

# Psychiatric Co-morbidity in Patients of Bronchial Asthma

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## ABSTRACT

**Introduction:** Asthma is a chronic inflammatory disorder of the airways where there is a large impact of stress and strong emotions, on the occurrence of acute exacerbations of asthma. This study was done for assessment of asthma patients for co-morbid psychiatric disorders for better treatment & proper health care utilization.

**Material and Methods:** 50 consecutive patients suffering from Bronchial asthma were assessed with a semi-structured proforma containing details of socio-demographic profile and questions pertaining to the health care utilization & asthma severity. The Diagnostic and Statistical Manual of Mental Disorders –IV Text Revision (DSM IV-TR) was used for diagnosis of psychiatric disorders.

**Results:** Mean age of the sample population was 43.6. As per DSM-IV TR, 31 patients had psychiatric disorders- 14 patients (28%) had Major Depressive Disorder, 13 Patients had anxiety disorder (26%). Awakening at night & morning symptoms were significantly associated with Major Depressive disorder. Number of casualty visits & hospital admissions in 1 year were significantly higher in asthmatics with anxiety disorders.

**Conclusions:** In this study it was found that 62 % asthma patients had psychiatric co-morbidity. Also the severity of asthma symptoms, casualty visits & hospital admissions were more in the patients with psychiatric co-morbidity. So there is need of accurate diagnosis & management of these psychiatric co-morbidities in patients of bronchial asthma for proper utilization of limited health care resources.

**Keywords:** Bronchial Asthma, Psychiatric Co-Morbidity, Major Depressive Disorder, Anxiety, Healthcare Utilization

## INTRODUCTION

Asthma is a chronic inflammatory disorder of the airways characterized by recurrent episodes of wheezing, breathlessness, chest tightness & cough. 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.<sup>1,2</sup> This study was done to determine the prevalence of psychiatric co-morbidity in patients of bronchial asthma. Assessment of asthma patients for co-morbid psychiatric disorders can lead to more appropriate and adequate treatment of both asthma and associated psychiatric condition.

## MATERIAL AND METHODS

50 consecutive patients suffering from Bronchial asthma attending Pulmonary Medicine OPD in a tertiary care hospital and fulfilling following criteria were selected.

### Inclusion criteria

Patients suffering from bronchial asthma as confirmed by pulmonary physician.

Patients with age greater than 18 years.

Patients willing to be questioned for the study.

### Exclusion criteria

- 1) Patient with non asthma respiratory disease.
- 2) Medical or surgical or past psychiatric condition which may interfere with assessment.
- 3) Unwilling or non cooperative patients.

Ethics committee approval was taken. Subjects and their relatives were explained the nature of study & written informed consent was obtained.

They were assessed with a semi structured proforma containing details of socio-demographic profile and questions pertaining to the health care utilization in patients as follows

- 1) Number of casualty visits in 1 year
- 2) Number of hospital admissions in 1 year
- 3) Number of canister used in 1 month.

Also questions regarding occurrence of symptoms indicating asthma severity like morning symptoms & awakening at night were asked.

Modified Kuppaswamy scale was used to measure the socioeconomic status of the subjects.<sup>3,4</sup> The Diagnostic and Statistical Manual of Mental Disorders –IV Text Revision (DSM IV-TR) was used for diagnosis of psychiatric disorders.<sup>5</sup>

## STATISTICAL ANALYSIS

Statistical analyses were carried out using SPSS 15.0 software for windows. Two tailed P value of <0.05 was considered statistically significant.

## RESULTS

Mean age of the sample population was 43.6 years. There were 22 (44%) patients in each age group from 18-40 & 41-60 and 6 patients with age greater than 60 years. There were 26 males & 24 females in the study sample.

There were 70% of patients from lower socio-economic class, 26% from middle class & only 4% from upper class. Out of 50 patients, 32 patients (64%) had less than 10 years of education. In this study 23 patients (46%) had with duration of asthma less than 2 years, 27 patients (54%) with duration more than 2 years. Mean duration of illness was 7.32 years. As per DSM-IV TR, 31 patients had psychiatric co-morbidity

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**How to cite this article:** Khot Pawan Vilas. Psychiatric co-morbidity in patients of bronchial asthma. International Journal of Contemporary Medical Research 2017;4(9):1876-1878.

- 14 patients (28%) had Major Depressive Disorder, 13 Patients had anxiety disorders (26%). [Table1]

In this study group, out of 50 patients 18 (36%) had morning symptoms & 16 (32%) had awakening at night. [Table 2 & 3] Also, 12 (24%) 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.

