ASSESSING THE KNOWLEDGE, ATTITUDE AND MEDICATION   ADHERENCE AMONG ASTHMA PATIENTS IN A RURAL POPULATION

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ABSTRACT

Background: Asthma is chronic inflammatory, airway responsiveness; reversible disorder occurs at any age, requires special attention towards management of drug therapy and its outcomes. Studies found the patients lack in many areas to reduce morbidity and mortality associated with asthma. Patient mainly lack in essential areas like knowledge, attitude towards disease management, medication adherence behavior and treatment outcomes. In India, it is estimated that more than 15 million populations are affected by asthma. Asthma accounts for 0.5% of national burden of disease with 0.2% of death. As a member of the health care team, pharmacists are in excellent position to recognize patients who are not under the care of a physician or whose asthma may be poorly controlled for a variety of reasons or factors which influence on chronic disease like asthma.

Objectives: To assess the knowledge, attitude and medication adherence in asthma patients.

Methods: This was a prospective, observational, questionnaire and hospital based study in a rural tertiary care teaching hospital for a period of 9 months. The data was collected by face to face interview of outpatients and inpatients of medicine department by administering the questionnaires for the assessment of knowledge, attitude and adherence.

Results: A total of 99 patients collected data was analyzed, out of which male patients 54(54.5%) and female patients 45(45.5%). The maximum knowledge score is 16, 83.8% patients scored mean score of 13.42. In attitude maximum score is 24, 71.2% of patients scored mean score of 17.08. In adherence maximum score is 8, 57.8% of patients scored mean score of 4.62.

Conclusion: This study concludes that the assessment of knowledge score was better compared to attitude score. The adherence score was found to be low and also found that the level of adherence score is poor.

Keywords: Drug interactions, Antidepressants, Drug utilization, Severity, Prescriptions.

INTRODUCTION

Asthma is the most common chronic respiratory disorder among all age groups. In recent decades there have been striking advances in the clinical treatment of asthma. However, in spite of this, the frequency, morbidity of asthma is increasing in many countries.[1, 2, 3]This discrepancy between the scientific evidence and the continuing negative effect of asthma on society depends to a considerable extent on patient's behavior and doctors' performance.[4]

The overall burden of asthma in India is estimated at more than 15 million patients.[5]International efforts to reduce asthma morbidity and mortality have focused that on improving patient education and self-management behavior.[4, 5, 6]Prime reasons identified for poor prognosis are inadequate education to patients, poor adherence to the medications.[7]To this Patients visit hospital emergency departments generally have a poor knowledge of asthma.[8]

Many people with asthma perceive it as an intermittent illness that is not serious enough for daily treatment; its only asthma.[9]But it's both under-recognized and undertreated.[10]

Disease management of asthma includes knowledge of the disease, its treatment, and the effective use of different therapies; health care providers play a crucial role in empowering patients with the necessary skills and knowledge to manage asthma.[11]

Lack of knowledge regarding asthma, the treatment regimen will fail because the patient is unaware of appropriate management steps or how to avoid triggers. Similarly, if a patient possesses adequate knowledge but lacks the confidence to manage episodes, or if the patient has an uncooperative attitude, treatment problems may arise.[12]

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.[13]

The effectiveness of drug therapy is largely influenced by noncompliance, which is believed to be affected by attitude towards drugs.[14]The word attitude represents a summary of psychological object captured in dimensions such as good-bad, harmful-beneficial, pleasant, likeable and unlikeable.[14]

Asthma patients should be made aware that a positive attitude towards treatment is a pre-requisite for good disease management. From a medical point of view the lack of understanding about asthma may be crucial if the patient is not able to judge the severity of his/her disease or symptoms or does not know the right treatment.[15]

In developing countries, with poor access to health care, lack of appropriate diagnosis and limited access to medicines, poor adherence seriously threatens any effort to tackle chronic ill-ness.[16]

Medication adherence is defined as the extent to which a patient's medication taking behavior coincides with the intention of the health advice he or she has been given. Medication adherence is one of the most important factors that determine therapeutic outcomes.[17]

Patients commonly improve their medication-taking behavior in the 5 days before and after an appointment with the health care provider, as compared with 30 days after, in a phenomenon known as "white-coat adherence".[18]

Studies have shown that less than 50% of asthma patients are adherent to their asthma medications.[19]Striving for improved adherence and asthma control is of vital concern in today's asthma management.[20]In a recent document, the world health organization recognized lack of adherence as a major problem in management of chronic disease and concluded that improving adherence would have more beneficial impact on health outcome than improving specific treatment.[21]

Patients' knowledge and attitude towards the disease on treatment can influence the medication adherence and eventually the therapeutic outcome.[11]

We in India, where chronic disease are becoming an important part of our medical problem will have to evolve strategies, which take into consideration the culture and literacy levels in our country.

