Barriers in the management of asthma and attitudes towards complementary medicine

V. SINGH, H. V. SINHA AND R. GUPTA

Pulmonary Division, Department of Medicine, SMS Medical College, Jaipur, India

Abstract  Background: Under-treatment is said to be an important problem for those with asthma. Misconceptions regarding the nature and treatment of asthma may contribute to this. This study was planned to evaluate the perception of those with asthma about various aspects of their condition. Methods: A total of 1012 patients with asthma volunteered to complete the questionnaire. Questions included those regarding severity, nature, regularity of use of medicine and attitudes towards trying complementary medicine. Forced expiratory volume in 1 s (FEV1) was measured to assess the severity of airway obstruction. Results: Only 9% of patients took treatment for asthma according to the advice of the doctor. The remainder reported stopping treatment when they became free of symptoms or were able to tolerate their symptoms. A majority of the patients had moderately severe airway obstruction as determined by spirometer and reported being unable to assess the severity of their disease with only 11.9% reporting that they could perceive the warning symptoms of an acute attack. Seventy-nine percent of the patients had used complementary medicine. Home remedies, such as tea, hot water, walking, ginger and turmeric, were perceived to provide relief in asthma. Conclusion: Patients with asthma have many barriers in the way of optimal treatment. These include a failure to recognize warning symptoms, belief in a permanent cure; not continuing treatment for as long as needed; and, an inclination to seek complementary medicines.

INTRODUCTION

Asthma is a common condition affecting 15–20 million people in India (1). It is an important cause of morbidity and causes 148 000 deaths annually (2). Though the exact factors responsible for it are not clearly known, under-treatment has been suggested to be an important problem in the management of asthma. In our study in India, only 10% of the patients were using inhaled therapy and use of preventive treatment was even less (3). Various cultural misconceptions regarding the nature and treatment of the disease may be contributing to this problem and many patients seek complementary medicines. This study was planned to evaluate the perception of patients with asthma regarding various aspects of the disease.

METHODS

Names and addresses of patients attending the asthma clinic were obtained from the clinic register. Letters were sent to them with a request for their participation in the project. Two reminders were sent to the non-responsive patients. In all, 1012 (62%) patients responded and gave informed consent and were included in this study. All were diagnosed according to the criteria of the American Thoracic Society (4). Questionnaires were completed by the patients themselves or with assistance from a health worker. Forced expiratory volume in 1 s (FEV1) was determined with “Medspiror” spirometer and was expressed as a percentage of the predicted FEV1.

Preparation of questionnaire

The aim of the study was to identify potential problems in the behavior of patients. To aid in this, an initial study was carried out in 50 new patients attending the asthma clinic. The questions were designed to elicit spontaneous comments. Based on the answers to the initial questionnaire, the questions with predictable replies were formatted as multiple choice answers. These were then used in the main study. The question of severity of asthma were based on four questions used in an earlier study (5). One question, “Apart from medicine what provides you relief during an
attack of breathing trouble?” remained open ended. The percentages of positive replies were recorded.

**Statistical method**

Comparison of proportion between pairs of groups was done by chi-square test. Percentage in positive responders was compared with percentage of negative responders, using two-sample t-test.

**RESULTS**

A total of 1012 patients replied to all the questions. These included 401 males, 396 females and 215 children (mean age 28.5±12.3 years). According to the patients’ perception, the clinical state of the disease was stable in 891 (87%). Four hundred and thirty-nine (43.4%) of the patients were prescribed inhalers while 382 (37.8%) were advised to take oral medicines (Table 1). Symptoms reported by the patients are described in Table 2. Only 155 (15.3%) knew that asthma is a controllable but not curable disease while 857 (84.7%) expected a complete cure or were ignorant about the likely long-term nature of their condition (Fig. 1).

Only 120 (11.9%) of the patients were able to perceive warning signals before an attack of asthma (Fig. 2), and wheeze and chest tightness were the most frequently perceived warning symptoms. Cough, wheeze and breathlessness were the most frequently reported symptoms (Fig. 3). Chest tightness was reported by only 153 (15.1%) patients.

In response to the question regarding the regularity of the taking of medicines, results showed that only 91 (9%) were taking continuous regular treatment (Fig. 4). After an attack of asthma, a majority of patients stopped treatment when they became asymptomatic or the symptoms became tolerable. Only 93 (9.2%) stopped therapy on the advice of their doctor (Fig. 5). In the sample, 670 (66.2%) of the patients had asthma more severe than mild persistent, since the symptoms were occurring more frequently than once a week (Table 2); 489 (48.3%) of the patients had FEV1 less than 60% of the predicted. (Fig. 6).

