ATTITUDES OF PATIENTS WITH ASTHMA ON INHALER USE- A CROSS-SECTIONAL STUDY FROM SOUTH KERALA

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ABSTRACT

BACKGROUND

Asthma is an important health problem worldwide. High prevalence and poor control of asthma make its management a major public health problem with more than 5,00,000 hospital admissions and 2,50,000 deaths annually all over the world. India contribute maximum to the death toll accounting for 22.3% of all global asthma deaths. Medications in the inhaled forms are the best therapeutic options currently available for asthma. Despite this, the percentage of patients opting inhalers as the preferred modality of treatment seems to be low. The patient's ability to use the device correctly and the adherence to the treatment regimen are likely to be influenced by their beliefs, attitudes and concerns about the use of inhalers as the preferred mode of treatment.

The aim of the study is to-

1. To find out the proportion of asthmatics using inhalers as the preferred modality of treatment.
2. To bring out the various beliefs and misconceptions on inhalers among the above study group.

MATERIALS AND METHODS

Study subjects were asthmatics in the age group of 15 to 45 years who attended the medical camps conducted in Alappuzha and Kottayam districts of Kerala during the period 2006-2009 (n=912). A semi-structured interview schedule regarding the use of inhalers were administered to collect the data.

RESULTS

52% of the study subjects accept inhaled preparations as the preferred modality of treatment (male-68%, female-35%). 48% are reluctant to take inhalers in the first step (male- 32%, female- 65%). 47% believe the term inhaler is the name of a particular drug rather than a device (male- 45%, female- 48%). 76% of inhaler users do not know how to use it properly. 7% think the powder in the dry powder inhalers can block the airways.

CONCLUSION

Knowledge about asthma and the importance of its proper management are poor in our population. A joint effort in the form of health awareness programmes are needed to alleviate fears and misconceptions of patients and common people towards inhalers.

KEYWORDS

Asthma, Inhaled Medications, GINA, Misconceptions, Asthma Control.

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BACKGROUND

Asthma is one of the ancient diseases known to mankind and still a common clinical problem encountered in our day-to-day clinical practice. It is probably one of the easiest condition to manage as well. However, more than 300 million people suffer from asthma and it is estimated that a further 100 million will be added to this by the year 2025.[1] The disease burden of asthma in India is largely not known. Many studies have shown a prevalence of 3% among the adult population, i.e. more than 40 million asthmatics at present. But, considering the poor medical record maintaining system in most parts of our country, this figures could be a gross underestimate of the real problem.

Asthma nearly account for 5,00,000 hospitalisations and 2,50,000 deaths worldwide annually.[2,3] India contribute maximum to the death toll accounting for 22.3% of all global asthma deaths (World Health Organisation 2004).

Despite the spectacular advances in the understanding of pathogenesis, pathophysiology and molecular biology of asthma, presence of simple, robust, reliable diagnostic modalities and availability of highly effective, safe and affordable inhaled drugs, a large proportion of asthma remain uncontrolled globally and especially in developing countries.[4] Across the globe, the percentage of asthmatics opting inhalers as the preferred modality of treatment seems

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to be low.[5] Poorly-controlled asthma obviously is associated with significant mortality and socioeconomic problems.[6] The key factors attributed to poor asthma control include non-availability or underutilisation of spirometry in the diagnosis, lack of adequately trained personnel for doing spirometry, poor supply of inhaled medications at affordable cost, lack of training given to patients on the correct usage of inhaled devices and the barriers created by the cultural beliefs, attitudes and misconceptions of patients on the use of inhalers.

