



ASTHMATIC CHILDREN; KNOWLEDGE, ATTITUDE AND PRACTICES AMONG CAREGIVERS

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ABSTRACT: Objectives: To assess the knowledge, attitude and practices among caregivers of asthmatic children and to describe their clinical and biographic features. **Material and methods:** A descriptive cross-sectional study was conducted in asthma clinic and medical wards of children hospital P.I.M.S.100 diagnosed asthmatic children and their caregivers were enrolled. Two questionnaire one comprising clinical aspects and other regarding knowledge attitude and practices among caregivers were administered. **Results:** 100 asthmatic children and their caregivers participated. Among children, 77% were breastfed, 95% were immunized, only 13% were receiving controller medications and 62% were having >5 acute exacerbations per year. Diagnosis of asthma was accepted by 76% of caregivers, of which 67% recognized correct etiology. Multiple food items were blamed for acute exacerbations, while respiratory infections were most commonly recognized triggering factor. 50% of study population was ignorant of aerosol therapy and only 26% prefer it. Cough suppressants are most popular home medications. **Conclusions:** Asthma awareness is inadequate. Controller medications and aerosol therapy is underused and unnecessarily blamed. Asthmatic children are deprived of nutritious food considering them as triggering factors. Awareness raising strategies are needed in community.

Key words: Asthma, Caregivers, Knowledge, Attitude, Practices.

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INTRODUCTION

Asthma is a chronic inflammatory disorder of the airways¹. It is one of the major public health problems affecting 160-300 million people worldwide²⁻⁴. Global prevalence of asthma ranges from 1-18% of the population in different countries^{3,4}. In our country recent data compiled about the prevalence of asthma shows 18-19% prevalence^{5,6}. Studies conducted in different countries have reported an increase in asthma prevalence of about 50% per decade¹³. When uncontrolled, it can cause significant morbidity and sometimes mortality. Approximately 250,000 people die of asthma worldwide annually³. It also imposes a great economic burden on family and consequently on whole country. Considering the magnitude of the problem a lot of research work is being carried out in developed countries regarding better understanding of pathophysiology of asthma, its prevention, and better treatment strategies, and their results are being successfully applied in many countries to reduce morbidity

and mortality related to disease^{2,14,15}.

In pediatric practice, involvement of caregivers is essential, since children cannot take care of their own health. Therefore, caregiver's perception of their child's disease is a significant factor that can influence the acceptance of the disease, compliance to therapy and quality of life of an asthmatic patient regarding asthma, despite a great burden of the disease, unfortunately there is little awareness and many misconceptions regarding various aspects of the disease in different countries of the world including Pakistan¹⁷. Inadequate knowledge about asthma may lead to delay in initiation of therapy, which will further increase morbidity and mortality. With better health education and providing targeted information asthma awareness among general population can be improved which will reduce the burden of disease and economy loss. Continuous surveillance is needed to assess the caregivers knowledge, attitude and practices so that newer

treatment modalities can be introduced more effectively in community.

Considering this we have conducted a survey based study aimed at collecting original information regarding knowledge, attitude and practices among caregivers of known asthmatic children presenting in Children hospital Islamabad which is visited by people of different economic strata. Once the current level of asthma awareness among people is evaluated, we would be in a better position to improve public health education by putting more stress on its weak aspects and that will improve the management of asthma in future.

OBJECTIVES OF STUDY

- To assess and describe the existing level of knowledge, attitude and current practices among caregivers of asthmatic children in defined population.
- To identify misconceptions about various aspects of asthma in caregivers.
- To describe clinical and demographic features of asthmatic children.

OPERATIONAL DEFINITION

Diagnosis of asthma

Diagnosis of asthma in selected was based upon following criteria: ²

Consider asthma if any of the indicator is present: wheezing, high pitched whistling sound when breathing out with history of any of the following:

Course worse particularly at night

Recurrent wheeze

Recurrent difficult breathing

Recurrent chest tightness

MATERIALS AND METHODS

It was a prospective cross-sectional study conducted in asthma clinic and medical wards of children hospital P.I.M.S. Duration of study was one year (from Feb 2007-Feb 2008). Sample size taken was 100 according to formula

$$n = z^2 \cdot 1 - \alpha / 2 \cdot P \cdot (1 - P) / d^2$$

Known asthmatic children between the ages

of 2 months to 13 years, who were registered in asthma clinic or admitted in medical wards, and their caregivers were enrolled. Parents were preferred. A diagnosis of asthma was based on above mentioned definition. Caregivers of asthmatic children who were unable to communicate verbally due to any reason were excluded. Asthmatic children having any other chronic illness with asthma were also excluded from study.