With regard to the differential use of oral and inhaled medication, there was variation in acceptance in children, and between males and females. Inhalers were preferred by 103 (48%) children and 152 (38%) males, while only 28 (7%) females chose inhalers (Fig. 7). Among children, 63 (58.8%) boys and 40 (40%) girls preferred inhalers to tablet therapy.

Regarding the type of therapy, 972 (96%) had taken modern medicines, while 799 (79%) had tried complementary medicine. Among the complementary therapies reported to have been used, ayurved (traditional Indian system of medicines mainly herbal), homeopathy and yoga were used by 335 (33%), 334 (33%) and 213 (21%) patients, respectively. A majority of participants reported relief through modern medicines and yoga, while some found relief from other types of complementary therapies (Fig. 8).

**Table 1.** Characteristics of the patients (n=1012)

<table>
<thead>
<tr>
<th>Asthma control: patient’s perception</th>
<th>Number of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled</td>
<td>891 (87)</td>
</tr>
<tr>
<td>Not controlled</td>
<td>121 (13)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prescribed therapy of the subjects</th>
<th>Number of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>382 (37.8)</td>
</tr>
<tr>
<td>Oral with inhaler</td>
<td>191 (18.8)</td>
</tr>
<tr>
<td>Inhaler</td>
<td>439 (43.4)</td>
</tr>
</tbody>
</table>

**Table 2.** Frequency of asthma symptoms in the subjects

<table>
<thead>
<tr>
<th>Frequency of symptoms</th>
<th>Number of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>88 (8.7)</td>
</tr>
<tr>
<td>On most days of a week</td>
<td>207 (20)</td>
</tr>
<tr>
<td>Once or twice a week</td>
<td>375 (37)</td>
</tr>
<tr>
<td>Once or twice a month</td>
<td>113 (11)</td>
</tr>
<tr>
<td>Less than once a month</td>
<td>95 (9.4)</td>
</tr>
<tr>
<td>Not at all</td>
<td>134 (13.2)</td>
</tr>
</tbody>
</table>

**Fig. 1.**

**Fig. 2.**
As many as 506 (50%) people reported being better in the day time. At the time of an attack, many people tried to find relief by using simple home remedies, or change in lifestyle. Hot substances, especially tea, were reported to have provided relief by 479 (47.3%) subjects. Ginger, Turmeric, sugar crystals, cloves and light meals were reported to be useful. Activity was reported to provide relief by some individuals. Rest and sitting appeared beneficial to some, while others got relief with walking (Table 3).

**DISCUSSION**

Nearly two-thirds of the patients had been advised to use inhaled drugs, compared with only 10% of patients in an earlier study in India (3). This suggests increasing prescriptions of inhaled drugs for the management of asthma in India. Asthma is a controllable disease but it cannot be cured (6). Remissions, spontaneously or after therapy—sometimes for a prolonged period—are
common characteristic features of asthma. This fact was known to only 15.3% of the patients. The rest had expectations of a permanent cure. The “Sick again and well again” cycle in the background of expectation of permanent cure may add to a patient’s stress. On recurrence of asthma, such patients may stop regular treatment and switch over to less scientific therapies but with unsubstantiated claims of a permanent cure.

Many people believe that therapies like yoga, homeopathy and Ayurveda do not provide immediate relief but can cure asthma, provided one takes the therapy for a long period and with strict dietary restrictions. Some studies have observed beneficial effects of complementary therapies, especially yoga (7–10). Failure to obtain a cure may motivate a patient to search for magic cures as claimed for many complementary therapies. This leads to noncompliance with regular treatment of asthma. In the present study, 79% of those with asthma had tried complementary medicines in the hope of a permanent cure. Though a majority of the users did obtain relief, a minority reported relief with complementary medicine, especially with the use of yoga. This emphasizes the need for evaluation of these therapies in proper controlled trials.

Eighty-eight percent of patients were unaware of signs and symptoms suggesting severe asthma, and were ignorant of the fact that asthma can lead to hospitalization or even death. The prevalence of asthma is increasing and the condition is now an important cause of morbidity and mortality (11–12). This emphasizes the need for proper education of patients (13). Perception of warning signals and taking treatment according to a written personalized asthma action plan, can reduce risk of death from asthma (14). Systematic review of randomized controlled trials shows that written asthma management plans result in significant reduction in hospitalization (15). Therefore, proper education is as important as asthma therapy in the avoidance of severe attacks of asthma.

