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PHARMAHEALTHSCIENCES

International Journal of Pharma Research and Health Sciences

Available online at www.pharmahealthsciences.net

Original Article

Assessment of Prevalence, Risk Factors and Drug Use in Bronchial Asthma Patients in a Teaching Hospital

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A R T I C L E I N F O	A B S T R A C T

Background: Bronchial asthma is a chronic illness which creates a substantial burden on individuals and families. It is important to understand early risk factors to decrease asthma incidence. It usually requires a patient specific therapy to obtain maximum benefit to the patient. **Objectives:** The objectives were to evaluate prevalence of bronchial asthma, analyse the risk factors for bronchial asthma and the prescription pattern for treatment of bronchial asthma. **Materials and Methods:** This was a prospective observational study conducted at General Medicine department of Basaveshwara Medical College Hospital & research centre, Chitradurga for a period of six months. The study was approved by Institutional Ethical Committee of SJM College of Pharmacy Chitradurga. The data collected from medical records of in-patients and interviews with patient and/or care givers. The data was analyzed descriptively. **Result:** The study identified that males are more prone to develop asthma. The prevalence rate of asthma found to be 4.59%. Dust found to be more predominant among risk factors in asthmatic patients. In monotherapy, most commonly prescribed drug was budesonide, followed by salbutamol. theophylline with etiophylline was given to majority of patients as 2 drug regimen and 54 patients were prescribed with salbutamol with ipratropium bromide and theophylline with etiophylline which is a 4 drug regimen. **Conclusion:** Bronchial asthma is a chronic state which obliges a continues medical care. The proper awareness of the patients regarding triggering as well as risk factors can reduce the incidence of asthma.

Key words: Bronchial asthma, risk factors, bronchodilator, budesonide.

1. INTRODUCTION

Bronchial asthma is a chronic seditious disorder of the airways affecting both children and adults [1, 2]. This inflammation causes persistent episodes of wheezing, coughing, chest tightness and breathlessness, particularly at night or in the morning and also cause, bronchial hyper-responsiveness (BHR) to a variety of stimuli [3, 4]. These symptoms are usually allied with airflow obstruction that is frequently reversible but the

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reversibility may be incomplete in some asthmatic patients [1].

Current studies suggest that 1.2 to 6.3% of adults in most countries are suffering from asthma[5]. India has 15-20 million asthmatics[3.] Asthma incidence can be embarrassed by reducing or preventing exposure to triggering factors and harmful circumstances[5]. Family history is neither sufficient nor necessary for the development of asthma[2]. It is imperative to identify the signs and symptoms of asthma to begin the treatment and other interventions early[5].The risk factors of asthma are environmental, hereditary and host factors[6]. There is no permanent cure for asthma but can be effectively inhibited with drugs[7]. Asthma is a chronic condition; it usually requires continuous medical care[4]. So it is obligatory to be aware of the risk factors and therapy to obtain maximum benefit to the patient.

2. MATERIALS AND METHODS

This was a prospective observational study conducted at General Medicine department of Basaveshwara Medical College Hospital & research centre, Chitradurga for the period of six months. The study was approved by Institutional Ethical Committee of SJM College of Pharmacy, Chitradurga (SJMCP/ IEC/ 543P/ 2014-15). Patient aged 18 years of both the genders were included and those presenting with mental disorders and pregnant and lactating women were excluded. The data collected from medical records of in-patients and interviews with patient and/or care givers. The full details of the cases including patient name, sex, age, diagnosis, risk factors and drug therapy brought into the self designed patient data collection form. All the enrolled patients were monitored from the date of admission until discharge for any changes in the drug therapy and diagnosis. The data were entered into Microsoft excel 2007 version and analysed by descriptive statistics.

3. RESULTS AND DISCUSSION

A total of 100 patients were recruited under the inclusion criteria. The prevalence of bronchial asthma in our study was found to be 4. 59%. The study also found that age group of 55 years and above have more prevalence of asthma. Out of recruited subjects, 59% were males and 41% were females. Among the total patients majority were with history of asthma 51%. House wives are more prone to asthma and the results are depicted in Table no.1 which shows the distribution of patients based on occupation.

Table No. 1: Distribution of patients according to Occupation (n=100)

Occupation	Number of patients	Percent
House wife	38	38
Agriculture	30	30
Business	2	2.0
Collie	15	15.0
Student	3	3.0
Textile	12	12.0

In a total of 100 patients, most of them 76% had no family history and 24% of patients were with family history. Dust is the most prominent allergen for asthmatic patients, followed by cold along with dust. Other risk factors include milk, pollen grains, oil and family history etc, the results are analysed in table no. 2. Among the sample population majorities of them were not having any social history (90%).

