

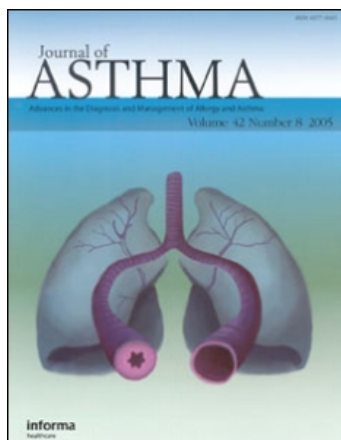
This article was downloaded by: [Uppsala University Library]

On: 21 April 2009

Access details: Access Details: [subscription number 786945401]

Publisher Informa Healthcare

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Asthma

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713597262>

Is There Any Difference in the Use of Complementary and Alternative Therapies in Patients Asthma and COPD? A Cross-Sectional Survey

Emine Argüder ^a; Sevim Bavbek ^b; Elif en ^c; Kenan Köse ^d; Özlem Keskin ^b; Sevgi Saryal ^c; Zeynep Misirligil ^b

^a Department of Chest Diseases, Bayindir Hospital, ^b Department of Allergy, School of Medicine, Ankara University, ^c Department of Chest Diseases, School of Medicine, Ankara University, ^d Department of Biostatistics, School of Medicine, Ankara University,

Online Publication Date: 01 April 2009

To cite this Article Argüder, Emine, Bavbek, Sevim, en, Elif, Köse, Kenan, Keskin, Özlem, Saryal, Sevgi and Misirligil, Zeynep(2009)'Is There Any Difference in the Use of Complementary and Alternative Therapies in Patients Asthma and COPD? A Cross-Sectional Survey', *Journal of Asthma*, 46:3, 252 — 258

To link to this Article: DOI: 10.1080/02770900802647524

URL: <http://dx.doi.org/10.1080/02770900802647524>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

ORIGINAL ARTICLE

Is There Any Difference in the Use of Complementary and Alternative Therapies in Patients Asthma and COPD? A Cross-Sectional Survey

EMINE ARGÜDER, M.D.,¹ SEVİM BAVBEK, M.D.,^{2,*} ELİF ŞEN, M.D.,³ KENAN KÖSE, PH.D.,⁴ ÖZLEM KESKİN, M.D.,²
SEVGİ SARYAL, M.D.,³ AND ZEYNEP MISIRLIGİL, M.D.²

¹Department of Chest Diseases, Bayındır Hospital

²Department of Allergy, School of Medicine, Ankara University

³Department of Chest Diseases, School of Medicine, Ankara University

⁴Department of Biostatistics, School of Medicine, Ankara University

Background. Data on the use and efficacy of complementary and alternative medicine (CAM) in patients with asthma are limited, and there is a lack of studies documenting the use of CAM in patients with chronic obstructive pulmonary disease (COPD) in Turkey. **Aim.** To determine the prevalence of CAM usage in patients with asthma and COPD and to assess the clinical and demographic factors associated with the use of CAM. **Materials and methods.** A total of 521 patients (313 with asthma and 208 with COPD) were randomly enrolled into this cross-sectional survey. A face-to-face interview was conducted using a structured questionnaire. **Results.** One hundred sixty-three patients (52%) with asthma and 70 patients (33%) with COPD were reported to be using some form of CAM ($p < 0.001$). The most popular modalities were herbal remedies (46% and 28% in the two groups, respectively) and animal products (28% and 5% in the two groups, respectively). CAM-practicing asthma patients were typically younger with longer duration of disease and higher income than the CAM-practicing COPD patients. For the patients, the main source of information on CAM practices was their relatives and friends. Only a small number of the patients consulted with their physicians about CAM. The main reasons to use CAM for patients with asthma and COPD were harmlessness and symptomatic relief, respectively. CAM-related adverse effects and difficulties to obtain CAM were significantly higher in patients with asthma than in patients with COPD. **Conclusion.** There is a high prevalence of CAM usage in patients with asthma and COPD in Turkey. Hence, becoming familiar with CAM therapy and inquiring about patient practice of CAM as part of the routine medical history will allow the physicians to provide reliable information to their patients on these medical practices.