This study is aimed to assess the knowledge and attitude of asthma patients towards their disease and treatment in a rural population. Further, the data on medication adherence and factors influencing the same among the rural patient population in our hospital would provide valuable information which can be utilized to develop strategies to improve safe and effective use of antiasthma medications among them and improve their quality of life.

Methodology

This study was carried out for outpatients and inpatients at department of medicine in a tertiary care teaching hospital in a rural population from June 2010 to February 2011 and it is prospective, observational study. Before conducting the study the ethical approval obtained from the Institutional Ethical Committee. Those who are aged above 18 years were enrolled. Enrolled patients who are already been diagnosed with asthma and on treatment for at least two weeks were enrolled in to the study after obtaining the informed consent.

Knowledge and Attitude Assessment

Questionnaire was designed based on the parameters to be evaluated and previously available questionnaires in the literatures. Face validity has been performed at Investigator and Guide levels for screening the questions of Knowledge and Attitude. For Content validity is done by experts, from 3 to 5 is done to get the proper questionnaire. Questionnaire contains components to assess the knowledge and attitude of asthma patients towards their disease and treatment. It contains a total of 14 questions out of which 8 knowledge questions and 6 attitude questions.

Medication Adherence Assessment:

Previously validated 8 item adherence scale by Dr. Morisky DE was used and prior permission has taken before conducting the study. The reliability of the questionnaire was found alpha reliability of 0.83. Tran's validation was done by consulting proficient experts in Kannada and English according to the preferences of author (Dr. Morisky DE) and acceptance was obtained for the usage of Kannada version questionnaire.

The Knowledge, attitude, and Morisky Medication Adherence Scale - 8 items was administered to all enrolled patients, to assess the knowledge, attitude and medication adherence in asthma patients.

Statistical analysis

Descriptive statistical analysis has been carried out in the present study. Results on continuous measurements are presented on categorical measurements are presented in Number (%). Significance is assessed at 5 % level of significance. Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups.

RESULTS

A total of 99 patients met the inclusion criteria. The demographic details of the enrolled asthma patients were as shown in the table 1.

The percentage of mean score of knowledge, Attitude, and Medication adherence are 83.8%, 71.2% and 57.8%, with their standard deviation of 1.51, 2.49 and 1.64 respectively. It is as shown in the table 2.

Assessment of Knowledge and Attitude

The analysis of knowledge results was assessed by the percentage of patients answering each item is as shown in table 3. A total of 53.5% of asthma patients said that there are no disadvantages for asthma patients for being in close contact with cats or dogs; 45.5% some of the medicines used for asthma may have to be used even when I am

not having symptoms of asthma; 55.6% Medicines used for asthma attacks constrict air pipes; 29.3% Medicines used for asthma helps in reducing inflammation of air pipes; 28.3% Smoking can worsen asthma; 24.3% Asthma patients may have increase in symptoms or attacks of asthma during hot weather; 11.1% Coughing and difficulty in breathing are the common symptoms of asthma patients and 11.1% Lungs and air pipes are affected when I have asthma respectively.

The analysis of attitude results was assessed by the percentage of patients answering each item is as shown in table 4.

Assessing the level of Adherence to antiasthmatics (n=99)

The level of adherence in the patients were found to be low adherence in 77(77.78%); medium adherence in 20(20.20%) and high adherence in only 2(2.02%) respectively with an inference value between males and females is 0.662 It is as shown in table 5.

DISCUSSION

The success of any medical regimen prescribed for a particular patient often depends, in large part, on three factors: (a) The patient's knowledge regarding the illness, which enables him/her to take appropriate action to control particular symptoms. (b) The patient's attitude toward the illness, including his or her willingness to work with the physician to manage the disorder and (c) The patient's confidence in his or her ability to contribute to the management of the illness.[12]

The maximum knowledge score is 16, 83.8% patients scored mean score of 13.42. In attitude maximum score is 24, 71.2% of patients scored mean score of 17.08. And in adherence maximum score is 8, 57.8% of patients scored mean score of 4.62; it is as shown in the table 2. It suggests that some knowledge and attitude may be due to repeated contacts with health care service. If this contact is used effectively, with a minimum education program and attitude therapy it may improve compliance and adherence in asthmatic patients.

