INTERNATIONAL RESEARCH JOURNAL OF PHARMACY
www.irjponline.com
ISSN 2230 – 8407

Research Article

ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICE TOWARDS ASTHMA AND THE IMPACT OF PATIENT COUNSELLING ON INHALATION TECHNIQUES IN ASTHMATICS

Padmavathy R [1]*, Geethu N[2], Sajila Sylus S V [2], Zacharia Thomas [3]
[1]Consultant Interventional, Pulmonologist and Intensivist, S.K. Hospital, Trivandrum, Kerala, India
[2]Pharm D intern, The Dale View College of Pharmacy and Research Centre, India
[2] Sajila Sylus S V, Pharm D intern, The Dale View College of Pharmacy and Research Centre, India
[3]Assistant professor, Department of pharmacy practice, The Dale View College of Pharmacy and Research Centre, India
*Corresponding Author Email: dr.padmavathyr@gmail.com

Article Received on: 19/03/19 Approved for publication: 07/05/19

DOI: 10.7897/2230-8407.1006202

ABSTRACT

Purpose: Asthma is a chronic disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. There is a lack of patient awareness with respect to complete knowledge about the disease, attitude towards disease management, medication adherence behavior and treatment outcomes. Various advances have been made in the management of asthma but despite this, the morbidity and mortality rates are not declining. Material and methods: A prospective interventional study was conducted among 50 clinical and spirometry confirmed cases of asthma in Respiratory Medicine department of a Tertiary care hospital in Thiruvananthapuram, Kerala, India. Result: A total of 50 patients were included in the study. The mean age of the patients in the study was 58.66 years (±15.73), with a slight female preponderance (54%). An average score of knowledge assessment was 3.55±1.39 and attitude assessment was 4.57±0.85. 89 % of the study population was already on inhalers but had improper inhalation technique. A post counselling value of 9.74±2.8 showed a positive impact of patient counseling on correct inhalation technique. Conclusion: Despite wide prevalence, there is ignorance and misconception regarding asthma. Sincere efforts are required to provide health education to the patients so as to help them in understanding the disease and its management and thus reduce the disease burden.

Keywords: Bronchial Asthma, Asthma Knowledge, Attitude, Practices, Patient counselling, Compliance, Inhalation therapy

INTRODUCTION

Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. The chronic inflammation is associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing particularly at night or in the early morning.[1] According to WHO estimates, 235 million people suffer from asthma. In recent decades, there have been striking advances in the clinical treatment of asthma. Despite this, the prevalence and morbidity of asthma is increasing in many countries .[2] There seems to be a discrepancy between scientific evidence and clinical burden of asthma in the society. This could perhaps be related to patient behaviour towards their disease and its management and the Physician's success in conveying treatment aspects.[3]

Asthma is a public health problem for not only high-income nations, but affects all countries globally, regardless of the level of development. Over 80% of asthma deaths occur in low and lower-middle income countries.[4] Patient education is becoming an essential area of service provision, with our increasing population of people with chronic disease and conditions requiring long-term management in the community.[5] Many studies have been conducted worldwide to assess the knowledge and beliefs of asthmatic patients about the cause, precipitating factors, pathophysiology and management of asthma[6] . The information obtained can be used as a guide for the implementation of asthma education. But there is a lack of data regarding such issues in India especially in Kerala.[7]

Inhalation remains the principal route for drug administration and it has greater advantages over systemic treatment.[1] In routine use however, a vast majority of patients make inhalation errors.[8] Suboptimal inhaler technique worsens health outcome, with poor disease control and increases the risk of hospitalization. In the financial context, studies estimate that most of the resources spent on inhalers are getting wasted. Studies also suggest that it's important to provide training to patients on inhaler techniques because only 25% of the population were able to demonstrate the correct technique without proper training.[9]

The objective of this study is to evaluate knowledge of asthmatic patients about etiology, precipitating factors, pathogenesis and management of asthma; and to assess the impact of patient counselling on the use , attitude and behavior towards inhalation techniques.

MATERIALS AND METHODS

A prospective, interventional, questionnaire-based study was conducted at the Respiratory Medicine Department, of a tertiary care hospital in Thiruvananthapuram, India. The study was conducted over a period of two months (September-November 2018) and a total of 50 outpatients were enrolled after signing the Informed Consent Form approved by the Institutional Ethical Committee. Confirmed asthmatic patients over the age of 18

years were included in the study. Exclusion criteria included patients with other significant bronchopulmonary diseases associated with asthma eg: tuberculosis, chronic obstructive pulmonary disease, bronchiectasis, and lung cancer and patients not willing to participate in the study. All participants were enrolled after obtaining their informed consent. Face-to-face interview of participants was conducted using the assessment questionnaire for knowledge, attitude and medication adherence. A well validated, freely available questionnaire was modified to suit the study purpose and was administered to all patients. No attempt was made to correct a wrong answer or response until the completion of the interview.

