Knowledge, attitude and behaviour of asthmatic patients regarding asthma in primary care setting in Abu Dhabi, United Arab Emirates

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Abstract

Background: Adequate knowledge, positive attitude and behaviour as well as proper inhaler use of asthmatic patients are prerequisites for optimal management of bronchial asthma.

Objectives: To assess the knowledge, attitude and practice of patients with asthma with respect to their disease and to examine their skills in using inhaled medications.

Patients and methods: In a cross sectional analytic study, a sample of 100 asthmatic patients was selected from patients attending Al Bateen Family Medicine clinic in Abu Dhabi during the period from August 2011 to July 2012. Inclusion Criteria were adult patients known asthmatic for one year or more; patients using inhalers or Diskus inhaler Informed consent was obtained from every patient who agreed to enrol in the study. Each patient responded to a structured questionnaire assessing his/her knowledge about asthma aetiology, pathophysiology, symptoms, treatment and triggering factors; and evaluating his/her attitude and behaviour regarding asthma diagnosis, inhalers, anti-inflammatory drugs and non-medical methods of treatment , and assessment of their inhaler skills.

Results: There were 52% males and 48% females enrolled in the study. The main sources of information about asthma were health workers (56%) and Newspapers and magazines (18%). 70% believed that asthma can be life threatening; asthma was believed to be initiated by infections in 86% of patients and weather changes by 49%. The reasons for acute exacerbations were perfumes (87%) and upper respiratory tract infection (86%). About 59% of the patients did not use inhaled preventers regularly when prescribed because they believe that inhaled therapy is habit forming; (34%) felt uncomfortable taking asthma medication at work or public places or away from home, and 42% of patients avoided exercise due to fear of acute exacerbations. There were (71%) using MDI, (28%) using Diskus inhaler and (13%) using turbo haler. Only a few patients had the correct skills using Metered-Dose Inhaler (MDI), Discus or turbo haler; the mean score of correct use of MDI was 5+.47 out of 8; the mean score of correct use of discus was 4+.82 out of 7; the mean score of correct use of turbo haler was 3+ 0.67 out of 6. Most patients did not use peak flow meter (PFM) in asthma management. About 5% of asthmatic patients tried non-medical methods for the purpose of cure. These included traditional healers.

Conclusion: Asthmatic patients in Bateen Clinic have false beliefs and poor inhaler skills about asthma management. Most of them use inhalers for treatment of asthma attacks and less than half do not use preventers regularly when prescribed. Most patients believe that preventer therapy lead to its addiction; most of them are lacking inhaler skills especially coordination actuation with inhalation; most patients avoid exercise to avoid acute exacerbations. Patients' ideas, concerns and fears regarding asthma management should be explored during consultation; inhaler skills should be reviewed also in each visit.

Key words: asthma, primary care, Abu Dhabi

Introduction

Asthma is a chronic inflammatory disorder of the airways. Anti-inflammatory agents such as inhaled steroids, leukotriene antagonists. are the mainstay of its management. Under-utilization of these agents and reliance on reliever medication has been reported in much of the literature. (1-2)

Bronchial asthma is one of the most common chronic respiratory disorders among all age groups with a reported prevalence of 5 to 10%. (3) During the last decades studies from different countries keeping appropriate statistics have reported a significant rise in asthma morbidity and mortality. (3)

The prevalence of physician diagnosed asthma among governmental primary school children in the United Arab Emirates was 13%, in addition the wheeze by history was 15.6%. (4). Another study carried out by Al Ain University estimated 13 % prevalence of asthma among local Emirates patients. (5)

Adherence to prescribed inhaled corticosteroids is notoriously poor. Even in observational studies where patients were aware of being monitored, average adherence was only 63% to 65 %.(5) Non-adherence to long-term inhaled corticosteroids is thought to be a major reason for treatment failure. (6)

It is known that adherence to the use of inhalers is generally poor. Studies have shown that on average, only 63-65% of participants adhere to their inhaled corticosteroids even while under the period of observation. It is likely that adherence over the longer term is much less and this is suspected to be a major reason for treatment of asthma to fail (7).

Providing information only, versus providing information plus teaching actual skills as part of asthma education intervention trials has not been shown to change patients' self-management behaviours. A scientific review of 12 randomized controlled trials showed that providing information only increased subjects' knowledge of asthma but did not reduce hospitalizations, emergency room visits, unscheduled doctor visits or lost work days and it did not lead to improved lung function or adherence to medication (8).

