

Frequency of Anxiety and Depression among patients of Bronchial Asthma

ABDUL SHAKOOR, SAEED AKHTAR, MOHAMMAD IMRAN

ABSTRACT

Aim: To determine the frequency of anxiety and depression among patients of bronchial asthma.

Methods: This was a cross-sectional, observational study conducted at Department of Pulmonology, Bahawal Victoria Hospital, Bahawalpur from 20th February 2015 to 19th May 2015. Total 98 diagnosed cases of bronchial asthma were recruited in this study. Hospital Anxiety and Depression Scale (HADS) was used to assess anxiety and depression.

Results: Mean age of the patients was 46.7±8.3 years. Anxiety and depression was present in 74(75.5%) and 62(63.3%) patients respectively. Prevalence of anxiety and depression between male asthmatics and female asthmatics was statistically insignificant (P=0.4159, 0.6292). Association of anxiety and depression with area of residence was also statistically significant (P= 0.001, 0.001). Significant (P 0.001, 0.001) association of education status with anxiety and depression was found.

Conclusion: Higher rates of anxiety and depression among asthmatics were found in this study. The results of this study also revealed that male or female asthmatics can equally be a victim of anxiety and depression. Rural residents and un-educated asthmatics had higher rate of anxiety and depression as compare to urban residents and educated asthmatics.

Keywords: Asthma, anxiety, depression, Psychiatric disorders, significant, chronic

INTRODUCTION

Bronchial Asthma (BA) is a chronic inflammatory condition which is considered as a major cause of morbidity and mortality¹. The prevalence of BA has been increased in recent decades; it affects almost 300 million people globally which brings about high socio-economic costs and an increase in rate of morbidity and mortality². BA is characterized by un-expected and sudden attacks of shortness of breath, thus asthmatic attacks are a real threat for life in these patients³. It makes sense that BA significantly affects psychological health of the patients because of its serious impact on activities, sleep and social life of patients⁴.

BA presents profound links between social, psychological and physiological factors⁵. More recent hypotheses regarding the link between asthma and psychological factors are describing asthma as a classic psychosomatic disorder caused by specific psychological conflicts⁶.

About two-thirds of patients with asthma are anxious during the acute attack. Symptoms of anxiety in asthma patients have been revealed as very strong predictors of respiratory illness in these patients⁷.

Some negative emotions (anger, panic, fear and depression) are involved in a fluctuating process of bronchoconstriction of the airways, leading to worse

crises of asthma⁸. Although, these emotions are not severe enough to be classified as psychiatric disorders, but can lead to initiation or worsening of asthma².

Conversely, these emotions can also be worsened by asthma itself. Depression is also associated with autonomic dysregulation leading to a cholinergic or vagal bias which increases airway instability in asthma⁹. Stress exposure increases the risk of developing asthma.

A study is planned to screen out the asthmatic patients for anxiety and depression. Results of this study may help us to decrease this co-morbidity of asthmatics by early management of anxiety and depression.

MATERIAL AND METHODS

This was a cross-sectional, observational study conducted at Department of Pulmonology, Bahawal Victoria Hospital, Bahawalpur from 20th February 2015 to 19th May 2015. Total 98 diagnosed cases of bronchial asthma either male or female having age range from 20-60 years were included in this study. Patients with history of diabetes mellitus and hypertension were excluded from the study.

Ethical approval was obtained from the institutional review committee and written informed consent was taken from every patient. Hospital Anxiety and Depression Scale (HADS) was used to assess anxiety and depression. Scores 8-15 were considered as mild anxiety or depression, 16-20 as

Department of Psychiatry Behavior Sciences, Quaid-e-Azam Medical College Bahawalpur
Correspondence to Dr. Abdul Shakoor, Associate Professor Email: shakoordr16@gmail.com

moderate anxiety or depression and scores higher than 17 as severe. Patients with primary education were considered as illiterate and above middle education were considered as literate. All the collected data was entered into SPSS version 17 and analyzed. Mean and SD was calculated for numerical variables and frequencies and percentages were calculated for categorical variables. Chi-square test was used as test of association. P value ≤ 0.05 was considered as statistically significant.