The advent of medications in the inhaled form revolutionised the management of asthma. It is safe and cost effective when comparing with oral or injectable medications. They are the best agents available at present for the control of asthma. They can also considerably reduce the hospitalisations due to asthma. However, its effectiveness depends largely on the patient's ability to use the inhaler device properly and adhere to the treatment regimen prescribed. This is largely influenced by their opinions and beliefs about the use of inhalers as the preferred and suitable mode of treatment. Even if the best available inhaled medication is prescribed, if the patient doesn't like it or does not use it properly, it is unlikely to benefit.[7] It is a well-known documented fact that the patients views, attitudes, cultural beliefs and affordability should be taken into account during medical decision making and selection of choice of therapy. There are more than hundred different inhaled devices with more than 20 ingredients available at present and newer and newer devices are flooding in the market every day. Generally, while choosing the inhaled device the preference of the patient is to be respected unless there is a compelling reason to choose a particular device by the treating physician.[8] Beliefs and attitudes influence the behaviour and some theoretical models can explain up to 30% of the health behaviour.[9]

In Kerala, the general population's knowledge on asthma and its medication use has never been studied systematically. In other populations, such studies have shown that there are many misconceptions about asthma such as asthma is contagious, it is related to lunar eclipse, inhalers are addictive and should be used only in severe conditions.[10]

Poor understanding of the disease and of the best available medications leads to poor asthma control and impaired quality of life.[11] Hence, the patient's awareness on the disease and the medication use is an integral part in the successful management of asthma.

Aims and Objectives of the Study

With this background, we aim to find out the proportion of asthmatics using inhalers as the preferred modality of treatment and to bring out various beliefs and misconceptions on inhalers among the study group.

MATERIALS AND METHODS

The study was done as a cross-sectional observational study. Patients who attended the free asthma medical camps conducted in Alappuzha and Kottayam districts of Kerala during the period 2006-2009 were recruited for the study. A diagnosis of asthma was traced from previous medical records available with the patients. In those with no records and not on medications, the diagnosis was established by compatible symptoms and the presence of Bronchodilator Reversibility (BDR) as per the Global Initiative for Asthma (GINA) guidelines. After the initial spirometry, 2-4 puffs of salbutamol (100 micrograms/puff) through a nebuliser or a Pressurised Metered-Dose Inhaler (pMDI) with spacer was given and spirometry was repeated at 15 minutes.

Patients between the ages of 15 to 45 who were having knowledge about inhalers as one of the modality of asthma treatment are included in the study. Patients below the age of 15 or above 45 years, those who had not heard of inhaled medications in the management of asthma, patients with diagnosis other than asthma or non-diagnosed cases were excluded from the study.

A semi-structured interview schedule regarding the use of inhalers was administered to collect the data. The questionnaire on person's attitudes, beliefs and perceptions on inhalers were designed by the authors in local language (Malayalam) and they were not validated. The questions administered include-

1. Do you consider inhalers as the preferred choice for treatment for asthma?
2. Do you prefer oral medication over inhalers?
3. In your opinion, the drug delivered per dose in inhaler in comparison to oral medications is same/less/more.
4. Do you aware that different medications are available in the inhaled form?
5. Do you think inhalers are addictive?
6. Do you consider inhalers should be reserved for serious illness?
7. Do you think once started inhalers have to be taken life long?
8. Do you know how to use an inhaler correctly and if yes can you demonstrate the technique?
9. Any other comment or concern you want to share with us on inhaled medications?

Demographic data were collected at the time of interview, which includes age, gender, religion, education, occupation, area of residence and family income. Data were entered in MS excel and analysis was done using Epi Info Software.

RESULTS

Age Group (Years)	Male (n, %)	Female (n, %)	Total (n, %)
15-25	168 (18.4)	149 (16.3)	317 (34.75)
25-35	157 (17.2)	146 (16)	303 (33.2)
35-45	139 (15.2)	153 (16.77)	292 (32)