Asthmatics have been classified into two groups: Deniers reject the fact that they have a chronic illness or are "asthmatic". This group of people tends not to take prophylactic medication. They may fear dependency and lack of perceived control over their illness but as a consequence end up "over-using" B-adrenoceptor agonists. Acceptors understand the chronic nature of asthma and are more likely to adhere to prophylaxis and resort to using short-acting B-adrenoceptor agonists only when needed in an acute attack (9).

Many asthmatic patients think of asthma as being an intermittent illness that does not warrant daily treatment - "it's only asthma", (10) while others believe treatment is only necessary when there is an exacerbation of their disease (11). Adolescents may think they have "grown out" of a childhood illness (10). Teenagers may also be reluctant to ask others to stop smoking in their presence and may even smoke themselves partly due to wanting to 'fit-in' with their peers (12). Many patients, especially children, may be embarrassed to use their inhalers in front of others and do not want the stigma associated with a disease (12). On the other hand, adherence can be increased in patients who have been hospitalized for their asthma as they realize the seriousness of their disease (12).

Misperceptions about the role of inhaled corticosteroids (ICS) in asthma are common and can contribute to lack of adherence in use. Many patients are concerned about the safety of the medication and do not understand why ICS are necessary and these factors are believed to be key contributors to lack of adherence (15). Due to the fact that corticosteroids may not relieve symptoms during an acute attack, some patients may think the medication is ineffective and therefore not necessary (16). 'Steroid phobia' is common, occurring in up to 46% of people who have been prescribed ICS (16). Studies have shown that only 45% of ICS prescribed are actually taken (13, 14).

Barriers to asthma medication adherence are : concern about drug cost and safety; belief that the asthma is not severe enough to warrant daily treatment; concern about drug dependence or diminished effectiveness over time; peer stigmatization; forgetfulness; belief that asthma medication is ineffective; denial that one is asthmatic; difficulty using asthma inhalers; inconvenience; fear of medication side-effects; embarrassment and laziness (17).

In this study we tried to figure out our patients' knowledge, attitude, skills and barriers regarding asthma management to improve their care.

Methods

This was a descriptive, cross sectional study. It had been carried out in a Family Medicine Clinic, which is a part of Ambulatory Health Services, SEHA corporate, Abu Dhabi, UAE. One hundred asthmatic patients were selected from those presenting to a Family Medicine clinic. Inclusion criteria were age 18 years and above, known asthmatic for one year or more. Exclusion criteria were age less than 18 years and patients with COPD. Patients responded to a structured questionnaire assessing their Demographic data (age, sex, education, employment status, duration of asthma), knowledge about asthma aetiology, symptoms, triggering factors, pathophysiology and management, and requiring information about their attitude and behaviour towards the diagnosis of asthma, and use of inhalers. Patients were asked to demonstrate the use of their inhaler and the investigator observed the different steps. All patients gave their informed consent before participating in the study. Data obtained was analysed using the statistical package for the social sciences (SPSS) version 14. The study proposal was approved by the Institute Review Board at Sheikh Khalifa Medical City/managed by Cleveland Clinic under the reference of REC-14.07.2011(RS-168).

Results

Patients' characteristics: A total of 100 asthmatic patients were enrolled in the study. Males were 52% and females were 48%. The majority of patients (43%) were above 50 years. About 5% were without education and 60% had college education. (Table 1)

Table 1: Demographic data

Category	Number (100)	(Percent)
Gender		
Male	54	(54%)
Female	46	(46%)
Age group		
18-30	34	(34%)
31-40	26	(26%)
41-50	27	(27%)
Above 50	43	(43%)
Education		
1.No school	5	(5%)
2.Elementary	14	(14%)
3.High school	18	(18%)
4.College	60	(60%)
5.Higher education	5	(5%)
6.Literacy classes only	4	(4%)
Smokers	21	(21%)
Exposure to smoke		
1. At home	29	(29%)
2. At work	33	(33%)

Patients' knowledge: Health workers were the main source (56%) of patients' information. Asthma was believed to be life threatening by (71%) of patients. The main causes of acute exacerbations were acute respiratory infection (86%) and perfumes (87%); most patients know symptoms of acute attacks. (Table 2)