DATA COLLECTION PROCEDURE

Diagnosed asthmatic children enrolled in asthma clinic or admitted in medical wards and their caregivers were enrolled. Ethical committee was informed. Caregivers were informed about study and its objectives, and informed consent was taken. Two questionnaires, one for asthmatic children (Annexure-1) and one for their caregivers, (Annexure-11) were administered. Caregivers were also given opportunity to express their ideas and give free comments. No attempt was made to correct a wrong answer or response until the completion of interview. After the information was gathered, caregivers were provided with the correct knowledge of asthma.

DATA ANALYSIS PROCEDURE

Statistical analysis was performed using SPSS Software version 10. Descriptive statistics were calculated. Mean, median, mode, standard deviation and range were calculated for qualitative variables as mentioned above. Frequencies and percentages were calculated for qualitative variables as mentioned above. Comparison of variables was done using chi-square test. P value <0.05 was considered as significant.

RESULTS

Patient's Profile

Total of 100 asthmatic patients and their caregivers were enrolled. Out of them 57 patients were males and 43 were females. Patient's age ranges from 4-156 months with mean of 69.54 months (S.D. 46.54) while mode was 108 months. Considering the nutritional status of the patients most of them were of normal built on centile charts for their age and sex. 95% of the patients were born full term

while 5% were born preterm. 77% of the patients were exclusively breast fed for 6 months while 23% were given either partially breast feeding or formula feed only in their initial 6 months of life. 56 patients were never hospitalized for asthma in their lives.

61 patients were not on regular preventive medications for asthma while 39 were on some preventer. It was found that exacerbations/year either frequent or infrequent were more common in those who were not on preventive medications (P value .009). Only 5 patients had undergone skin desensitization tests done with some successful results. 38% of patients know about triggering factors of asthma while 62% did not. This factors was obviously related to the age of the patient being 88% in the patients > 10 years of age. Family history of asthma, eczema or atopy was present in 61 patients while absent in 39. 87 patients were completely vaccinated according to EPI while 13 patients had either partial or no vaccination at all. Only 2 patients receive annual influenza vaccine. 26 patients have smoker in their homes while 74 did not have.

Caregivers Profile, Knowledge, Attitude and Practices

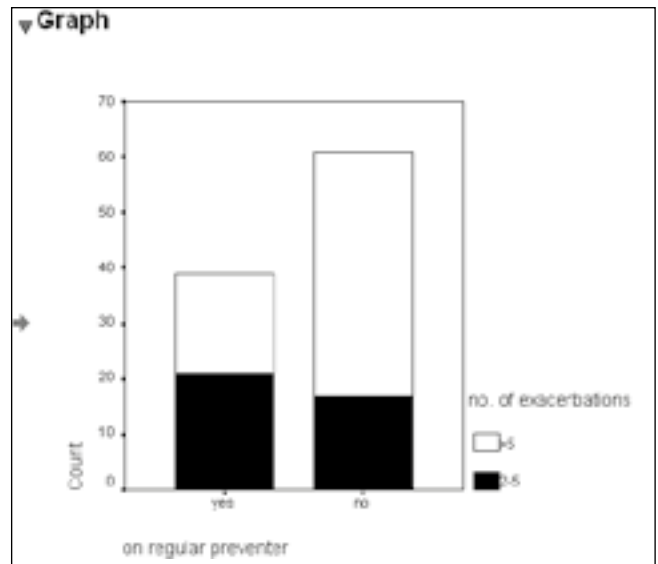
80 caregivers were female (79 were mothers) and 20 were males (18 were fathers). Regarding educational status of the caregivers 13% were illiterate, 21% received education upto primary level, 25% upto secondary level while 35% received higher education. 50% of carers earn >10 thousands rupees/months, 34% 5-10 thousands and 16% < 5 thousands. Coming to the knowledge of caregivers about asthma 76% of the caregivers were aware of diagnosis of asthma in their child. 17% negated the diagnosis of asthma while 7% had no idea about the diagnosis. In response to question about etiology of asthma, 5 caregivers responded that asthma is infectious in origin. 67 recognized asthma as allergic disorder. 1 caregiver thought that asthma is a congenital disorder and 21 of them did not know what sort of disease is asthma is. It was recognized as familial disorder by 47% of caregivers. 87% of caregivers thought that asthma is a curable disease while it

was incurable according to 17% of caregivers. 83 of them think that asthma is not a debilitating disease while 17 caregivers believe that this disease will cause lots of sufferings to their child in future. Regarding precipitating factors, caregiver's belief about food as a triggerer factor has been shown in tabulated form. 97% of caregivers consider RTIs as precipitating factor for asthma, while 3% did not know whether infections can precipitate asthma or not. Seasonal distribution of asthma according to caregiver's belief has been shown in graph. Dust was recognized as precipitating factor by 70% and smoke by 63% of caregivers. Considering animals as precipitating factor, 70% of caregivers did not know the answer to this question. 28% consider furry pets, 1% considers cattle and 1% considers other animals as triggerer for asthma. Only 25% caregivers could recognize house mites as precipitating factor while 68% think that pollens can precipitate asthma.