The reported severity of symptoms in this study suggested that 65% of the patients were having asthma at least as severe as the mild persistent category. This was corroborated by the FEV1 data. According to guidelines, all such patients should take regular preventive therapy (16). However, only 9% of our sample of Indians with asthma were taking regular treatment and the rest took it only at the time of acute exacerbations of asthma. More than 90% stopped treatment without advice of a doctor when they became asymptomatic or were able to tolerate the symptoms. Thus, gross under-treatment appears to be a basic problem in management of asthma. What are the consequences of such under-treatment? Under-treated patients may develop permanent occlusive changes in the airways (17–19) and this may explain the fact that despite a stable condition, moderate airflow obstruction was observed in a majority of the subjects.

Regarding the choice of therapy between oral and inhaler, a majority of the patients preferred oral medicine despite the superiority of inhalers. This preference has been shown by other workers (20). There was greater acceptance of inhalers by children, but in females the acceptance rate was only 7%. The explanation for this probably lies in social beliefs. Indian society is a male-dominated society and asthma is considered a big stigma and a barrier with regard to marriage prospects, especially for females. Therefore, females usually conceal the diagnosis and treatment of asthma. Since an inhaler is obvious from even a distance, and as it cannot be used in a concealed way, it is not the preferred therapy among females. Results among children show that 40% female and 55% male children preferred inhalers. This may demonstrate an emerging trend of increasing acceptance of inhalers amongst the future generation but it is possible that amongst females stigmatization only occurs around the age of marriage.

Can patients get relief in asthma even without taking medicines?

Since ancient times, many non-pharmacological remedies have been known to improve asthma (21). Certain foods are still believed to be effective and are used frequently by many patients with asthma at the time of an

### Table 3. Apart from medicine what provides you relief during attack of breathing trouble?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Day time</td>
<td>506</td>
<td>50***</td>
</tr>
<tr>
<td>2. Hot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot tea</td>
<td>479</td>
<td>47.3*</td>
</tr>
<tr>
<td>Water</td>
<td>170</td>
<td>16.8*</td>
</tr>
<tr>
<td>Meals</td>
<td>77</td>
<td>7.6</td>
</tr>
<tr>
<td>Saline gargles</td>
<td>61</td>
<td>6.0</td>
</tr>
<tr>
<td>Fomentation</td>
<td>26</td>
<td>2.6</td>
</tr>
<tr>
<td>Environment</td>
<td>26</td>
<td>2.6</td>
</tr>
<tr>
<td>Bath or putting legs in hot water</td>
<td>13</td>
<td>1.3</td>
</tr>
<tr>
<td>3. Edibles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ginger</td>
<td>71</td>
<td>7.0**</td>
</tr>
<tr>
<td>Turmeric</td>
<td>64</td>
<td>6.3*</td>
</tr>
<tr>
<td>Light meals</td>
<td>36</td>
<td>3.6*</td>
</tr>
<tr>
<td>Sugar crystals</td>
<td>34</td>
<td>3.4</td>
</tr>
<tr>
<td>Clove</td>
<td>21</td>
<td>2.1</td>
</tr>
<tr>
<td>Long Pepper (Piper longum)</td>
<td>12</td>
<td>1.2</td>
</tr>
<tr>
<td>4. Rest</td>
<td>121</td>
<td>12.7**</td>
</tr>
<tr>
<td>5. Sitting</td>
<td>66</td>
<td>6.5</td>
</tr>
<tr>
<td>6. Walking</td>
<td>46</td>
<td>4.5</td>
</tr>
<tr>
<td>7. Breath in fresh air</td>
<td>26</td>
<td>2.6</td>
</tr>
<tr>
<td>8. Miscellaneous</td>
<td>111</td>
<td>11.0</td>
</tr>
</tbody>
</table>

n=1012

The last column is percentage in positive responders to each triggers compared to percentage in negative responders by chi-square test.

*P < 0.05.

**P < 0.01.

***P < 0.001.
attack, though these are not recommended in various
global guidelines. However, in India, a large number of
subjects with asthma use these as remedial measures.
Hot meals, avoidance of heavy meals especially during
nights, and edibles such as ginger, turmeric, cloves and
long pepper (Piper longum) were found useful by some
people. Rest and walking gave relief to many patients.
How these substances provided relief is not known and
it is a matter of further study.

