Asthma treatment by practitioners in Lahore-Pakistan

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ARTICLE INFORMAION	ABSTRACT
  *Corresponding Author: Syed Shahid Imran Bukhari: shahidimran1332@gmail.com **Short Communication**	The main objective of the study was to investigate the prescription habits of general practitioners dealing with asthma in Lahore. Among 200 practitioners, 166 (83%) responded. One hundred and sixty six asthmatic subjects were selected and given to the practitioners at Gulab Devi hospital, Lahore. Practitioners were asked for a prescription for each subject and also to write views on dietary restrictions in asthmatics. The practitioners prescribed totally thirty patterns of short acting β-2 agonist and 16 patterns of steroid treatments. Only 39% of practitioners recommended corticosteroids for asthma symptoms persistence. Majority of practitioners were not well aware of the treatment options in spite of preventive therapy (prescription for long-acting β-2 agonists was 8%, inhaled corticosteroid was 6% and theophyllines 13%). In Lahore, practitioners did not follow guidelines regarding the management of asthma. There was found misconceptions regarding diet restriction. Deficiency of relevant knowledge regarding asthma medication has been associated due to a misunderstanding with dietary habits and inhalers use. **Keywords:** Asthma, General practitioners and Asthma guidelines

INTRODUCTION

Asthma has become a common respiratory illness with a prevalence approaching 10% in recent worldwide studies (Rondon *et al.*, 2012). Studies about children depicted prevalence of asthma: about 14.1% in Turkey from the Asian countries (Zhang *et al.*, 2014), 9.5% in Iran (Ghaffari & Arabi, 2013) and 9-29.5% in India (Ghaffari *et al.*, 2012). In an aged population of India (±60 years) prevalence was about 4.5% (Gupta *et al.*, 2002). Among Pakistani children there was an asthma prevalence of 8% as recorded in 1998 by ISAAC (International Study of Asthma and Allergies in Childhood). General practitioners (GPs) are responsible for the initial management of asthma because most patients with asthma in a community first go to them for treatment. A European survey showed that general practitioners were good because of excluding those persons who were not suffering from asthma (specificity 99%), but under-diagnosed those who had current asthma (sensitivity 59%) (Jain *et al.*, 2010). In spite of the fact asthma was being frequently diagnosed and the proportion of undiagnosed to diagnosed cases had been constant years after year, indicating an increase in prevalence (Boulis & Long, 2002). There were significant differences between specialists and GPs towards the treatment of patients with asthma (Khan *et al.*, 2010).

With the aim to evaluate the prescribing patterns of general practitioners in Lahore, Pakistan and to elicit their attitude towards factors and inhaler therapy, this study was conducted.

MATERIALS AND METHODS

Study design

A questionnaire survey was conducted in March 2018 among practitioners at Lahore. About 200 practitioners were selected but only 166 responded. One hundred and sixty six asthmatic subjects were given to the practitioners at Gulab Devi hospital, Lahore. Practitioners were asked for a prescription for each subject and also to write views on dietary restrictions in asthmatics. Three case situations were presented to the practitioners and then asked for a prescription (name, route and dose of each drug) for each case of asthma. Response to each case was compared with the National Asthma Guidelines published by the National Asthma Council in 1995 (Mallol, *et al.*, 2013). The National Asthma Guidelines were based on recommendations from international guidelines

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published by the Global Initiative for Asthma (Mallol, *et al.*, 2013).

Case 1 was a 20-year old asthmatic female with symptoms occurring once a week.

Case 2 was a 20- year old asthmatic female with daily symptoms of cough and wheezing of 3 months duration.

Case 3 was the same patient as in Case 2, who continued to have persistent nocturnal cough despite 1 month of therapy.

Ten further questions were asked to determine the attitudes of doctors towards inhaler therapy in asthma and to elicit what advice they would have given to asthma patients about avoiding certain drugs (aspirin and beta-blockers) and food items (bananas, rice and cold drinks). Responses were coded and the data were entered with verification and analyzed using SPSS software (version 10.0).

RESULTS

Questionnaires were completed by 166 of the 200 participating doctors and the response rate was 83%. These 83% included 55% male and 52% were females who had graduated more than 10 years ago. All the responders were GPs working in the public sector hospital and no specialists were included in the study. The given table summarizes the drugs prescribed by the practitioners for each of the three asthma cases. Short-acting β-2 agonists were prescribed by most doctors for Cases 1 and 2, given in an inhaled form by 55%, oral by 25% and in a combined way by 20%. Thirty different short-acting β-2 agonist regimens were used with differences in route of administration and dosage of 100 to 800gm inhaled or 1 to 8mg orally with the frequency of 1 to 4 times daily.

Only 25% of practitioners wrote steroids in their prescription for continuous symptoms of asthma. Again, 16 different regimens (doses ranging from 200-1000 gm inhaled or 6-80 mg orally) were used and an oral formulation was recommended for many patients. Only half of the doctors attempted writing a prescription for Case 3. Long-acting β-2 agonist was prescribed by 8%, oral theophyllines by 13%, and cromolyn by 2%. A significant minority of doctors (up to 20%) inappropriately prescribed cough syrups, antihistamines (including ketotifen), antibiotics and vitamins. The majority of doctors (74-83%) were willing to use metered-dose inhalers (MDI) in asthmatic patients but 22% felt they were addictive.