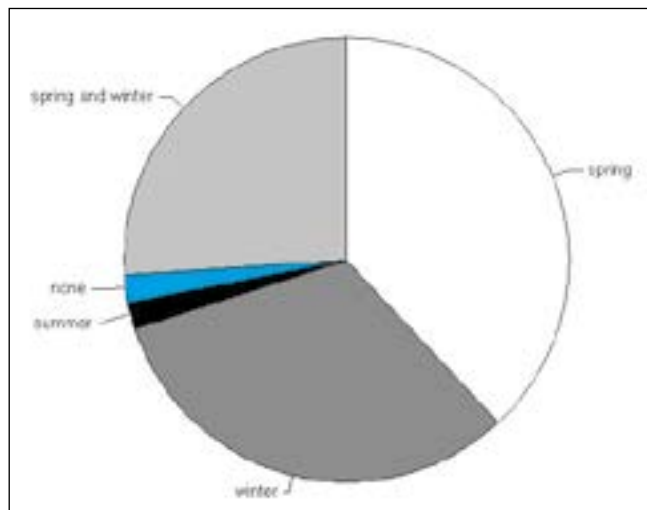
Half of the caregivers i.e. 50% know about aerosol therapy for asthma while rest of 50% do not. Only 26% of study population prefers inhaled therapy. Reasons for reluctance to inhaled therapy were different: some were not advised by the doctor, some find it difficult to use, and 10% think that inhaled therapy is harmful or addictive. Graph shows that number of acute exacerbations were not as much frequent in patients who prefer inhaled therapy as compared to those who do not prefer it (P value is .277).

100% caregivers prefer to contact doctor when their patients have bronchospasm. 13% consult pediatrician in such case, 21% consult general practitioners, 65% goes to hospital accident and emergency department while one caregiver consult pulmonologist. All of them agree that regular follow-ups are necessary. 80% of the patient don't know about controller medications for asthma while 20% know about them. Out of these 20, only 6% know how and when to use these medications without doctor consultation. Out of the 80% who don't know about controller medications for asthma, 25% are already using these and they don't know about these medications.

In response to the question that which medications do you keep at home for acute bronchospasm, 40% answered that they don't keep any medication at home. Reasons were different, some lack in knowledge, some cannot afford, some of them found it very dangerous to keep medicines at home and do self medication. 22% keep salbutamol at home. 26% use antiallergy for acute exacerbation, while 12% keep multiple medications. 27% of caregivers tried alternative treatment including homeopathic and hakeem medications, home remedies, taveez but none of them was proved useful. Most of the caregivers did not give free comments. 5% admitted that they don't have enough knowledge about disease and they emphasized on conduction of countrywide educational programs to provide knowledge on various aspects of the disease.



Frequency of acute exacerbations and use of controller medications



Seasonal distribution of asthma

Food	No. of caregivers	Food	No. of caregivers
Cold Drinks	24	Yogurt	01
Oily Foods	14	Egg	03
Fast Foods	01	None	20
Rice	07	Multiple	30

Caregivers response about food as a triggering factor of asthma

DISCUSSION

The results of our study showed that caregivers of asthmatic children still lack adequate knowledge about asthma and have many misconceptions regarding disease and its treatment. This study was conducted in Islamabad where there is continuous rise in number of asthmatic patient and a better educational level is expected but level of awareness regarding asthma is no better than what we obtained from previous study conducted in same setting¹⁷.

Our study found a positive family history of asthma, eczema or atopy in 61% of the patients which is quite high. This is similar to the findings of a cross sectional study conducted in Lahore where positive family history of asthma was found in 66% and other allergic conditions in 86% of study population¹⁷.

Association of asthma with breast feeding has been evaluated in many studies conducted previously. In some studies breast feeding was found to be protective against asthma^{18,19} while in other studies conducted in Canada and Turkey, no conclusive evidence of protective effect of breast feeding on development of asthma was found^{20,21}. In our study, a significant number of asthmatic patients (77%) were exclusive breast

feed for 6 months indicating that breast feeding does not seem to protect from development of asthma.