Table 2: Patient knowledge about asthma aetiology, pathophysiology and triggering factors

Category	Number 100	Percent
What is your main source of information about asthma?		
1.Newspapers and magazines	18	18%
2. Radio	5	5%
3.TV	14	14%
4.Brochures, posters and other printed materials	12	12%
5.Health workers	56	56%
7.Teachers	2	2%
8.Internet	8	8%
Can asthma be life threatening?		
1. Yes	71	71
2. No	29	29
What could be symptoms and signs of asthma?		
1. Cough	100	100%
2. Wheeze	77	77%
3. Difficult breathing	91	91%
4. Chest tightness	64	64%
5. Do not know	3	3%
How can a person get an acute exacerbation?		
1. Weather changes	49	49%
2. Aspirin	5	5%
3. Exercise	24	24%
4. Smoke	35	35%
5. Perfumes	87	87%
6. Acute respiratory infection	86	86%
7. Do not know	2	2%
What things are effective in controlling asthma?		
1. Avoiding triggers	64	64%
2. Using medication as advised	33	33%
3. **Do not know**	19	19%

Patients' attitude and behaviour: Table 3 (next page) describes the attitude of patients towards asthma and their behaviour regarding use of inhalers and preventive therapy. (57%) of patients usually seek medical care for treatment of asthma. A total of (59%) of asthmatic patients did not use the anti-inflammatory drugs (the preventers) in the form of steroid inhalers when prescribed because they were afraid of lifelong dependence on inhalers .Most patients (76%) have felt comfortable taking asthma medication when they were at work or away from home or in a public place.

Table 3: Attitude and behaviour of patients towards their illness

Category	Number 100	Percent
What would you do if you have symptoms of asthma?		
1.Go to health facility	87	87 %
3.Go to pharmacy	9	9%
4.Got to traditional healer	5	5%
5. Self-treatment options (herbs, etc.)	4	4%
I do not take prescribed inhaler for a longer period because of		
Adverse effect	24	24%
Because they are habit forming	59	59%
Increase in weight	3	3%
It causes other disease like diabetes/ hypertension	5	5%
They did not relieve symptoms	14	14%
I feel comfortable taking my asthma medication when I am at work or away from home or in a public place	76	76%
I tend to avoid exercise as I am afraid of having an asthma attack	32	32%
I feel confident in my ability to exercise without having an asthma attack	58	58%
Once an attack starts, I am not capable of stopping it. I just have to wait until it subsides.	14	14%
I can avoid or minimize most asthma triggers.	64	64%
Do you feel that generally doctors prescribe too much medication	**23**	**23%**

Technique of inhaler, Diskus and turbo haler

There were 71 (71%) of patients used MDI, 18 (18%) used Diskus inhaler and 13 (13%) used Turbo haler. Patient demonstrated the use of their inhalers correctly as follows: MDI (40.62%), Diskus (66.66%) and Turbo haler (66%) respectively . The observed different steps in using inhaler techniques are shown in Table 4.

Table 4: Technique of inhaler, discus and turbo haler use

Category	Number	Percent
Correct steps - ask patient to demonstrate how (Inhaler) 71 patients		
1. Shake the inhaler	44	57%
2. Exhale	35	45%
3. Breathing slowly and deeply	34	44%
4. Co-ordination actuation with inhalation	31	40%
5. One actuation with one breath	39	51%
6. Holding the breath after actuation	31	40%
7. Exhale slowly	21	27%
8. Wait for one minute before second action	16	21%
Mean score of correct use of MDI 4.48 ,SD ±1.52		
Correct steps - ask patient to demonstrate how (Diskus) 28 patients		
1. Exhale	18	64%
2. Breathing slowly and deeply	20	71%
3. One actuation with one breath	23	82%
4. Holding the breath after actuation	24	76%
5. Exhale slowly	17	61%
6. Wait for one minute before second action	13	46%
Mean score of correct use of discus 4.54 , ±SD 0.82		
Correct steps - ask patient to demonstrate how (turbo haler) 13 patients		
1. Exhale	8	62%
2. Twist the red grip as far as it will go	8	62%
3.Click, then twist it back as far as it will go to the left	13	100%
4.Inhale,close your lips over the mouth piece, take deep breath	13	100%
5. Holding the breath after actuation	5	38%
6. Exhale slowly	4	31%
7. Wait for one minute before second action.	9	69%
Mean score of correct use of turbo haler 5.07, SD ±0.73		

Only 4 (4%) of study population used PFM for Follow up of asthma management. Only 1 patient knew fully how to use PFM in a correct way. (Table 5).