**DISCUSSION**

In this study, it was found that 31 asthma patients (62%) had at least one of the psychiatric co-morbidities. This was in concordance with Tyagi and Vyas (1989), who reported that 65% of asthmatics suffered from psychiatric morbidity & Nascimento et al (2000) which had 61.6% of patients having psychiatric comorbidity.<sup>6,7</sup>

In this study, 92% patients of Major Depressive Disorder

had ‘morning symptoms’ compared to those without Major Depressive Disorder (14%) [Table 2]. Morning symptoms, being indicator of severe asthma illness, were significantly associated with Major Depressive disorder ( $P<0.05$ ). This was in concordance with the Goldney et al which showed significant association of morning symptoms with Major Depressive Disorder.<sup>8</sup> ( $P<0.001$ )

According to our study, 85% of patients with Major Depressive Disorder had ‘awakening at night’ as compared to those without Major Depressive Disorder (17%) [ Table 3]. Awakening at night was significantly associated with Major Depressive disorder ( $P<0.05$ ) pointing towards greater severity of asthma. Similar results were found in a study done by Goldney et al which underlined the association of awakening at night with Major Depressive Disorder.<sup>8</sup> ( $P<0.001$ )

It was found that the number of casualty visits in 1 year was significantly higher in asthmatics with anxiety disorders than those without anxiety disorders. ( $P< 0.05$ ) [Table 4] This was not in keeping with the study conducted by Feldman et al who studied association of asthma and panic disorder. However, in his study, more number of patient of asthma with panic disorder (40%) made an emergency visits; compared to only 22% for the asthma without panic disorder (though the finding was not statistically significant).<sup>9</sup>

In our study it was found that, the number of ‘Hospital admissions in 1 year’ was significantly higher in asthmatics with anxiety disorders than those without anxiety disorders ( $P<0.05$ ). [Table 4] This was in discordance with study conducted by Feldman et al which showed that there was no significant difference in Hospital admissions in asthma patients with panic disorder and those without panic disorder. However, 15% of the asthma-panic disorder patients were hospitalized for asthma as compared to only 4% of the asthma patients without panic disorder.<sup>9</sup>

It was found that the use of canister/month was not significantly higher in asthmatics with anxiety disorders than those without anxiety disorders. ( $P> 0.05$ ) [Table 4] This was in discordance in studies conducted by Feldman et al which showed that significant association between use of short-acting beta 2-agonists ( $P< 0.05$ ) in patients of asthma with

Diagnosis	Number of patients	Percentage
Major depressive disorder	14	28
Panic Disorder with agoraphobia	4	8
Panic Disorder without agoraphobia	5	10
Agoraphobia without PD	2	4
Generalized anxiety disorder	1	2
Social anxiety disorder	1	2
Adjustment disorder	1	2
Schizophrenia	1	2
Alcohol dependence	6	12
Nicotine Abuse	5	10

**Table-1:** Psychiatric diagnosis wise distribution of cases in study group

		Major Depressive Disorder		Total
		Absent	Present	
Morning symptoms	Yes	5(10%)	13(26%)	18(36%)
	No	31(62%)	1(2%)	32(64%)
Total		36(72%)	14(28%)	50

**Table-2:** Comparison of morning symptoms with Major Depressive Disorder : (P value<0.05)

			Major Depressive Disorder		Total
			Absent	Present	
Awakening at Night	Yes	Count	4(8%)	12(24%)	16(32%)
	No	Count	32(64%)	2(4%)	34(68%)
Total		Count	36(72%)	14(28%)	50

**Table-3:** Comparison of awakening at night with Major Depressive Disorder: (P value<0.05)

	Anxiety disorder	N	T Value	P Value
Casualty visits	Absent	37	-2.52	0.024
	Present	13		
Hospital dmission	Absent	37	-3.12	0.046
	Present	13		
Canister/month	Absent	37	-1.48	0.088
	Present	13		

**Table-4:** Comparison of Casualty visits, Hospital admission and canister use/month with anxiety disorders

panic disorder compared to those patients of asthma without panic disorder.<sup>9</sup> These discrepancies can be attributed to the restricted spectrum of anxiety disorders (only panic disorder) which was studied in association with asthma.

#### Limitations of study

1. Small sample size.
2. Cross sectional study.

#### CONCLUSION

62% asthma patients had at-least 1 psychiatric co-morbidity. 'Morning symptoms' & 'awakening at night' which are the indicators of severity of asthma; were significantly associated with major depressive disorder. The number of casualty visits & hospital admission were more in those with anxiety disorders. This leads to increase in the use of health care resources by these patients. So there is need of accurate diagnosis & management of these psychiatric co-morbidities which can lead to improvement in the Quality of life of these patients. Also, it will help in proper utilization of limited health care resources.

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 15-08-2017; **Accepted:** 17-09-2017; **Published:** 28-09-2017