Table 2: Distribution of patients according to Allergens (n=100)

Allergens	Number of patients	Percent
Cold	5	5.0
Dust	29	29.0
Dust and cold	27	27.0
Milk	5	5.0
Pollen grains	4	4.0
Oil	5	5.0
Other	3	3.0
NKA	22	22.0

42 % of patients were treated with single drug, 19 % with 2-drug regimen, and 54% with 4-drug regimen. It was observed that in monotherapy most commonly

prescribed drug was budesonide followed by salbutamol. The least prescribed single drug was prednisolone. The results are shown in table no.3.

Table 3: Distribution of patients based on single drug therapy

Single drug	Number of patients	Percent
Bronchodilators (Salbutamol)	28	28.0
Anticholinergics(Ipratropium bromide)	16	16.0
Corticosteroids (Budesonide)	42	42.0
Corticosteroids (Hydrocortisone)	7	7.0
Corticosteroids (Prednisolone)	2	2.0
Leukotriene antagonist (Montelukast)	10	10.0

Theophylline with Etiophylline was given to majority of patients followed by salbutamol and Ipratropium bromide as a combination. Salbutamol with Theophylline anhydrous was found to be the least prescribed combination (table no. 4). 54% of patient's prescription contain combination of 4 drugs namely Salbutamol with Ipratropium bromide and Theophylline with Etiophylline.

Table 4: Distribution of patients based on 2 drugs therapy

Drugs	Number of patients	Percent
Corticosteroids		
Budesonide , Hydrocortisone	9	9
Budesonide, Dexamethasone	2	2.0
Combination		
Salbutamol with Ipratropium bromide	15	15.0
Salbutamol with Theophylline anhydrous	1	1.0
Theophylline with Etiophylline	19	19.0

Asthma is a chronic inflammatory condition of the airways that causes hyper-responsiveness to various stimuli[8]. It is characterized by wheeze, cough, shortness of breath, and chest tightness[9]. The prevalence of bronchial asthma in our study was found to be 4.59%. It is the most common chronic disease among children and young adults and approximately 12% and 9% of children and adults, respectively have bronchial asthma [3, 10].

Risk factors can be modified to decrease incidence of asthma[3]. So it is necessary to understand the risk factors, to decrease or avoid exposure to harmful conditions that can trigger asthma. Allergens like dust, pollen grains, milk and oil have an important role in asthma. Among this dust found to more predominant risk factor in asthmatic patients. Other factors include age, sex, medical history, occupation, family history, social history and climate variations.

The collected information suggests that corticosteroids and bronchodilators are primary drug of choice in asthmatic patients. Analysis of prescription also revealed that multiple drug therapy was adopted for significant number of patients as compared to single drug therapy. Irrational use and inappropriate prescribing are the most common problem for providing effective therapy[10].

Kabila B *et al.,* conducted a prospective observational study on Risk Factor Assessment Study for Bronchial Asthma among the Rural People. This study showed that more predominant risk factor is dust[11]. Even the present study concludes that dust is the prominent factor for asthmatic patients.

Languluri Reddenna *et al.,* conducted a prospective observational study on Assessment of Prevalence, Risk Factors and Treatment in Asthmatic Patients in a South Indian Hospital. The study found that most of the patients are using multiple drug therapy. Out of the combinations Beta-agonists with Methylxanthenes was given to majority of patients[3]. In our study we also conclude that most of the patients were treated with combination therapy. In monotherapy most commonly prescribed drug was budesonide and the least prescribed single drug was prednisolone. Theophylline with Etiophylline was given to majority of patients as 2 drug regimen and 54% patients were prescribed with Salbutamol with Ipratropium bromide and Theophylline with Etiophylline which is a 4 drug regimen.

4. CONCLUSION

Asthma creates a substantial burden on individuals and families as it is more frequently under-diagnosed and under-treated. India has an estimate of 15-20 million

asthmatics. The study identified that 59% of males and 41% females were diagnosed with asthma and which concluded that males are more prone to bronchial asthma. The prevalence rate of asthma found to be 4.59%.

Most important parameter in the prevention and effective management of asthma is to avoid the exposure to allergens and harmful environment which trigger the asthma attack. It can be achieved by providing proper awareness to the patients regarding triggering as well as risk factors which also helps to reduce frequency of hospital visit and economical burden.

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