Table 1. Age and Gender Composition of Study Population

Pressurized metered-dose inhaler (pMDI) 1. Shake the canister well and open the cap 2.Tilt the head back a little, and breathe out slowly and completely 3. Place the inhaler's mouthpiece in the mouth. 4. Tight lips around the mouthpiece. 5. Actuate the pMDI and continue with a slow breath 6. Inhale to total lung capacity 7. Hold breath for 10 seconds
Pressurised metered dose inhaler (pMDI) with a spacer 1. Remove the cap of the spacer. 2. Remove the cap of the pMDI and shake well. 3. Insert the mouthpiece of pMDI in the hole at the back of the spacer. 4. Breath out until lungs feels empty. 5. Insert the spacer mouthpiece into the mouth 6. Press down the canister. 7. Slowly breathe in from the spacer to full breath. 8.Hold breath for 10 seconds
Dry powder inhalers 1.Remove the inhaler cap 2.Load the dose of medication 3.Tilt head back a little, and breathe out slowly and completely 4. Place the inhaler's mouthpiece in mouth. 5. Tight the lips around the mouthpiece. 6.Inhale deeply through mouth for 3 to 4 seconds 7. Take the inhaler out of the mouth. 8. Hold breath for 10 seconds.

Table 2: Inhaler Device Checklist Used in this Study

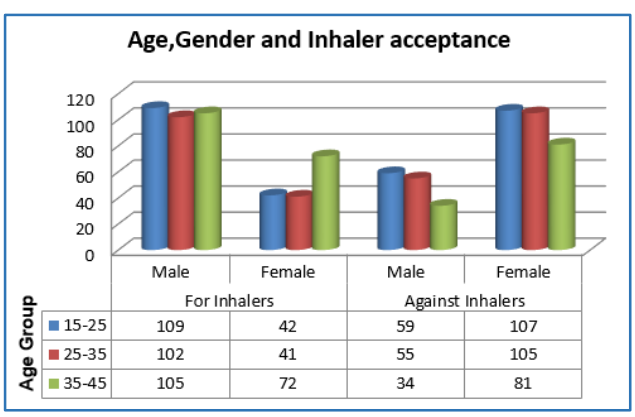

Figure 1. Relationship between Age, Gender and Acceptance of Inhaled Medications

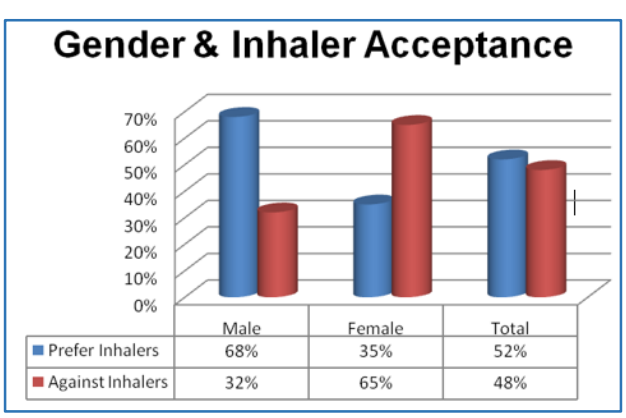

Figure 2. Inhaler Acceptance among Males and Females

We studied 912 patients with asthma among which 464 were males and 448 were females. Age-gender composition of the study population is given in Table 1. All studied up to 10th standard or above. 16% completed university degree in arts/science and 6% were postgraduates. 7% of the patients were holding diploma/degree in technical education. 51% of the study subjects were Hindus, 26% were Muslims, 21% were Christians and 2% declined to disclose the religion. Majority of the patients (59%) were manual labourers who make their livelihood by engaged in traditional occupational sectors. 5% were in government jobs, 9% works in private firms, 14% were students, 6% were small shop owners and 7% were jobless. All the patients were staying in urban, semi-urban areas with reasonable knowledge in social welfare measures implemented by various government and non-government agencies in health sector. All were literate with access to newspapers, television and nearby public healthcare facility. 52% of the study subjects accept inhaled preparations as the preferred modality of treatment (Figure 1 and 2). The response of male subjects were better than that of the female counterparts (male- 68%, female- 35%). Nearly, half of the patients (48%) are reluctant to take inhalers in the first step citing various reasons like social stigma and addictiveness of inhalers. 42% of patients believe that once started inhalers cannot be stopped and oral drugs are preferred except in emergencies and serious situations. This belief is more among females in comparison to males. Females outnumber males by a huge margin in avoiding the inhalers (male- 32%, female- 65%). 47% of