RESULTS

Total 98 asthmatic patients were recruited for this study. Mean age of the patients was 46.7 ± 8.3 years. Anxiety and depression was present in 74(75.5%) and 62(63.3%) patients respectively (Table 1). Out of 74 patients with anxiety, mild anxiety was present in 95% patients and moderate anxiety was present only 5% patients and severe anxiety was not found in any patient (Fig. 1). Out of 62 with depression, mild depression was found in 97% patients and moderate depression was found in 3% patients and severe depression was not found in any patient (Fig. 2).

Stratification of patients in relation to gender was done. Out of 74(75.5%) male patients, anxiety and depression was found in 54(72.97%) and 48(64.86%) patients respectively. Out of 24(24.5%) female patients, anxiety was present in 20(83.33%) patients and depression was present in 14 (58.33%) patients. Prevalence of anxiety and depression between male asthmatics and female asthmatics was statistically insignificant (P = 0.4159, 0.6292) (Table 2).

Total 64(65.3%) patients belonged to rural area, anxiety and depression was present in 56 (87.5%) and 52 (81.25%) patients. Total 34 (34.7%) patients belonged to urban area, anxiety and depression was present in 18 (52.94%) and 10(29.41%) patients. Association of anxiety and depression with area of residence was statistically significant (P= 0.001, 0.001) (Table 3).

Out of 98 asthmatics, 44(44.95%) patients were educated and 54(55.1%) patients were un-educated. In educated patients, anxiety and depression was present in 26(59.09%) and 20(45.45%) patients respectively. In un-educated patients, 48(88.89%) and 42(77.78%) patients were found with anxiety and depression. Significant (P = 0.001, 0.001) association of educational status with anxiety and depression was found (Table 4).

Table 1: Frequencies for anxiety and depression in asthmatics (n=98).

| Status | Anxiety | Depression |
|--------|------------|------------|
| Yes | 74(75.5%) | 62 (63.3%) |
| No | 24 (24.5%) | 36 (36.7%) |

Fig. 1: Severity of anxiety

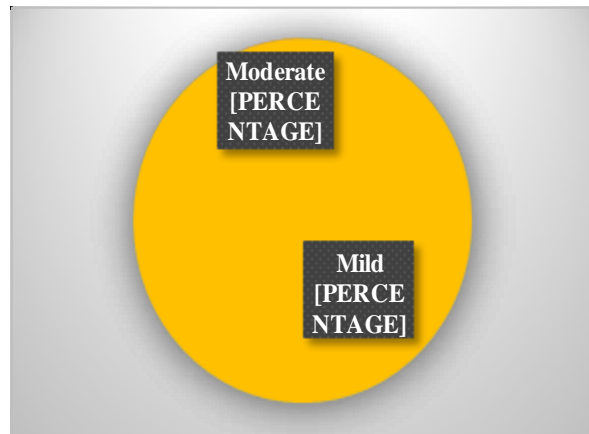


Fig. 2: Severity of Depression



Table 2: Association of gender with depression and anxiety

| Gender | Yes | No | Total |
|---|------------|------------|-----------|
| Association of gender with anxiety (P. value = 0.4159) | | | |
| Male | 54(72.97%) | 20(27.03%) | 74(75.5%) |
| Female | 20(83.33%) | 4(16.67%) | 24(24.5%) |
| Total | 74(75.5%) | 24(24.5%) | 98 |
| Association of gender with depression (P. value= 0.6292) | | | |
| Male | 48(64.86%) | 26(35.14%) | 74(75.5%) |
| Female | 14(58.33%) | 10(41.67%) | 24(24.5%) |
| Total | 62(63.27%) | 36(36.73%) | 98 |

Table 3: Association of anxiety and depression with area of residence

| Area | Yes | No | Total |
|--|------------|------------|-----------|
| Association of area of residence with anxiety (P. value = 0.001) | | | |
| Rural | 56(87.5%) | 8(12.5%) | 64(65.3%) |
| Urban | 18(52.94%) | 16(47.06%) | 34(34.7%) |
| Total | 74(75.5%) | 24(24.5%) | 98 |
| Association of area of residence with depression (P. value = 0.001) | | | |
| Rural | 52(81.25%) | 12(18.75%) | 64(65.3%) |
| Urban | 10(29.41%) | 24(79.59%) | 34(34.7%) |
| Total | 62(63.3%) | 36(36.7%) | 98 |