Use of MDI was reserved for severe asthma patients by 17% and a similar number avoided MDI in children that MDI produced less tachycardia than oral therapy was not agreed to by 26% of the doctors and 20% considered the use of MDI to be unsafe in pregnancy. Half of the practitioners advised inappropriate dietary restrictions. The advice was given to avoid cold drinks by 40%, bananas by 15% and rice by 11%. Appropriate advice to avoid aspirin was given by 47% and beta-blockers by 83% of doctors.

Table: Prescribing practices of general practitioners in the management of asthma

Medication group	Case 1*	Case 2*	Case 3*
Short-acting 2 agonists	62	78	45
Corticosteroids	24†	35	37
Long-acting 2 agonists	Nil	4	8
Theophyllines	3†	10	13
Cromolyns	3†	1	2
Miscellaneous Anti-histamines (including ketotifen)	14†	15†	16†
Cough syrups	1†	20†	11†
Antibiotics	Nil	7†	1†
Vitamins	2†	1†	Nil

Total number of responses 166
* For definitions of Cases 1-3, refer to Materials (paragraph 2).
† Represents inappropriate prescription (medication not recommended in asthma guidelines).

DISCUSSION

Our study has depicted very serious lacking in the prescription behaviour and understandings for the asthma management in Pakistan by general practitioners. Their prescribing practices were not compatible with the guidance by National Asthma Guidelines (NAG). Our study did not investigate the proportion of practitioners who were aware of the National Asthma Guidelines or had ever participated in an asthma education programme. Participation of primary care doctors in asthma management programme is often low (29% in one study) (Gaude *et al.*, 2014) but after consulting the

guidelines, up to 40% of doctors were shown to modify their treatment preferences. In an audit on the management of hospitalized patients severe deficiencies were noted in the care of asthma patients in Pakistan (Miravitlles *et al.*, 2012).

Asthma guidelines recommend the use of short-acting β-2agonists for intermittent symptoms. Preventive therapy is recommended for persistent asthma symptoms along with inhaled corticosteroids being the best therapy of choice. Beclomethasone (500 gm twice daily), budesonide (400 gm twice daily) or fluticasone (50-200 gm twice daily) are the most commonly used inhaled corticosteroids. On the persistence of symptoms in spite of inhalation of moderate doses of corticosteroids inhaler a large number of options are recommended; these include increasing the dose of inhaled corticosteroids, or the addition of a long-acting β-2 agonist, theophylline or leukotriene antagonist. In our study, 30 different short-acting β-2 agonist regimens were used for patients with intermittent asthma symptoms similar to the study of Lakanpaul *et al.*, 2014. There was under usage of steroids in patients with persistent symptoms. Sixteen different corticosteroid regimens were prescribed and majority not conforming to the asthma guidelines. As reported by Mallol *et al.*, 2013 theophyllines were more popular than cromolyn but were prescribed by only a few physicians. The great majority of physicians in our survey did not use long acting β-2 agonists or leukotriene antagonists. The uncommon use of an inhaled long-acting β-2 agonist was more likely to be due to lack of knowledge among doctors rather than to its high cost, since inhaled corticosteroids were equally priced. There was worrying reliance on cough syrups, antihistamines and antibiotics by practicing doctors. These latter medications increase the cost of the prescription, produce unwanted side effects and delay administration of appropriate therapy. In Asia there have been observed a high rate of admission in hospital than the Caucasian population even without any symptoms of severe asthma (Zaman, *et al.*, 2006). There is limited information on the communication gaps, the variability of knowledge and cultural behaviour regarding asthma and its medical care. In a study of careers' selection due to asthma during childhood in a selected Pakistani community, 80% felt that inhalation therapy was effective in controlling asthma symptoms (Lakanpaul, *et al.*, 2014). In this study the beliefs of the practicing doctors were not better than those of asthma carrier. One in every five practitioners felt that inhalers were addictive, should be reserved for severe cases, and avoided in children and in pregnancy. One in every four practitioners was not aware that metered dose inhalers cause fewer side effects than oral therapy.

These deficiencies in knowledge and faulty perceptions about asthma medications were responsible for the poor standard of asthma prescription. In the survey, 57% blamed rice and oily food for asthma exacerbation (Lakanpaul, *et al.*, 2014). Significant proportions of practitioners in our survey would have given similar advice to avoid commonly used food items.

Our study was conducted in a selected group of practitioners and may not reflect the practice at large. However, the doctors in our study had registered themselves for a CME programme and are thus likely to be more knowledgeable than those doctors who do not attend educational programmes. Secondly, our study did not elicit how many doctors had ever seen the National Asthma Guidelines.

There is dire need of oriented awareness, targeted training and consistent support to provide a more effective and extensive service for Pakistani patients suffering from asthma for their improvement (Robert, *et al.*, 2010).

CONCLUSION

Prescribing by general practitioners in Lahore, Pakistan did not follow National Asthma Management Guidelines (NAM). The majority of the practitioners surveyed were not familiar with the published guidelines and many had misconceptions about inhaler therapy and the role of diet in asthma.

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