Onset of asthma can occur at any age but is usually seen in children and young adults. In our study, it was more in middle aged (21-50 yrs) group of patients. The pattern of report of asthma patients were found to both sex were affected almost similar in our study though slight differences in prevalence between males and females have been reported, with males were more predominantly raised compare to females in asthma patients. In our study we found that 54.5% were males affected with asthma and 45.5% were females affected with asthma. Similar pattern of find outs were found out in a recent report of ICMR, Nearly 7 million of sufferers are men and just over six million women, while the worst-affected age group is the 15-35-year-olds.[22]

Occupational asthma is induced by an agent inhaled at work place, agents inhaled at work can aggravate pre existing asthma but the term occupational asthma usually restricted to asthma initiated or induced by such agents. The most interesting finding in this study was the increased risk for asthma associated with occupational exposure like agricultural; iron industry; hotel workers; living together with cattles (cow, dog, sheep etc); house wives are major affected patients in our study. The reason for this is that the major risk factors for occupational asthma in a working population. A similar report was found out in the studies.[23]

It is observed in our study that only 35.4% of asthma affected patients were smokers. Similarly only 37.3% were smokers reported in other studies and adjusting for smoking in this study had a minimal effect on the exposures. This was also the case in other population-based studies.[23,24]

If patient lacks knowledge regarding asthma, the treatment regimen will fail.[12] In our study we found out that the patients knowledge regarding the disease and antiasthmatics score found better, so it is very essential to educate the patients regarding the some of the lacks observed. It is due to misconceptions about asthma drugs usage, 46.5% of patients don't know about the affect of living together with animals will increase severity of asthma, similar type of results found out were reported in the other studies.[23]

A 55.6% of asthma patients believed that medicines are going to constrict the bronchi as that it shows how medication will help in managing asthma there is on lack of knowledge regarding the mechanism of action of medicine; 29.3% of asthma patients were not aware that medication reduces the inflammation. Asthma patients of 45.5% reported that they stop taking their medication consumption when they feel well or not having symptoms of asthma. Similarly, in one of the article, it was described that, it is very necessary to educate the patients with asthma as it require long term treatment (even when no symptoms are present). To that it is also need that patient understanding difference between inflammation and bronchoconstriction, and has to recognize the symptom of disease is required.[25]Educational methods tailored to needs of each patient and effective behavior towards disease and its management is very essential.

The patient has an uncooperative attitude towards treatment problem may arise.[12]The strongest predictors disagree of worry to take their medication for long time, embarrassing in taking their medication in public places. Asthma affects the pleasures of life, others come to know that i have asthma, confident that if I take my medications for asthma regularly I could live normal life and finally all the medications that I am taking for treating my asthma are essential. Similar types of results were found in the other studies.[26]

Studies have shown that improved knowledge alone does not improve control of asthma. When combined with behavioral therapy the outcome improves. This was observed in the study done by Naveen Grover et al.[27]Patients who dislike taking medication will be more at risk of severe episodes and may be less likely provides their doctors with information important for their management. It clearly shows that a better understanding of attitudes towards asthma medication should be helpful in encouraging good patient adherence to treatment.[26]

Decades of research on adherence have demonstrated that patient compliance in both clinical and research settings is a serious problem across all diseases but particularly in the treatment of chronic diseases with frequent periods of remission and complex medication regimens, such as asthma.[2]

Non compliance to medication is a major barrier to effective asthma management. Its real extent and geographical variation throughout the world are not yet known.[2]Adherence to asthma medication treatment is inadequate; with figures on low adherent behavior ranging from 38% to 50%.[20]Poor adherence to asthma medication regimens is already well known. In attempt to understand the reasons for non compliance the subjects were asked what they thought about the consumption of antiasthmatic drugs. Only 60% considered they needed to take all of their medicines to remove all of their breathing problems and more than half of them were afraid to take their medicines. A 75% of noncompliers had a tendency to stop their treatment when they felt better the intermittent nature of asthma is a cause of non-compliance.[2, 5]Similarly in our study the level of adherence to anti asthmatics were found to be low in 77.8% of patients, the statement they said that they are hassled to stick their medication regimen for longer duration of time is 71.7%. And 49.5% of patients said that stopped taking their medication without telling the doctor because they felt worse when took it. Similarly 54.5% of patient will stop their medication when feel health is under control.

In our study the level of adherence to antiasthma medications was found to be similar in male and female ratio with inference value 0.662. The factors which influence on adherence to antiasthmatics is identified based on the answers given, some of these contributing factors has been discussed earlier apart from that 46.5% of patients forget to take medication along with them while on travelling;

34.4% of patients forgot to take their medication sometimes and 26.3% of people miss taking their medications for reasons other than forgetting for the past two weeks. Similar observations were found out by the Robin green by administering a questionnaire to asthma patients obtained that 28.5% were forget to take their medication sometimes.[28]

As a member of the health care team, Pharmacists are in excellent position to recognize patients who are not under the care of a physician or whose asthma may be poorly controlled for a variety of reasons and can realize the dream of WHO, 'to increase the healthy life expectancy for all'.