Subjects' prior knowledge on the use of inhalers was assessed using a checklist on inhalation technique. After the interview, a detailed, specifically designed 'show and tell' inhaler technique counselling was done to optimize the subjects' inhaler technique. This was followed by cross checking the subjects' compliance to the explained steps.

Statistical analysis: Descriptive statistics were calculated. Mean, standard deviation, frequencies and percentages were calculated for qualitative variables as mentioned above. Students t-test was used for comparison-value of 0.05 or less was deemed statistically significant. SPSS for Windows version 20 (SPSS, Inc., Chicago, IL, USA) was employed for all statistical analyses.

Table 1: Demographics of study participants

Variables	Mean±SD	
	Number	**Percentage**
Age in years	58.66±15.73	
18-30	5	10%
31-50	12	24%
Above 50	33	66%
Gender		
Male	23	46%
Female	27	54%
Educational status		
Illiterate	1	2%
Primary school	3	6%
Lower secondary	5	10%
Higher secondary	17	34%
Post-secondary	7	14%
Graduate and above	17	34%
Family history		
Present	28	56%
Absent	22	44%
Smoking history		
Smoker	5	10%
Ex-smoker	13	26%
Passive smoker	6	12%
Non-smoker	26	52%
Area of residence		
Urban	41	82%
Rural	9	18%

Table 2: Total score of inhaler techniques checklist

Score	Pre-counselling	Post counselling	*P*-value
Mean±SD	4.96±3.83	9.74±2.82	0.001*

*statistically significant (p-value < 0.005)

RESULT

Demographics characteristics: A total of 50 patients were included in the study. Demographic characteristics were shown in table 1. The mean age of the patients in the study was 58.66 years (±15.73), with a slight female preponderance (54%). (Table 1)

Assessment of knowledge: The knowledge component of the questionnaire contained 5 items. The average score was 3.55±1.39 and 28% of patients obtained full score. In our study of 50 patients, even though nearly two-thirds (68%) of patients were aware that they were suffering from asthma, surprisingly quite a few subjects (33%) were unaware of their disease. A majority (78%) of patients were good perceivers and accurately reported their symptoms of asthma as a cough, dyspnea, chest congestion or wheeze. The rest were unable to explain their symptoms. More than 70% of the patients were aware that the lungs and airways were affected in asthma. 54% of the patients were knowledgeable about the use of rescue medications. 26% of subjects were ignorant of the fact that there are certain allergens or triggers that precipitate or worsen asthma. Of the 64% of subjects who were well informed of the triggers of asthma, the main reported precipitating factors mentioned by them were: hot or cold weather, exposure to allergens such as dust, smoke, pollen grains, pets etc. and respiratory infections. Barely few subjects identified that strong emotional changes also as factors.

Assessment of attitude and practice: The Attitude Section of the questionnaire contained 6 items. The average score was 4.57±0.85 and majority (58%) scored ≥5. Regarding the prognosis of asthma, nearly all (36%) believed that asthma is fatal in outcome. 64% participants believed that their disease is absolutely curable. Only 10% of the patients nurture a false belief that asthma is not controllable. A small number (10%) of patients were under the misconception that asthma is contagious. More than 26% of patients self-adjusted medication dose or discontinued inhalational therapy once they experienced symptomatic relief.

The Practice component of the questionnaire contained 5 entities. Majority of the patients always avoided cold drinks/foods and allergen exposure. Exposure to passive smoking was found in 12% of subjects. Two third of asthma patients reported that they visited their Chest physician more often rather than their GP (General Physician) for asthma management.

Out of 50 patients, 89% were on inhalers at the time of the study. Among them, 86.11% were using inhalers incorrectly. Most common mistakes encountered on checking inhaler-techniques were: not shaking the canister before use, unable to breath hold, exhalation through the mouth, not washing the mouth after using inhalers. The reasons found for patient dissatisfaction with inhaler use included side effects (tremor, palpitation and oral candidiasis), social stigma, cost of medication, lack of response due to poor inhalation technique, and poor supervision during subsequent daily use. 89% of the study participants had a positive attitude towards their disease and had an eagerness to know more about their disease.

INHALER TECHNIQUES CHECKLIST – SCORE

Table 2 shows the total mean score of inhalation techniques checklist. This study showed that most patients scored considerably better post counselling ($P < 0.001$; CI =95%) at it was statistically significant.

