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A Study on Knowledge, Attitude and Practice of Asthmatic Patients towards Inhaler Use

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Abstract : *Asthma is a common respiratory disease characterised by chronic inflammation of airways leading to reversible airway obstruction. Inhalation therapy forms the mainstay of treatment of asthma. Inhaled medications are available in various dispensers which includes metered dose inhaler, dry powder inhaler, nebulizers etc. Adherence to inhalation therapy has direct relationship to the treatment outcome of asthma and it requires proper understanding by the patientabout the modality of treatment they receive. Various patient related factors has shown to affect the usage of inhalers among asthmatics, including lack of awareness, false beliefs etc. Hence this study was planned to be undertaken to assess the knowledge, attitude and practice of asthmatic patients towards inhaler use. This was a cross-sectional observational study. About 190 asthmatic patients attending the Department of Pulmonary Medicine, Government Medical College Patiala were enrolled for the study.The study showed a high prevalence of misconceptions about inhaler use among asthmatic patients indicating an urgent need for increasing patient awareness in this regard.*

Keywords: *Asthma, Inhaler, Knowledge, Attitude, Practice*

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I. Introduction

Asthma is a common chronic respiratory disorder among all age groups. Various newer treatment modalities has emerged in the recent past for advanced management of asthma. However, in spite of this, the prevalence of asthma shows an increasing trend in many countries.[1] The existing discrepancy between the scientific progress and the continuing negative effect of asthma on society may be partly attributable to patient's behaviour and doctor's performance.[2] Asthma burden in India is estimated more than 15 million patients.[3] International efforts to reduce asthma burden have focused on improving patient education and self-management behaviour.[4]

Poor prognosis of asthma is contributed by inadequate education to patients and poor adherence to prescribed medications.[5] Many a times, it is observed that even patients getting repeated exacerbations leading to hospital admission possess poor knowledge of asthma and its treatment, which leads to further exacerbations that adversely affects their lung healthover time.Many asthmatics believes their illness to be intermittent and episodic and hence refuses for a continuous treatment.This is further complicated by the fact that asthma is both under-recognized and undertreated. Asthma management essentially involves knowledge of the disease, its treatment, and the effective use of different therapies. Doctors and other health care workers play a major role in enhancing the knowledge of asthma patients in this regard for achieving a better treatment outcome.[6] Lack of proper information leads to treatment failure among asthmatics as patient often fail to identify and avoid exposure to triggers and to use early medical interventions that are available. Also, uncooperative attitude of the patient proves to be a hindrance to asthma management as such patients do not follow their doctor's instructions.

Inhaler devices are an important part of the armamentarium of clinicians who treat asthma.The efficacy of inhaled medicines depends on a proper inhaler technique and treatment adherence by the patients. Deep rooted beliefs and society imparted stigma in the patient's mind affects the patient's attitude towards inhalers. Changing the patient's concepts by imparting education in this regard will improve the treatment outcome of asthma patients by facilitating optimum utilization of available resources. However, this requires prior knowledge among clinicians regarding the prevalent concepts of their patient regarding inhaler use. Hence this

study was designed to assess the knowledge, attitude and practice of asthma patients attending a tertiary care hospital towards their disease and treatment.

Aims and Objectives

1. To assess the knowledge, attitude and practice of asthmatic patients towards inhaler use
2. To bring out various beliefs and misconceptions on inhalers among the study group.

II. Materials and Methods

This was a cross-sectional observational study. Asthmatic patients attending Department of Pulmonary Medicine, Government Medical College Patiala were enrolled for the study. A diagnosis of asthma traced from previous medical records available with the patient or by compatible symptoms and the presence of bronchodilator reversibility as per the Global Initiative for Asthma (GINA) guidelines. A total of 190 patients who met the inclusion criteria were enrolled for the studyirrespective of the type of inhaler being used or duration of treatment. The study was approved by institution's ethical committee. Informed written consent was obtained from all the subjects. Demographic data were collected at the time of interview, which includes age, gender, education status, occupation, smoking habits, area of residence, smoking history, frequency of inhaler use etc. A semi-structured interview schedule regarding the use of inhalers was administered to collect the data. The interview questions was designed based on previous studies on this subject, to explore the knowledge, attitude and practice of the patients towards inhaler use.[7,8]Majority of the questions were framed in objective manner where the patient is expected to answer 'yes' or 'no'. The response was marked in the proforma by the interviewer simultaneously. At the end of interview, participants were allowed to share any of their concerns or opinions regarding inhaler use other than those mentioned in the proforma. Afterwards, the interviewer spend time with the patient to educate them regarding any of their ill-knowledge or misconceptions about inhalation therapy.