Table 5: Technique of peak flow meter use

Category	Number 4	Per cent
1. The peak flow meter should read zero or its lowest reading when not in use	3	75%
2. Use the peak flow meter while standing up straight	2	50%
3. Take in as deep a breath as possible	2	50%
4. Place the peak flow meter in the mouth, with the tongue under the mouthpiece	2	50%
5. Close the lips tightly around the mouthpiece	4	100%
6. Blow out as hard and fast as possible; do not throw the head forward while blowing out	1	25%
7. Breathe a few normal breaths and then repeat the process two more times. Write down the highest number obtained. Do not average the numbers	1	25%

Discussion

Successful asthma management depends on many factors; these include sufficient knowledge and positive attitude. A patient with asthma should understand the basic pathophysiology of asthma, know symptoms of acute attacks, identify triggering factors and be able to take appropriate steps to manage their illness. On the other hand, an asthmatic patient should have a positive attitude towards asthma including willingness to follow the physician's instructions to manage the disorder. These two factors interact with each other and with other important factors such as inhaler technique skills to determine the overall patient's compliance. To control these factors, it is important to determine the level of patients' knowledge, to evaluate their attitudes regarding asthma and to assess the patients' skills in using medications in order to plan interventional programmes that may direct their behaviour towards proper management of their illness, thus reducing the overall morbidity and mortality. In this study, knowledge, attitude, skills and behaviour of asthmatic patients regarding asthma were assessed using a questionnaire. (19)

The patients attended a family Medicine Clinic in Abu Dhabi City. Most of them (65%) were educated to a college or higher. The reliability of the questionnaire used in assessment was revised by members of the Research Committee in Al Bateen Family health Center and in Sheikh Khalifa Medical City managed by Cleveland Clinic.

In this study the main source of patients' information regarding asthma was the health worker (56%). This result is consistent with the results of a study conducted to assess patients' knowledge in a tertiary care hospital. The study found that (85%) of patients reported that doctors were the main source of information. This study suggests that patients look up to health care providers as an important source of information therefore clinicians should continue to play an important role in disseminating information on asthma.(20)

In this study (59%) of patients do not take their prescribed inhaler for a longer period because they believe that these medications are habit forming. This is again consistent with the attitude of asthmatics in other studies; it is reported that 50% of patients suffering from chronic diseases do not comply with the doctor's advice on treatment (21) though there has been little agreement about the causes of noncompliance. Among asthmatics there are deniers and acceptors of the diagnosis, including misconceptions about inhalers (24), and it is postulated that these beliefs and attitudes influence the medication practice. (22)

Another factor that affects patients' compliance to treatment is the side effects of medications. (24%) of asthmatic patients in this study were reluctant to use preventive inhaler regularly because of fear of side effects that affected their compliance to treatment and their use of inhalers. Many of these patients gave explanations like inhalers make their symptoms continue for a longer time and they may become dependent on inhalers for the rest of their lives if they started using them. However, the clear explanation for this wrong behaviour is most probably that the use of inhalers makes relatives and colleagues know that they suffer from asthma, which is regarded as a stigma. That is why they are reluctant to accept using them. Patients often combine biomedical facts with alternative beliefs and practices in their approach to illness and physicians should

be aware of this in order to optimize health education and clinical management. (24)

In this study only 4% of patients were using a Peak flow meter for monitoring their asthma. One of the explanations is that prescribing peak flow meters and giving self-management guidelines to all asthma patients is unlikely to improve mortality or morbidity. Patients whose asthma is severe may benefit from such an intervention. (25)

Asthmatic patients in Bateen Clinic have poor inhaler skills and false beliefs about asthma management. Most of them use inhalers for treatment of asthma attacks and less than half do not use preventers regularly when prescribed. Most patients believe that preventer therapy leads to its addiction; most of the patients are lacking inhaler skills especially coordination actuation with inhalation; most patients avoid exercise to avoid acute exacerbations.

Patients' ideas, concerns and fears regarding asthma management should be explored during consultation. Inhaler skills should be reviewed also in each visit.

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