CONCLUSION

Present study demonstrated that substantial numbers of people with asthma lack the necessary attitude to contribute effectively to their disease state management. This study also shows that how different factors may modulate adherence to asthma treatment. The opportunity to identify reasons for non adherence through a simple assessment will allow a tailored intervention to be planned for each patient.

The study established better knowledge compared to attitude and disturbing levels of adherence with management recommendations. Asthma education strategies need to be conducted to engage patients with low asthma attitude to achieve improved patient outcomes, including quality of life. Further, strategies need to be motivated patients to use preventer medication during times when they feel well. The primary focus should be to identify negative and work towards positive changes to achieve good self management of asthma.

ACKNOWLEDGMENT

Table 1: Demographic details of asthma patients: (n=99)

	Number of patients	Percentage (%)
Age in years		
18-30	13	13.1
31-50	53	53.6
≥51	33	33.3
Gender		
Male	54	54.5
Female	45	45.5
Education levels		
0-7	51	51.5
8-10	22	22.2
>11	26	26.3
Employment Status		
Student	3	3.0
Employee	44	44.5
Housewife	38	38.4
Unemployed	3	3.0
Retired	11	11.1
Duration of asthma		
<1 years	4	4.0
1-2 years	34	34.4
3-5 years	28	28.3
6-10 years	19	19.2
>10 years	14	14.1
Total	**99**	**100.0**

Table 2: Overall assessment of the scores of knowledge, attitude and medication adherence: (n=99)

Tools	Total number of items	Max score	Mean score	Median score	SD	% of mean score
Knowledge score	8	16	13.42	14.0	1.51	83.8%
Attitude score	6	24	17.08	17.0	2.49	71.2%
Medication Adherence score	8	8	4.62	4.75	1.64	57.8%

Table 3: Assessing the knowledge towards asthma and antiasthmatics: (n=99)

Question number	Questions	Answered		95%CI
		Yes	No	
1	Lungs and air pipes are affected when I have asthma	88 (88.9%)	11 (11.1%)	81.2-93.7
2	There are no disadvantages for asthma patients for being in close contact with cats or dogs	46 (46.5%)	53 (53.5%)	36.9-56.2
3	Asthma patients may have increase in symptoms or attacks of asthma during hot weather	24 (24.2%)	75 (75.8%)	16.9-33.5
4	Coughing and difficulty in breathing are the common symptoms of asthma patients	88 (88.9%)	11 (11.1%)	81.2-93.7
5	Smoking can worsen asthma	71 (71.7%)	28 (28.3%)	62.2-79.7
6	Medicines used for asthma attacks constrict air pipes	55 (55.6%)	44 (44.4%)	45.7-64.9
7	Medicines used for asthma helps in reducing inflammation of air pipes	70 (70.7%)	29 (29.3%)	61.1-78.8
8	Some of the medicines used for asthma may have to be used even when I am not having symptoms of asthma	54 (54.5%)	45 (45.5%)	44.8-64.0

Table 4: Assessing the attitude towards asthma and antiasthmatics: (n=99)

Question Number	Questions	Answered				95% CI
		Strongly agree	Agree	Disagree	Strongly disagree	
1	Even though I have asthma, it does not affect the pleasures in my life	21 (21.2%)	48 (48.5%)	27 (27.3%)	3 (3.0%)	60.05-77.9
2	I am not worried when others come to know that I have asthma	18 (18.2%)	54 (54.5%)	22 (22.2%)	5 (5.1%)	63.2-80.5
3	If feel, that all the medications that I am taking for treating my asthma are essential	38 (38.4%)	51 (51.5%)	10 (10.1%)	0(0%)	82.4-94.4
4	I am confident that if I take my medications for asthma regularly, I could live a normal life	45 (45.5%)	42 (42.4%)	12 (12.1%)	0(0%)	80.0-92.9
5	I am not embarrassed in taking my asthma medications in public places, if I have to	7 (7.1%)	48 (48.5%)	39 (39.4%)	5 (5.0%)	45.7-64.9
6	I am not worried even if I have to take these medications for asthma for long time	2 (2.0%)	27 (27.3%)	52 (52.5%)	15 (15.2%)	21.2-38.9

Table 5: Assessing the level of medication adherence to the antiasthmatics (MMAS-8): (n=99)

Level of medication adherence	Number of patients		Percentage	
	Males	Females	Males	Females
Low adherence(<6)	40	37	74.1	82.2
Medium adherence (6to<8)	13	7	24.1	15.6
High adherence(=8)	1	1	1.8	2.2
Total: n=99	54	45	100.0	100.0
Inference	Levels of adherence is statistically similar in males and females with p=0.662			

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