the patients believe the term inhaler is the name of a particular drug rather than a device and they did not know the drug prescribed to them was a reliever or controller of asthmatic symptoms (male- 45%, female- 48%). About 91% of the study subjects claim that they knew how to use an inhaler correctly, but 76% of the patients failed to demonstrate the technique properly. Checklist used for assessing the usage of various inhaled devices are shown in Table 2. Interestingly, 7% of the patients believe the powder in the dry powder inhalers can block the airways and lead on to further complications. Level of education, socioeconomic status, religious status and occupation do not significantly influence the use of inhalers in our study.

DISCUSSION

Patients' beliefs, attitude towards illness, their health seeking behaviour and cultural preferences are important in understanding and responding to various heath conditions including asthma. Our study was aimed to understand the various barriers with regard to the use of inhalers as the preferred modality of treatment in asthma. Misconceptions about the use of inhalers may constitute a major obstacle in the proper management of asthma, which result in adverse treatment outcomes and poor asthma control. Our study revealed that knowledge about asthma in our population is not appropriate and most of the asthmatics have misconceptions on inhalers, which need to be corrected. The misconceptions ranging from addictive nature of the inhalers to 'once started-lifelong' are comparable with findings from other developing countries.[12]

About half of the patients are not aware of the fact that various drugs are available in the inhaled form and they do not know the difference between a reliever and a controller. The ignorance and low use of inhaled controller medications is of great concern. Studies have shown that 64% of asthmatics in India believed that regular controller medications are not necessary for asthma and about half of the asthmatics had fears about the use of inhaled steroids.[13] This observation reiterate the fact that all asthmatics in India need to be educated on the importance of using optimal doses of inhaled steroids for adequate asthma control.

It is found that females were more reluctant in using inhalers despite high literacy rate and favourable health indices among Keralite women. This could be attributed to the social reasons arising in a typical patriarchal society like India. Studies from Punjab also showed similar pattern in which they found that majority of females preferred to keep inhaler use a secret to avoid social stigma and prefer oral medications over inhalers if possible.[9]

Though 91% of the patients stated that they knew the proper inhaled technique, the reality is far from the claim. 76% of the patients are not able to take inhalers properly when they are asked to demonstrate. The major factor leading to these errors is the lack of formal training on the proper usage of inhaled devices by trained personnel. Studies have shown that asthma education programmes focussed in self-management and behavioural change improves methodological inhaler device use, adherence to proper treatment and thereby asthma control.[14,15]

A curious finding we noticed in our study was about 7% of asthmatics raised a concern regarding the effect of the particles in the dry powder inhalers. They believe that this can block the already narrowed respiratory passages and aggravate the asthma and cause lung damage. Despite extensive literature search, we could not find a similar apprehension elsewhere.

Many of the patients interviewed were of the habit of using expectorants, mucolytics and antibiotics for their asthmatic symptoms. This is probably due to the practice of over prescription by the local practitioners and/or unregulated access to various medications from commercial pharmaceutical stores and other shops without valid prescriptions. Apart from this various indigenous preparations claimed to be curative in asthma were also been used by many. These issues were not addressed as these were beyond the scope of our study. We also didn't look into the psychological factors of those who are reluctant to use inhalers and those with poor inhaler technique.

CONCLUSION

Knowledge about asthma and importance of its proper management are poor in our population. Use of appropriate inhaled medications in the right dose, in right time, in the right method is the most cost effective modality of treatment and should be the choice in the management of asthma. Inhalers are helpful in reducing hospitalisations due to asthma and also for its control. It is high time to plan strategies to address the issue of non-utilisation of highly effective and safe therapeutic measures by a large segment of population. More health awareness programmes are needed to alleviate fears and misconceptions about inhaled medications. Health education, motivation and empathy towards patients and their family members are important to achieve this goal.

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