Keywords Asthma, COPD, complementary therapy, alternative therapy

INTRODUCTION

Complementary and alternative medicine (CAM) has been defined as a group of diverse medical and health care systems, practices, and products that are not presently considered to be a part of conventional medicine. There are five main categories, with some overlap, that fall under CAM practice such as alternative medical systems, biologically based practices, energy therapies, manipulative and body-based methods, and mind-body medicine (1). The usage of CAM is increasing substantially in both developed and developing countries (2–4). The practice of CAM varies among cultures according to beliefs, religions, lifestyles, and probably specific herbs that grow in certain geographic areas. In Turkey, a country with strong traditions and cultural preferences, it is not surprising to find a high prevalence of CAM usage. However, the usage of CAM in Turkey has been subject of only few studies. The results of these studies indicate that prevalence of CAM practice ranges between 38% to 70% in patients with chronic diseases, varying due to geographic and sociodemographic features of the study groups. These figures are not drastically different from world-wide usage of CAM (5–8).

Chronic obstructive pulmonary diseases (COPD) and asthma are similar respiratory disorders in that they are chronic and characterized with decreased air flow. However, there are key differences between what causes them in terms of genetic, environmental or infectious origin, and the contribution of emotional status and nutrition. The aim of current conventional treatments for asthma and COPD is not directed to the different causes that lead to them, but to control the disease by using various bronchodilator and anti-inflammatory drugs. Unfortunately, COPD is less likely to respond to available treatments than asthma (9–11).

Patients with severe, but not life-threatening disease are generally interested in seeking help from CAM (1). Although patients with asthma and COPD show interest in the use of CAM, the available data on this are limited (2, 12–14). Only seven studies on the adult population with asthma have been found in the English literature, and the majority of these studies were conducted in Europe, the United States, and Australia (15, 16). The literature for the use of CAM in COPD is even more limited (2, 14). While asthma and COPD are quite common in Turkey with a 3% to 5% prevalence of physician-diagnosed asthma (17, 18) and 10% to 14% prevalence of physician-diagnosed COPD (19, 20) among the adult population, only two studies, one in children and the other in adults, evaluated the prevalence and types of CAM in patients with asthma in Turkey. According to these studies, almost half of the adults or children with asthma used some form of CAM (21, 22). However, there is

*Corresponding author: Prof. Dr. Sevim Bavbek, Department of Allergy, Ankara University, School of Medicine, Cebeci, Ankara, Turkey; E-mail: bavbek@medicine.ankara.edu.tr

no published study in any peer-reviewed journals about the usage of CAM in patients with COPD in Turkey. Therefore, in this study we aimed to determine the prevalence and types of CAM practice and to assess the clinical and demographic factors that lead to the usage of CAM among Turkish patients with asthma and COPD. Despite the similar daily symptoms endured by patients who have these diseases, we postulated that the long-term clinical outcome and response to available treatments would influence patient decision to incorporate CAM practices to their therapy.

METHODS

Study Population

The study was conducted in Ankara University, Medical School, Departments of Chest and Allergic Diseases. A total of 313 adults with asthma and 208 adults with COPD were randomly enrolled into the study. The study population included patients from all regions of Turkey. These patients were on regular follow-up and had complete health care coverage. Asthma patients were diagnosed clinically by the presence of recurrent symptoms, such as wheezing, shortness of breath, cough, and objective signs of reversible airway obstruction as stated by recent guidelines (23). Patients with COPD were diagnosed according to GOLD criteria (24). Severities of both diseases were classified as mild, intermittent/mild persistent, moderate persistent, and severe/very severe by their physicians on the basis of current International Guidelines (23, 24). The responders were assured of the voluntary nature of the survey and the confidentiality of their responses and all provided verbal informed consent.

Questionnaire

A face-to-face interview was performed by the specialist who conducted follow-up with the patient. Patients with COPD were recruited from the Department of Chest Diseases, and patients with asthma were recruited from the Department of Allergy. A specifically designed questionnaire was used to evaluate the prevalence, types, and patterns of CAM in both diseases (Appendix 1). The questionnaire was developed by the authors and used in a previous study (22). It consisted of questions about the patients' demographics including age, gender, educational status, monthly family income (it was then converted to the Euro, which was calculated using September 2006 exchange rates), status of being inpatient or outpatient, the duration of disease, prescribed medications, emergency room visits, hospitalizations, and presence of comorbid diseases. Additional items concerning reasons for using or not using CAM therapy, personal opinions on the potential efficacy and side effects of CAM, and their compliance to pharmacological treatment while they were using CAM were also included. To facilitate discussion on their practice of CAM, if any, a list of different types of CAM practices was also offered.

Atopy Diagnosis

Skin prick test, serum levels of specific immunoglobulin E (IgE), and history related with atopy were used to confirm the diagnosis of atopy. Allergen extracts along to appropriate positive (histamine: 10 mg/mL) and negative (saline) controls

were applied on the forearm using the prick technique. Prick test response to common aeroallergens (a wheal size ≥ 3 mm), *Dermatophagoides pteronyssinus*, *D. farinae*, a mixture of grass pollens, a mixture of weed pollens, a mixture of tree pollens, a mixture of cereal pollens, a mixture of molds, and animal epithelia (cat and dog) was considered positive.

