



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1318668>Available online at: <http://www.iajps.com>**Research Article****ABPA AND BRONCHIAL ASTHMA; 100 CASES**Rabia Tanveer, Muhammad Umair Rafeeq, Muhammad Umair Khan
Mayo Hospital Lahore**ABSTRACT:**

Objective; The determine the frequency of Allergic Broncho Pulmonary Aspergillosis in cases of bronchial asthma.

Methodology: This was a cross sectional study carried out at Department of Medicine, Services Hospital, Lahore during 01-07-2017 to 31-12-2017. In this study, the cases of both genders and age range of 18 to 60 years having known history of bronchial asthma were included. The diagnosis of bronchial asthma was made by clinical history and on Pulmonary function tests with FEV1/FVC ratio of less than 0.7 and post broncho dilatation the change in FEV1 of > 12%. ABPA was labelled as yes where there was serum IgE level more than 1000 IU/ml and central bronchiectasis of HRCT chest.

Results: In this study, the 100 cases of bronchial asthma were included. The mean age was 31.24±8.78 years (table 1) and out of these 100 cases, 67 (67%) were males and 33 (33%) were females. ABPA was observed in 18 (18%) of the cases. ABPA was seen in 16 (24.24%) cases with severe disease as compared to 02 (5.88%) cases with moderate degree of disease with of significant p value of 0.001 (table 2). There was also near significant difference where ABPA was seen in 12 (20%) of the cases with duration more than 3 years with p= 0.09.

Conclusion; ABPA is an under rated complication of bronchial asthma and it is significantly high in cases having severe degree of disease.

Key Words: Bronchial asthma, ABPA.

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Please cite this article in press Rabia Tanveer et al., **ABPA and Bronchial Asthma; 100 Cases.**, Indo Am. J. P. Sci, 2018; 05(07).

INTRODUCTION:

Bronchial asthma is one of the highest burden disease among the chronic respiratory disorders and is frequently presented in the pulmonology and medical departments, emergencies and clinics. It's a life threatening disease which is purely controllable and in some cases curable disease. It is seen in 10% of the paediatric and 5% of the cases in adult population globally [1,2].

There are wide range of risk factors that not only lead to its development, but also lead to development of its complications. The diagnosis is made on clinical symptoms and then confirmed by pulmonary function tests (PFTs). Cough, shortness of breath, chest tightness and associated wheeze are the salient signs and symptoms. Allergic rhinitis is highly associated with bronchial asthma [3]. GINA guidelines are published every year to guide management plan in such cases [4].

Bronchial asthma can result in various complications, which can be fatal and if not, may lead to highly morbid conditions. Some of these include respiratory failure, bronchiectasis, recurrent infections, lung collapse, haemoptysis, pneumothorax, etc. The ongoing inflammation in the airways serves as nidus for growth of fungal infection i.e. *Aspergillus Fumigatus* and body's enhanced inflammatory response can further damage the airways leading to bronchiectasis. This is called as Allergic Broncho pulmonary Aspergillosis (ABPA). Its prevalence is highly variable across the globe and its found around 2 to 33% of the cases. Acute exacerbations usually respond to the steroids and antifungal drugs may need to be added in few cases [5,6].

OBJECTIVE OF THE STUDY

The determine the frequency of Allergic Broncho Pulmonary Aspergillosis in cases of bronchial asthma.

MATERIAL AND METHODS:**STUDY DESIGN**

Cross Sectional study

SETTING

Department of Medicine, Services Hospital, Lahore

DURATION OF STUDY

01-07-2017 to 31-12-2017

SAMPLING TECHNIQUE

Non probability consecutive sampling

MATERIAL AND METHODS:

In this study, the cases of both genders and age range of 18 to 60 years having known history of bronchial asthma were included. The diagnosis of bronchial asthma was made by clinical history and on Pulmonary function tests with FEV1/FVC ratio of less than 0.7 and post broncho dilatation the change in FEV1 of > 12%. ABPA was labelled as yes where there was serum IgE level more than 1000 IU/ml and central bronchiectasis of HRCT chest.

Statistical analysis;

The data was entered and analysed by using SPSS version 23. Post stratification chi square test was applied taking p value less than 0.05 as significant.

RESULTS:

In this study, the 100 cases of bronchial asthma were included. The mean age was 31.24±8.78 years (table 1) and out of these 100 cases, 67 (67%) were males and 33 (33%) were females. ABPA was observed in 18 (18%) of the cases. ABPA was seen in 16 (24.24%) cases with severe disease as compared to 02 (5.88%) cases with moderate degree of disease with of significant p value of 0.001 (table 2). There was also near significant difference where ABPA was seen in 12 (20%) of the cases with duration more than 3 years with p= 0.09 as shown in Table 3.

Table No. 01. Study variables

Variables	Mean	Range
Age	31.24±8.78	18-60 years
Duration of Asthma	11.34±3.78	2-15 years

Table No. 02. ABPA with respect to severity of asthma

Severity of asthma	ABPA		Total	p value
	Yes	No		
Moderate	02 (5.88%)	32 (94.12%)	34 (100%)	0.001
Severe	16 (24.24%)	50 (75.76%)	66 (100%)	
Total	18 (18%)	82 (82%)	100 (100%)	

Table No 03. ABPA with respect to duration of asthma

Duration of asthma	ABPA		Total	p value
	Yes	No		
<3 years	3 (12%)	22 (88%)	25 (100%)	0.09
3 years or more	15 (20%)	60 (80%)	75 (100%)	
Total	18 (18%)	82 (82%)	100 (100%)	

DISCUSSION:

Bronchial asthma is a well controllable disease and can predispose to wide range of complications if untreated or partially treated. Chronic inflammation of the airways presents as a nidus for the development of the super added infections i.e. both bacterial as well as fungal. Fungi are ubiquitous are found everywhere, and hence their infection can be uncontrolled in such cases where the favourable atmosphere is present for their growth.

In the present study, the ABPA was seen in 18 (18%) of the cases suffering from bronchial asthma. This result was close to the findings of the previous studies. Nath A et, carried out a similar study and it was seen that ABPA was observed in 21.7% of the cases in their study. They, not only checked for frequency of ABPA, but they further evaluation the exaggerated response of the body to *Aspergillus fumigatus* without the signs of bronchiectasis and this high levels of IgE which were used as a cut off value for ABPA in this study and it was seen that 35.1% of the cases showed this allergic response, showing some intrinsic capabilities of the individual to develop ABPA [7]. The other studies have also shown that the incidence of ABPA is also high in cases suffering from cystic fibrosis; which is another bronchiectatic condition; more prevalent in UK and it was observed in 2 to 15% of the cases.⁸ In a meta analysis a number of studies were evaluated and it was seen that ABPA was seen 5-22% of cases having underlying bronchial asthma and hyper responsiveness was seen in 15-48% of such cases [9].

ABPA was seen in 16 (24.24%) cases with severe disease as compared to 02 (5.88%) cases with moderate degree of disease with of significant p value of 0.001. This finding was in line with the results of the previous studies where they found that there was linear association of severity of asthma and the chances to develop ABPA [10,11]. This can be explained by the factor that in high severity condition, asthma is rather poor controlled and predispose to the development of fungal infestation. Prasad et al, revealed that the cases that had poor control of asthma of severity more than moderate to severe degree, there was more number of cases with hyper responsiveness to *Aspergillus* and it was seen 30.3% of the cases and ABPA in 7.4% [12].

CONCLUSION:

ABPA is an under rated complication of bronchial asthma and it is significantly high in cases having severe degree of disease.

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