Table 4: Association of anxiety and depression with educational status

| Education Status | Yes | No | Total |
|---|------------|------------|-----------|
| Association of education status with anxiety (P. value = 0.001) | | | |
| Educated | 26(59.09%) | 18(40.9%) | 44(44.9%) |
| Un-educated | 48(88.89%) | 6(11.11%) | 54(55.1%) |
| Total | 74 | 24 | 98 |
| Association of education status with depression (P. value = 0.001) | | | |
| Educated | 20(45.45%) | 24(54.54%) | 44(44.9%) |
| Un-educated | 42(77.78%) | 12(22.22%) | 54(55.1%) |
| Total | 62(63.3%) | 36(36.7%) | 98 |

DISCUSSION

Psychological factors may influence the symptoms and management of asthma and numerous pathways may contribute to the links between asthma and psychiatric disorders such as anxiety and depression¹⁰.

The association of anxiety and depression with asthma has been confirmed in numerous studies¹¹. Psychiatric disorders were significantly more frequent in asthmatics than in non-asthmatic population and the ratio of various psychiatric disorders, particularly anxiety and depression, varies ranging from 9% to 65%¹².

In our study mean age of the asthmatic patients was 46.7±8.3 years. Similar mean age (43.8±16.6 years) of asthmatic patients was reported by Tafti et al in their study¹³. In another study Tafti et al¹⁴ reported mean age of asthmatic as 48±17 years which is also comparable with mean age of our study. Anxiety and depression symptoms are relatively common among asthma patients and emotions such as anxiety, anger, happiness, excitement, satisfaction and neutral emotions can influence respiratory parameters^{15,16}.

In our study anxiety and depression was present in 75.5% and 63.3% asthmatics. Tafti et al reported depression in 65.4% patients which is in agreement with our study¹³. Instead of HAD they used GHQ-28(28-item general health questionnaire) to measure the depressive symptoms. Similar (66.7%) prevalence of depression in asthmatics was reported by Asnaashari et al¹⁷.

Labor et al reported frequency of anxiety and depression as 44.5%, 24.5% which is lower than that of our findings¹¹. Another study by Aspinosa Leal FB et al¹⁸ concluded in contrast with our findings where HAD scale results showed that 30% of asthmatics presented with anxiety and 8% presented with depression.

There are some controversies regarding the prevalence of anxiety and depression in BA. Wang

et al¹⁹ reported that 70% of asthmatics have some degrees of anxiety and depression. Some other studies reported anxiety and depression six times more prevalent in asthmatic patients as compared to general population.²⁰ In a Canadian survey with psychiatric interview, anxiety was more prevalent in asthmatic patients than depression²¹. High rates of anxiety and depression in our study may be due to lack of routine psychological counseling in pulmonary wards of hospitals. Gender of asthmatics is another potential risk factor affecting patients' prognosis but different studies reported inconsistent results.

In our study, anxiety and depression were equally prevalent in male and female asthmatics (P = 0.4159, 0.6292). Similarly in study by Wilson et al, asthmatic males and asthmatic females had similar prevalence of anxiety and depression²². Conversely, in a study by Tafti et al¹³ significantly (P = 0.005) more female asthmatics had depressive symptoms as compared to male asthmatic (70.2% versus 54.9%) and Nowobilski et al reported that asthmatic females experience higher degrees of somatic symptoms and anxiety than asthmatic males²³.

In this study un-educated asthmatics had significantly (P = 0.001) higher proportion of anxiety and depression as compared to educated (59.09% vs 88.89%, 45.45% vs 77.78%), which is in line with Tafti et al who found significantly (P = 0.009) higher rate of depression among illiterate asthmatics as compared to literate asthmatics (77.4% versus 59.3%)¹³.

CONCLUSION

Higher rates of anxiety and depression among asthmatics were found in this study. The results of this study also revealed that male or female asthmatics can equally be a victim of anxiety and depression. Rural residents and un-educated asthmatics had higher rate of anxiety and depression as compared to urban residents and educated asthmatics.

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