Inclusion Criteria

The following patients were enrolled for the study:

1. Known cases of asthma
2. Those with age between 15 to 60 years
3. Those who have knowledge about inhalers as one of the modality of asthma treatment
4. Those who are willing to take part in the study and to sign informed written consent

Exclusion Criteria

The following patients were excluded from the study:

1. Those below the age of 15 or above 60 years
2. Those who had not heard of inhaled medications in the management of asthma
3. Those who are unwilling to participate in the study

III. Results

Out of 190 patients participated in the study, 69 (36%) were females and 121 (64%) were males (Table 1). Average age was 43.40 years. About 120 (63%) were residing in rural area. Majority were non- smokers (54%, n=102). Most of the patients had primary school level education status only. Most of the subjects used inhalers for less than 1 year duration(Table 2). DPI was the most commonly used device, followed by MDI (Fig 1). The observations on patient's knowledge regarding inhalers, attitude towards their use and practice of inhalation therapy are summarised in table 3.About 74% preferred use of inhalers in asthma. However, about 43% liked to use oral medications more than inhaled medicines. About 55% believed that inhaled medications contains a higher dose than oral. About 76% patients believed that they need to continue inhalers life- long once started. Although 54% claimed to use inhalers regularly, only 29% used to bring their device for follow-up assessment, while 33% admitted that they don't know how to use their inhaler properly.

Table 1

Age group (Years)	Male	Female	Total
15-30	23 (12%)	16 (8%)	39
31-45	25 (13%)	31 (16%)	56
46-60	73 (39%)	22 (12%)	95
Total	121 (64%)	69 (36%)	190

Table 2

Parameter		Number	Percentage
Residence	Urban	70	37
	Rural	120	63
Smoking	Non smoker	102	54
	Smoker	33	17
	Ex-smoker	55	29
Education	Illiterate	51	27
	Primary	82	43
	Secondary	41	22
	Graduate	16	8
Duration of use	<1 year	64	34
	1-2 years	62	33
	2-3 years	35	18
	>3 years	29	15

Table 3

Question	Yes		No	
	Number	Percentage	Number	Percentage
Are you aware that you are suffering from asthma?	133	70	57	30
Do you consider inhalers as a choice for treatment for asthma?	141	74	49	26
Do you prefer oral medication over inhalers?	82	43	108	57
Are you aware that different medications are available in the inhaled form?	74	39	116	61
Do you know amount of medication in inhalers are less compared to tablets?	85	45	105	55
Do you think inhalers are addictive?	72	38	118	62
Do you think inhalers have side effects?	40	21	150	79
Do you consider inhalers should be reserved for serious illness?	78	41	112	59
Do you think once started inhalers have to be taken life long?	144	76	46	24
Do you feel ashamed or embarrassed to use inhalers in front of others?	63	33	127	67
Do you find inhaler costlier than oral medications?	87	46	103	54
Do you use your inhaler regularly?	103	54	87	46
Do you wish to change the type of inhaler you use?	55	29	135	71
Do you carry your inhaler to doctor's clinic during all your visits?	55	29	135	71
Do you think that you know how to use an inhaler correctly?	127	67	63	33

Figure 1

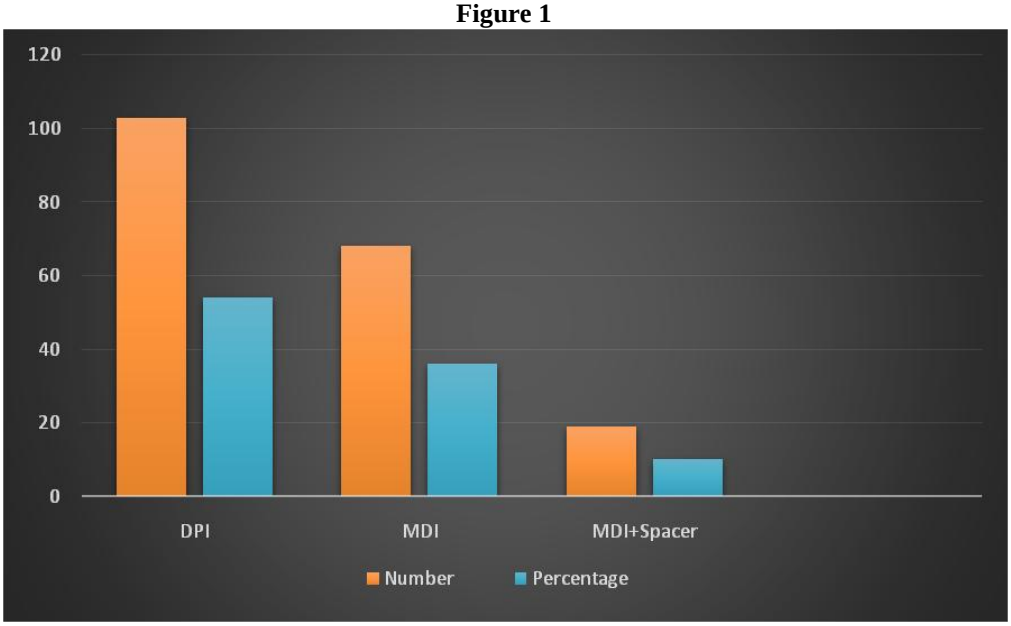

Figure 1: Showing type of inhalers used by patients. Majority were using DPI (54%, n=103, followed by MDI(36%, n=68) and MDI+Spacer (10%, n=19)