DISCUSSION

There is a global problem with asthma management, either under-treatment due to ignorance or distorted information/knowledge of patients about their disease.[1] By 2025, an additional of 100 million people will suffer from asthma due to growing urbanization and pollution. It is estimated that asthma accounts for about one in every 250 deaths worldwide.[2] The prevalence of asthma in India shows wide regional variations with the lowest prevalence in the southern region (0.9%).[11]

Socioeconomic conditions, habits, and cultural beliefs greatly influence the Knowledge, Attitude and Practices (KAP) towards asthma. Recognizing and perceiving the contributing variables is important in devising prevention and management strategies for asthma. The findings of the present study reassert the large lacunae in KAP towards asthma. The wide gap observed between recommended and actual practices indicates that there is insufficient asthma related knowledge.

Numerous validated KAP questionnaires are available in international literature, but specific questionnaires focusing on the various cultural, social and geographic areas are very few. Therefore, we developed one to meet the different needs in our study population.[12] In our study, KAP of asthma patients was assessed using a modified form of validated KAP questionnaire which is reliable and culture fair to our geographic area. This study shows that patients with asthma still lack adequate knowledge about the disease and have many misconceptions regarding the illness and its treatment, which needs to be rectified. The three main factors contributing to the success of any medical regimen prescribed for an individual patient include: (a) Patients's disease-related knowledge which enables him/her to take appropriate action to control particular symptoms. (b) The attitude of the patient towards the disease, including his or her willingness to work with the physician to manage the disorder and (c) the practice of patient which provide the confidence in the management of the disease.[13,14]

In our study, 33% of the patients refused to accept the diagnosis of asthma and many had poor knowledge about inhalational therapy. The misconception and stigmatization limit the proper use of inhalers and follow up of the therapeutic plan. The findings of the present study show that the level of awareness about asthma is much more and better in the south Indian states especially in Kerala when compared to that of a recent study done in Lucknow, where it was again observed that the level of awareness regarding asthma was very low among asthmatic patients.[6]

In our study most of the patients, i.e. 80% were from the urban population, but still were not completely aware of their disease. According to most of the recent studies, the prevalence of asthma is high in urban population than in the less polluted rural areas.[15]

Most of the patients (70%) knew that the lungs and air pipes are affected and only 36% patients were unaware about the causative and worsening factors of disease, contrary to the findings of other studies by different authors .[11,16-18] 5 patients had a misconception that asthma is contagious ,which can act as a barrier in the proper management.[19]

26% of asthma patients reported that they stop taking their medication when they feel better. As long-term treatment is required, it is very necessary to educate the patients to take medications as prescribed.[20] the episodic nature of asthma symptoms might be a cause of non-compliance.[21, 22]

Zhao et al. (2013) also found that the risk factors for asthma fatality include the insufficient asthma-related knowledge and improper management of non-compliance. By providing patient education on asthma the physical, social, emotional limitations and negative impact on the quality of life due to it can be dramatically reversed.[23]

Asthma Education Programme (AEP) is a widely accepted concept in the western medical literature and is rarely practiced or discussed in India due to overcrowded hospitals, poor medical infrastructure, overpopulation, and other social problems.[24]

The Pulmonologist in our hospital communicated and reemphasized the diagnosis and management of asthma to patients. Similarly, the role played by media, nongovernmental organizations and the Clinical Pharmacist involved in patient care, in educating and spreading awareness about asthma and its management is an invaluable yet mostly under recognized aspect. In a study carried out by Rajanadh et al.(2013) reported that, in India, pharmacy practice is still in the developing phase and the contribution of a clinical pharmacist to patient care through education is a good approach to optimize drug therapy and improve patients quality of life.[7]

In this study, we found that only very few of the hospitalized asthmatic patients had correct inhalation technique during the pre-counselling period even though the physician had explained it thoroughly to each subject. After the 'Show and Tell' educational intervention, inhaler technique was significantly improved in most of the patients similar to the result of Basheti et al., 2018 and Basheti et al., 2007.[25,26]

We recognize that this study could have been better powered with a bigger sample size and longer duration of study. A completely true reflection of asthma burden in our society could have been obtained if patients from the lowest income strata could have been included.

CONCLUSION

Asthma is still a neglected entity unlike other chronic diseases like diabetes mellitus and hypertension. In this study the inconsistencies between patient's knowledge, attitude and practice were assessed. We found good progress in the in the gap bridged in KAP from earlier studies in the past decades. There is gross under-utilization of qualified Clinical Pharmacists in patient care in hospitals across India. Therein, Clinical pharmacists can play a major role in patient education to improve inhalation technique and hence compliance and adherence to asthma medication. Provision of patient education by healthcare professionals is well successful in creating awareness among the general public about asthma.

ACKNOWLEDGEMENTS

The authors are grateful to the support provided by Mr. Pushpajan K S.

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Cite this article as:

Padmavathy R *et al*. Assessment of knowledge, attitude, practice towards asthma and the impact of patient counselling on inhalation techniques in asthmatics. Int. Res. J. Pharm. 2019;10(6):48-51 http://dx.doi.org/10.7897/2230-8407.1006202

Source of support: Nil, Conflict of interest: None Declared