Statistical Analysis

Comparisons between patients with COPD and patients with asthma, as well as comparisons between CAM used by patients with COPD and asthmatic patients were performed. Statistical analysis was initially made within two groups, all COPD and asthma patients, and then data were compared between CAM using COPD and asthma patients. SPSS statistical software for Windows, version 11.5 (Chicago, IL), was used for statistical analysis. Results were expressed as mean $\pm$ SD (standard deviation). For categorical data, the Chi-square test and Fisher-Exact test were used to compare the difference between asthma and COPD. For continuous data, the *t* test for independent samples and Mann-Whitney U test were used; $p < 0.05$ was considered statistically significant.

RESULTS

Study Groups

A total of 521 patients were included in the study conducted between November 2004 and September 2006. The majority of patients were recruited from an outpatients' clinic. Baseline demographic findings and clinical characteristics of the study groups have been shown in Table 1. The mean $\pm$ SD (median) age of patients with asthma and COPD

TABLE 1.—Demographic and clinical characteristics of the study groups.

	Asthma (n = 313)	COPD (n = 208)	p value
Age (yrs) [mean $\pm$ SD] (median)	46.31 $\pm$ 12.85 (45.00)	64.89 $\pm$ 9.44 (65.00)	<0.01
Gender, n, female/male	254/59	28/180	<0.001
(%) female/male	81.2/18.8	13.5/86.5	<0.001
Duration of disease (yrs) [mean $\pm$ SD] (median)	11.42 $\pm$ 10.27(8.00)	8.55 $\pm$ 6.63(7.00)	<0.05
Outpatient/inpatient, n (%)	211/102 67.4/ 32.6	150/58 72.1/ 27.9	>0.05
Educational status, n (%)			
Never	30 (9.6)	24 (11.5)	
1–8 year	137 (43.8)	121 (58.2)	
9–11 year	66 (21.1)	41 (19.7)	>0.05
>11 year	80 (25.5)	22 (10.6)	
Monthly income (Euro) [mean $\pm$ SD] (median)	557 $\pm$ 496 (395)	379 $\pm$ 224 (310)	<0.001
Severity of the diseases, n (%)			
Mild intermittent /mild	68 (21.7)	3 (1.5)	
Mild persistent /moderate	145 (46.3)	56 (27.2)	
Moderate /severe	87 (27.8)	89 (43.2)	<0.001
Severe/Very severe	13 (4.2)	58 (28.1)	
Pleasure from current therapy, n (%)	301 (96.16)	200 (96.15)	>0.05
Regular use of prescription medication, n (%)	278 (88.81)	192 (92.30)	>0.05
Hospitalizations with exacerbation, n (%)	101 (32.26)	86 (41.34)	<0.05
Prevalence of use of CAM, n (%)	163 (52.07)	70 (33.65)	<0.001

TABLE 2.—Demographic and clinical factors associated with CAM usage in patients with asthma and COPD.

	CAM user asthmatics (n = 163)	CAM user COPD pts (n = 70)	p value
Age (yrs), [mean $\pm$ SD] (median)	47.36 $\pm$ 12.39	63.32 $\pm$ 9.56	<0.01
Gender n, female/male, (%) female/male	127/36 77.9/22.1	15/55 21.4/78.6	<0.001
Duration of disease (yrs) [mean $\pm$ SD] (median)	11.81 $\pm$ 5.81 (9)	8.41 $\pm$ 5.81 (7.5)	<0.01
Outpatient/inpatient, n (%)	97/66 59.5/40.5	51/19 72.9/27.1	=0.052
Educational level, n (%)			
Never (%)	19 (11.7)	7 (10)	p > 0.05
1–8 year (%)	76 (46.6)	40 (57.1)	
9–11 year (%)	30 (18.4)	15 (21.4)	
>11 year (%)	38 (23.3)	8 (11.4)	
Monthly income (Euro) [mean $\pm$ SD] (median)	514.76 $\pm$ 483 (370)	342.66 $\pm$ 142 (280)	<0.01
Severity of the diseases, n (%)			
Mild intermittent/mild	26 (16)	1 (1.5)	<0.001
Mild persistent/moderate	72 (44.2)	13 (18.6)	
Moderate/severe	55 (33.7)	29 (41.4)	
Severe/very severe	10 (6.1)	27 (38.6)	
Satisfaction from current therapy, n (%)	156 (95.7)	66 (94.3)	>0.05
Regular use of prescribed medication, n (%)	146 (89.6)	66 (94.3)	>0.05
Hospitalization rate with exacerbation, n (%)	66 (40.5)	35 (47.1)	>0.05
Type of CAM used			
Herbal, n (%)	146 (46.6)	60 (28.8)	<0.05
Animal, n (%)	88 (28.1)	10 (4.8)	<0.001
Spieleotherapy, n (%)	24 (7.7)	2 (1.0)	<0.05
Others, n (%)	18 (5.8)	4 (1.9)	>0.05
Duration of the use of CAM (month) [mean $\pm$ SD] (median)	8.71 $\pm$ 17.00 (2.00)	8.79 $\pm$ 17.58 (2.00)	>0.05
Discontinuation of drugs during CAM use, n (%)	29 (17.9)	6 (8.8)	>0.05
Adverse effect of CAM (%)	35 (21.6)	6 (7.4)	<0.01
Consult the physician for CAM n (%)	23 (14.2)	7 (10.4)	>0.05
Difficulty to reach CAM n (%)	34 (21.0)	3 (4.4)	<0.01