Quite significant study population 95% was vaccinated but awareness of annual influenza vaccine which improve outcome of asthma is very poor.

A significant finding of our study was ignorance and under use of controller medications. Only 39% of patients were found to be on some preventive medications. Even some have >5 acute exacerbations per year and they are not on any controller medication. Awareness of these medications among caregivers is also low. Only 20% know about these. Even if the child is on preventive medications, still 25% of carers don't have a concept of these medications. A similar study conducted in India found that parents hesitate to use long term controller medication in symptom free period because they perceive asthma as a series of acute episodes rather than a chronic disease¹³.

Socioeconomic status of the caregivers was also very poor. Considering the high monthly cost of treatment, it was beyond the range of affordability by almost half of study population. Coming to carer's perception of asthma, it is not very encouraging that 24% of caregivers don't know that their child has asthma. Even when the child has been labeled as asthmatic for >One year and he/she gets >5 acute exacerbations/year. This indicates poor physician-caregiver's communication. Similar situation was seen in India where two third of asthmatic population was ignorant of diagnosis of asthma. Perception of etiology is a little better as 67% of caregivers recognized it to be allergic in origin. Another encouraging factor is that only 4% caregivers think that asthma is a contagious disease although in previous study conducted in 2002, 37%¹⁷ and in another 26%¹³ caregivers thought that asthma can spread from person to person and this stigma can cause considerable social and psychological impact on child's growth. Recognition of asthma as familial disorder is also improving. In our study

47% of caregivers identified asthma as a familial disorder. While previous response was 19%¹⁷.

Considering the perception of precipitating factor there is not much difference than previous information. Our study found that 30% of carers deprive the child of multiple healthy nutritious foods considering them as precipitating factor for asthma. Cold drink was the most common dietary item which was perceived as triggerer for asthma. This observation is similar to what we obtained from other studies which also identified sweets, chocolate and fruits as triggering factor for asthma^{13,14}. URTI was the most common precipitating factor identified by caregivers in our study which was recognized by 80% of them which is almost same as identified previously¹⁷. Out of other precipitating factors, mites and furry pets were poorly recognized risk factors (25% and 28% respectively) by our study population though other studies have identified furry pets as significant risk factor for asthma¹⁵.

Most alarming and frightening factor is that we found extremely poor awareness of aerosol therapy among caregivers which is cornerstone of asthma treatment. Half of the study population was ignorant of aerosol therapy. Out of rest only 26% carers preferred it. 10% of caregivers think that aerosol therapy is harmful or addictive. Similar report was obtained from neighboring country where 47% of study population was unaware of inhaler therapy and only 13% was using it¹³. and in another study only 18% of the patients were using inhaled corticosteroids²² which is first line therapy for persistent asthma. Misconceptions and myths about aerosol therapy are increasing in general population because in our previous study 82% of the caregivers felt that inhaler therapy was superior to oral therapy¹⁷. These misconceptions need to be clarified as asthma control cannot be achieved in many cases without aerosol therapy.

Concept of home treatment of asthma is also not established. 40% of caregivers do not keep any medications for asthma at their homes. Reliever medications are also underused. Main reliance is on antiallergy syrups which are not much

beneficial in relieving bronchospasm; these practices are similar to those identified in other studies²³.

All these factors can be the result of our low educational level, careless attitude and poor socioeconomic status.

CONCLUSIONS

Summarizing all, our study brought out following important findings:

1. Asthma is being poorly managed either by physicians or by caregivers or both. A large number of asthmatic patients of our study were found to have frequent exacerbations.
2. Awareness about etiology of asthma has improved since most of the patients recognized allergic origin of asthma.
3. Prevalence of stigma that asthma can spread from person to person has decreased and less number of caregivers blame asthma to be contagious.
4. There is underutilization of controller as well as reliever medicines and more reliance is on cough suppressants.
5. There is significant unawareness and misconceptions regarding aerosol therapy.
6. A large number of study population was found to avoid multiple nutritious foods for a blame of triggering factor for asthma.
7. Awareness of EPI is encouraging and majority of study population was found vaccinated according to EPI.

In conclusion, information about asthma has not been percolated enough towards parents of asthmatic children. Misconceptions about disease and paucity of information about current trends in management among parents are a significant finding. Asthma management is incomplete without a good tailored patient and caregiver's education programs and such programs should be able to augment health education and eliminate misconceptions and stigma in community regarding asthma. Various

tools for conveying health education to community are media, nongovernmental organizations and health workers, and frequent reminders in the form of newsletters. Moreover studies on mass levels for better interpretation are suggested.

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