as 5 percent of general population. Asthma is one the psychosomatic illness. The relationship between asthma & psychosocial profiles have been studied to find that many psychiatric comorbidities are common in them [3]. In Asthma emotional arousal causes changes in airway tone. There is a large impact of stress and strong emotions on the occurrence of acute exacerbations of asthma. The severity of an asthma attack is highly correlated with presence of major depressive disorder, panic attacks and level of fear. Psycho-education, family therapy, relaxation and biofeedback have each shown efficacy in the management of patients of asthma [4].

Comorbid psychiatric disorders also play a vital role in the perception of asthma symptoms and asthma treatment (e.g., adherence and treatment-seeking behaviour), that in turn impacts prognosis, morbidity, and mortality. The perception of asthma symptoms is important because it affects the patient's behaviour during an attack, leading to over- or underutilization of asthma medications and healthcare services [5].

This study was done to determine the prevalence of psychiatric comorbidity in patients of bronchial asthma. Since the comorbid psychiatric disorder can lead to over diagnosis of asthma attacks & overutilization or underutilization of health care services it is important to assess the patients of bronchial asthma for psychiatric comorbidity. Assessment of asthma patients for comorbid psychiatric disorders can lead to more appropriate and adequate treatment of both asthma and associated psychiatric condition. Indian studies are sparse in this area so this study was planned.

**MATERIALS AND METHODS**

A hospital based observational study was conducted in department of psychiatry of a tertiary care hospital. Study included 50 consecutive patients suffering from bronchial asthma attending Pulmonary Medicine OPD in our hospital. Unwilling patients and patients with medical or surgical or psychiatric condition which may interfere with assessment were excluded.

Ethics committee approval was taken. Subjects and their relatives were explained the nature of study & informed consent was obtained. They were assessed with a semi structured proforma containing details of socio-demographic profile and questions pertaining to the aims of the study. Psychiatric co-morbidities were diagnosed as per DSM-V criteria [6]. Data was analysed by SPSS ver 21.0.

**RESULTS**

Out of the 50 cases analysed, 22 (44%) were in the 18-40 years of age, 22 (44%) were in the 41-60 years of age group & 6 (12%) were in the >60 years of age group. Slight male pre-dominance was seen in our study with 52% males & 48% females. Regarding duration of asthma, 23 (46%) cases had duration of asthma less than 2 year while 27 (54%) cases had duration of more than 2 years. In our study sample, 2 (4%) patients were from upper class, 13 (26%) from middle class (upper middle & lower middle class) & 35 (70%) patients from lower class (upper lower & lower). Out of 50 patients, 18 (36%) had morning symptoms & 16 (32%) had awakenings at night. A total of 80% cases were married while remaining 20% were either unmarried (10%) or divorced/ separated (10%). As shown in **Table 1**, 12 (24%) of the patients had more than 2 casualty visits in last 1 year, 4 (8%) had more than 2 hospital admission in a year & 15 (30%) patients had more than 2 canisters (of beta-2 agonist & corticosteroid) per month use. Psychiatric co-morbidities were seen in 31 (62%) cases (**Table 2**). Most common psychiatric co-morbidity was major depressive disorder (28%) followed by anxiety disorders (26%), alcohol (5%) and nicotine dependence (10%). A significant association was observed between marital status and severity of asthma symptoms with presence of psychiatric co-morbidities ( $p < 0.05$ ) (**Table 3**). Similarly, a significant association was also observed between asthma drug usage and psychiatric co-morbidity ( $p < 0.05$ ). Number of hospital and

causality visits were also higher among these cases, the difference was however not statistically significant (Table 4).

**DISCUSSION**

In this study, it was found that 31 asthma patients (62%) had at least 1 psychiatric diagnosis. Most common psychiatric co-morbidity was major depressive disorder (28%) followed by anxiety disorders (26%), alcohol (5%) and nicotine dependence (10%). In 13 patients of anxiety disorders - 4 patients (8%) had panic disorder with agoraphobia, 5 patients (10%) had panic disorder without agoraphobia, 2 patients (4%) had agoraphobia without panic disorder, 1 patient (2%) had generalized anxiety disorder, 1 patient (2%) had social anxiety disorder.