IV. Discussion

The effectiveness of therapy is mainly influenced by non-compliance that is known to be affected by the knowledge and attitude of patients towards drugs. The term attitude is defined as a totalof psychological object described as good-bad, harmful-beneficial, pleasant, likeable and unlikeable.[9] Compliance to therapeutic regimens in asthma is often poor. Education has been pointed as an important part of any asthma management strategy, which helps by improving asthma knowledge and changing behaviour.[10] Knowledge, attitudes, and beliefs of patients towards bronchial asthma are identified as the major decisive factors. Patients' knowledge and attitude towards the disease and treatment have an effect on adherence to medication and ultimately the therapeutic outcome.[11]The current study included higher number of females (58%) than males (42%).A study by Gajanan et al[12] which assessed knowledge and attitude of bronchial asthma patients towards their disease was constituted by 45.5% female patients. In that study, about 54% patients were hesitant to accept the diagnosis of asthma. In contrary, our study revealed that 74% were aware of their disease.About 46% of study population were not taking inhalers regularly.Gajanan et al.[12]also had demonstrated that the compliance rate in using inhalers among asthma patients was low (60%), and many stopped them in spite of proper guidance regarding inhalational therapy.In the current study, about 74% considered inhalers as a treatment modality of asthma, indicating a better public awareness in this regard. An earlier study done by Vitull K. Gupta et al[7]among patients of obstructive pulmonary diseases and in the general population had shown thatonly 15.1% patients and 17.2% general population considered inhalers as the preferred mode of treatment. In a study by Sulaiman et al[8] in 2017, 52% of the study subjects preferred inhalational therapy(male-68%, female-35%). Thus the general acceptability for inhalers varies considerably among different populations.A large of the patient population had stigma on using inhalers and chose oral medication. Their reasons included inhibitions for inhaler use in public, preference to keep the inhaler use as a secret, need for a smaller inhaler device and the belief that inhalers were used for severe diseases and once started on, inhalers had to be taken life-long as it becomes a habit. This fact was more among females, similar to the finding in the study by Vitull K. Gupta et al.[7] About 29% of patients didn't like the device they use and wished to change them. This implies the necessity to consider patient's preferences also while prescribing any inhaler.About 43% of study population preferred oral medicines over inhalers. It was lesser when compared to that observed by Sodhi et al[13] in 2013, where oral medications were preferred by 62.1% patients. In a study by Marsden et al[14],significantly more of asthma patients believed tablets are better than inhalers for the treatment of asthma than normal population (46 % vs 30 %).Thisemphasisesthat patient education programs should reinforce awareness; eliminate social stigma and misconceptions prevailing in the community regarding asthma.

The current study clearly demonstrated a lack of proper awareness about inhaler use among asthmatics. A study done by J. Jayasutha et al[15] in 2014 had shown that patients were ignorant and uneducated about asthma and its treatment and counselling had shown a significant improvement in knowledge, attitude and practices of patient in counselling group when compared with control group. Patient education by clinical pharmacists had a positive effect on improvement in knowledge, attitude and practices of asthma patients. Current study also had similar observations. About 38% patients believed that inhalers are addictive. It was a large proportion on comparing with the findings by Aamir et al[16]where 19.3% reported fear of addiction to inhalers. In a study by Marsden et al[14], 37% believed that inhalers possess addiction potential, similar to our finding. Fear of addiction prompts non-adherence to their treatment early in the course.It should be emphasised that about 71% of patients were not having a habit of carrying their inhalers device along with them during routine check-up visits. And about 33% confessed that they are unsure whether they are using their inhaler properly or not. Beyond doubt, a good number of patients will be found to have poor inhaler technique if assessed objectively. Clinician need to counsel the patient to bring their inhalers routinely for reassessing their technique, to correct the flaws. This attempt will ensure a better drug delivery and improved treatment outcome, further enhancing the patient's compliance to inhalers.

V. Conclusion

Current study reveals high prevalence of false beliefs and misconceptions about inhalers and its use in the community, which has a potential to create hindrance in the pathway of asthma treatment. Patient and public education in this regard should be considered for increasing awareness of asthma and its treatment modalities, in order to achieve better disease control and reducing the morbidity and mortality.

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