were 46.31 ± 12.85 (45) and 64.89 ± 9.44 (65) years ($p < 0.01$), respectively. While there was a female predominance (81.2%) in patients with asthma, males were predominant (86.5%) in COPD group. The mean $\pm$ SD (median) duration of disease in patients with asthma and COPD was 11.42 ± 10.27 (8) and 8.55 ± 6.63 (7) years, respectively ($p < 0.05$), with significantly longer duration of the disease in asthmatics. Educational levels of patients in both groups were not statistically different ($p > 0.05$) with the majority of patients in both groups being below high school level (53.4% vs. 69.7% of asthma and COPD patients, respectively). While disease severity was classified as mild intermittent, mild persistent, moderate, and severe in 21.7%, 46.3%, 27.8%, and 4.2% of patients with asthma, respectively, 1.5%, 27.2%, 43.2%, and 28.1% of the patients were classified as having mild, moderate, severe, and very severe disease, respectively, in the COPD group. A total of 88.8% of asthma patients and 92.3% of COPD patients reported regular use of prescribed medications, and almost all patients in both groups reported satisfaction with their current drug therapy. The rate of hospitalization in the previous year was significantly less among patients with asthma (32.2%) than patients with COPD (41.3%) ($p < 0.05$), and asthma patients had better pulmonary functions test results ($p < 0.001$). Nearly half of the patients (45.7%) were defined as atopic according to the positivity on skin prick test. However, atopic status was not evaluated in patients with COPD.

There was no statistical difference in terms of the total prevalence of comorbid diseases in both diseases (52.1% vs. 50.0% of asthma and COPD patients, respectively) but upper respiratory tract disease in asthma (39.2%) and cardiovascular disease in COPD groups (64.2%) showed discrepancy according to proportional distribution within two groups ($p < 0.001$).

Comparison of Asthmatic CAM Users or Nonusers

The mean age, gender, educational level, atopic status, duration of the disease, and presence of additional diseases were not different in CAM users and nonusers ($p > 0.05$). However, asthma patients who used CAM reported lower levels of monthly family income and higher rates of hospitalization than patients who did not use CAM ($p < 0.01$).

Comparison of CAM User or Nonuser COPD Patients

The mean age, educational level, monthly income, duration of the disease, presence of additional disease, and rate of hospitalization were not different in patients who used or did not use CAM ($p > 0.05$). However, males were predominant among COPD patients who did not use CAM ($p < 0.05$).

Comparison of CAM users with Asthma and COPD

A total of 163 patients (52.07%) with asthma and 70 patients with COPD (33.65%) reported at least one type of CAM usage during their illness. The overall use of at least one type of CAM was significantly higher in patients with asthma than in patients with COPD (52.07% vs. 33.65%; $p < 0.001$). The details of CAM-using asthma and COPD patients are shown in Table 2. CAM-using asthma patients were younger than CAM-using COPD patients (47.36 ± 12.39 vs. 63.32 ± 9.56 , respectively, $p < 0.01$) and had longer duration of disease (9 vs. 7.5, respectively, $p < 0.01$). Educational levels in both groups were similar ($p > 0.05$). Monthly income (Euro) was significantly higher in patients with asthma than COPD (514.76 ± 483.80 [370] and 342.66 ± 142.21 [280] [$p < 0.01$], respectively). Both groups had previously used CAM for about the same duration (8.71 ± 17.00 months in the asthma group, 8.79 ± 17.58 months in COPD group, $p > 0.05$). It was observed that the higher the severity of disease

in patients with asthma the higher the prevalence of CAM usage ($p < 0.01$); however, this was not the case with the patients with COPD ($p = 0.064$). Regular use of pharmacologic treatment, healing from current therapy, and the rate of hospitalizations were similar ($p > 0.05$). Among CAM-using patients with asthma and COPD, 56.8% vs. 64.7%, respectively, were satisfied with current prescribed drugs. However, only very few of them (3.1% vs. 8.8%, respectively) referred CAM as better than prescribed drugs, and 39.5% and 23.5% of them, respectively, believed that the combination of CAM and prescribed drugs were better than either treatment alone.