These findings were in agreement to Nascimento et al. [7] which had 53 (61.6%) of its patients having psychiatric comorbidity. They had used Mini-international Neuropsychiatric Interview (MINI 4.4 version) as a principal diagnostic Instrument (based on DSM IV) while we had used DSM V as the main diagnostic tool. Our results were also in concordance with Tyagi and Vyas et al. [8] who reported that 65% of asthmatics suffered from psychiatric morbidity, chief among them being anxiety and depression. Also in a study conducted by Valenca et al. [9], it was found that Twenty-seven patients (43.5%) met criteria for at least one psychiatric diagnosis & Thirteen (20.96%) of the patients with current psychiatric diagnosis had other mental comorbid disorder. In another study conducted by Heaney et al. [10], 32 out of 65 patients (49%) had psychiatric comorbidity (they had used ICD-10 as diagnostic tool). In 2007, a study was conducted in South western Nigeria on 100 consecutive asthmatics [screened using GHQ-30 (General health Questionnaire) & PSE (Present Status Examination)]. They found that psychiatric morbidity in the patients of bronchial asthma was significantly higher (36%) than those of the comparison group [11].

On comparing duration of asthma of asthma patients with psychiatric diagnosis & without psychiatric diagnosis, it was found that the duration of asthma was not significantly associated with psychiatric diagnosis. This was in agreement with a study conducted by Ramchandra et al. [12] which showed that incidence of psychiatric illness did not differ to a statistically significant level with duration of illness in asthma group.

On comparing the number of casualty visits in 1 year of the asthmatic patient with psychiatric diagnosis to those without psychiatric diagnosis. It was found that the number of casualty visits in 1 year was higher in asthmatics with psychiatric diagnosis than those without psychiatric diagnosis. This was in agreement with the study done by Lavoie et al. [13] which showed that there was a significant difference in the use of emergency room visits in the asthmatics with psychiatric diagnosis than those without psychiatric diagnosis. Brinke et al. [14] also showed there was significant difference in the 2 groups for emergency room visits with higher in those with psychiatric diagnosis. We also observed than number of hospital admission in 1 year was higher in asthmatics with psychiatric diagnosis than those without psychiatric diagnosis. This was in agreement with the study done by Lavoie et al. [13], which showed that there was a significant difference in the rate of hospital admission in 1 year in the asthmatics with psychiatric diagnosis than those without psychiatric diagnosis. Brinke et al. [14] also showed a significant difference in the 2 groups for hospital admissions with higher in those with psychiatric diagnosis.

On comparing the number of canister use/month (of beta 2 agonist & steroid) used by the asthmatic patients, it was found that the use of canister/month was significantly higher in asthmatics with psychiatric diagnosis than those without psychiatric diagnosis. This was in also in accordance with the study done by Lavoie et al. [13] and Brinke et al. [14] who found a significant difference between the groups for the use of maintenance oral corticosteroids.

**CONCLUSION**

Present study observed a higher prevalence of psychiatric co-morbidities in patients of bronchial asthma especially depression and anxiety disorders. Morning symptoms & Wakening at night are the indicators of severity of asthma and these were significantly associated with psychiatric disorders. Psychiatric co-morbidities leads to an increase in the use of health care resources by these patients. So there is an urgent need for accurate diagnosis & management of these comorbidities to improve the quality of life of asthma patients. Also, it will help in proper utilization of limited health care resources in developing country like India.

**TABLES**

**Table 1. Utilization of Health care Resources in study group**

Health care Resources	0	1	>2	Total
Casualty visits in last 1 year	24	14	12	50
Hospital admission in last 1 year	33	13	4	50
Number of Canister/ month	11	24	15	50

**Table 2. Psychiatric diagnosis wise distribution of cases in study group.**

DIAGNOSIS	N	%age
Major depressive disorder	14	28
Panic Disorder with agoraphobia	4	8
Panic Disorder without agoraphobia	5	10
Agoraphobia without PD	2	4
Generalized anxiety dis	1	2
Social anxiety disorder	1	2
Adjustment disorder	1	2
Schizophrenia	1	2
Alcohol dependence	6	12
Nicotine dependence	5	10

**Table 3. Association of socio-demographic variables with psychiatric co-morbidity**

Variables	df	Chi-square value	p-value
Socio-economic status	2	1.71	0.42
Marital Status	1	1.72	0.19
Duration of Asthma	1	1.61	0.24
Marital status	1	6.35	0.012
Morning Symptoms	1	27.28	<0.001
Awakenings at night	1	25.78	<0.01

**Table 4. Association of psychiatric co-morbidity with disease severity**

Variables	Psychiatric co-morbidity	N	t-value	p-value
Casualty visits	No	19	-1.83	0.073
	Yes	31		
Hospital Admission	No	19	-1.38	0.171
	Yes	31		
Canister/ month	No	19	-2.48	0.016
	Yes	31		

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