It can be concluded that optimal care of patients with
asthma in India has many barriers. Inability to recognize
warning signals, belief in a permanent cure for asthma,
preference to getting treatment only at the time of an
asthma attack, aversion to inhaled therapy and inclination
towards complementary therapies are some of the
barriers to optimal asthma management in India. These
result in under-treatment with resulting moderate air-
flow obstruction in a majority of subjects.

REFERENCES
1. World Health Organisation Fact sheet. Bronchial asthma. The Ind J
2. Ravindran P. Epidemiology of asthma with special reference to
3. Chowgule RV, Shetye V, Parmar JR, Bhosale AM, Khandagale MR,
Phalnikar SV, Gupta PC. Prevalence of respiratory symptoms,
bronchial hyperreactivity, and asthma in a Megacity. Am J Respir Crit
4. American Thoracic Society. Standards for diagnosis and care of
patients of chronic obstructive pulmonary disease (COPD) and
asthma, Am Rev Respir Dis 1987; 136: 225–244.
from asthma patients: a trial of information feedback in primary
6. Godden DJ, Ross S, Abdalla M. Outcome of wheeze in childhood-
symptoms and pulmonary function 25 year later. Am J Respir Crit
Care Med 1994; 149: 106–112.
8. Nagendra HR, Nagarathna R. An integrated approach of yoga
therapy for bronchial asthma: a 3-54 month prospective study. J Asthma
1986; 23: 123–137.
breathing exercises (Pranayama) on airway reactivity in subjects
10. Singh V. Kunjal: a nonspecific protective factor in management
12. Jackson GP. Asthma mortality by neighbourhood of domicile. NJ
characteristics of patients with severe life threatening
asthma: comparison with asthma deaths. Thorax 1993; 48:
1105–1109.
14. Abramson MJ, Bailey MJ, Couper FJ, Driver JS, Dummer OH,
Forbes AB, McNeil JJ, Walters EH and Victorian Asthma mortality
study group. Are asthma medication and management related to
deaths from asthma? Am J Resp Crit Care Med 2001; 163:
12–18.
15. Gibson PG, Coughlan J, Wison AJ, Abramson M, Bauman A,
Hensley MJ, Walters EH. Self-management education and regular
practitioner review for adults with asthma (Cochrane Review). In:
1999.
NIH publication 1995; 96–3659A:19
17. Ulrik CS, Backer V, Dirksen A. 10 year followup of 180 adults with
bronchial asthma:factors important in decline in lung function.
18. Redington AE, Howarth PH. Airway wall remodelling in asthma.
Thorax 1997; 52: 31012.
2:130–133.
20. Kelloway JS, Wyatt RA, Adis SA. Comparison of patient’s
compliance with prescribed oral and inhaled asthma medication.

QUESTIONNAIRE

Please answer all the questions by ticking one box only. Which of the following statements describe your chest condition best:

Q1. My chest trouble can be cured for ever

- Yes
- Probably yes
- Controlled but can not be cured

Q2. I feel symptoms just before an attack of chest trouble

- Yes
- No
- Did not pay attention

Q 3. I take medicines for chest trouble

- Regularly (according to advice of doctor)
- On having breathing trouble

Q4. I stop medicines for my chest trouble

- When do not feel chest trouble
- Able to tolerate chest trouble
- After advice of doctor
Q5. For chest trouble I want to take
  ● Oral medicines
  ● Inhaler medicines
Q6. During last one month my chest trouble is
  ● Controlled
  ● Not controlled
Q7. During the last six months I have had attacks of breathlessness/wheezing/night waking/cough
  ● Every day
  ● On most days of a week
  ● Once or twice a week
  ● Once or twice a month
  ● Less than once a month
  ● Not at all
Please answer the questions by ticking the appropriate boxes. Which of the following statements describe your chest trouble best:
Q8 I feel following symptoms at the time of attack of chest trouble
  ● Wheezing
  ● Breathlessness
  ● Night waking
  ● Cough
  ● Sputum
  ● Spirals in sputum
  ● Chest tightness
  ● Palpitation
  ● Headache
  ● Suffocation
Q9 Following therapy provided relief in my chest trouble
  ● Allopathy (Modern medicine) Yes No
  ● Ayurvedic medicines Yes No
  ● Homeopathy Yes No
  ● Yoga Yes No
  ● Acupuncture Yes No
  ● Fish Yes No
Q10 Apart from medicines what provide you relief in asthma?