The most commonly used type of CAM was herbal therapy followed by animal products in both groups. Herbal remedies, animal products (quail egg, royal jelly, mule milk, turtle blood, mole meat), and Speleotherapy, certain conditions of caves and mines, were used in 46.6%, 28.1%, and 7.7% of patients with asthma, respectively. Similarly, herbal remedies were common (28.8%) in patients with COPD patients and only a few of them tried animal products (4.8%). Linden, dog rose, garden sage, chamomile, thyme, and dried nettle were among the most common herbal remedies used by patients with asthma or COPD. Other CAM practices such as ayurveda, breathing exercise, massage therapy, Turkish bath, yoga, acupuncture, religious therapy, aromatherapy, and reiki were rarely tried by patients in both groups.

The ratio of patients who stopped taking prescribed medication during CAM usage was not statistically different among patients with asthma and COPD (17.9% and 8.8%, respectively). A few number of patients consulted with their physicians about the use of CAM (14.2% in asthma patients and 10.4% in patients with COPD, $p > 0.05$). Asthma patients expressed more difficulty in reaching CAM than patients with COPD (21% vs. 4.4%, $p < 0.01$).

Almost one fifth of the asthma patients, who used CAM, reported CAM-related adverse effects, and this was significantly higher than the COPD patients who made similar reports (21.5% vs. 7.4%, $p < 0.01$). In the asthma group, the following were reported as adverse reactions: pruritus (in 7 patients), angioedema (in 3 patients), dyspnea (in 11 patients), increase in blood pressure (in 1 patient), gastric pain (in 2 patients), arthralgia (in 1 patient), weight gain (in 3 patients), and elevated cholesterol level (in 1 patient). Only 4 patients with COPD reported CAM-related adverse reactions such as angioedema, elevated blood pressure, diarrhea, and gastric pain. All the reported adverse reactions by both groups were associated with herbal products. None of the reactions were observed or documented by the physicians who performed this survey. Among asthma patients the main reason to use CAM was reported as "it is harmless" in 82.4%, which was followed by "symptomatic relief" in 46.3% and "for improved general health" in 14.2%. However, symptom relief (30.8%) was the main reason for patients with COPD, and only 12% of them considered CAM as harmless. Very few patients reported the reason to use CAM as a way of ameliorating the side effects of prescribed medicines. Not believing in the benefits of CAM was the most commonly expressed reason in patients uninterested in CAM in both disease groups; however, this ratio was markedly higher in patients with COPD (29.4% vs. 41.3% for patients with asthma and COPD, respectively). Reliability and potential for adverse reactions associated with CAM were also considered

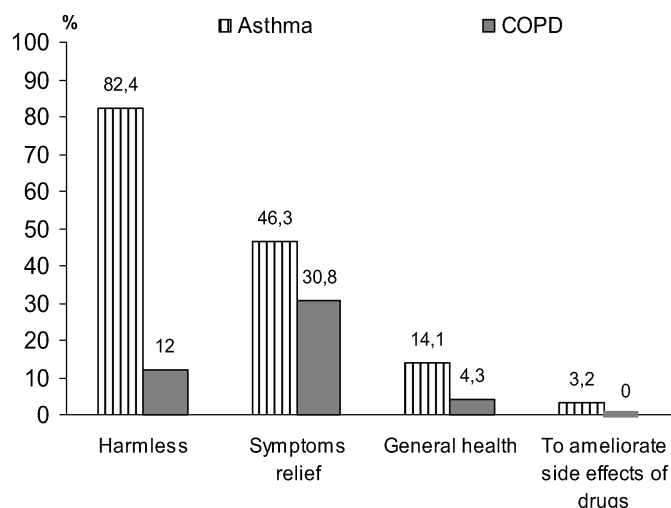


FIGURE 1.—Reasons for using CAM for study groups.

by patients with asthma who did not use CAM (24.3% and 18.5%, respectively). Figures 1 and 2 summarize the reasons and factors that lead to the usage or decline of CAM practices.

The usage of CAM was recommended to patients with asthma and COPD by their friends (44.4% vs. 21.6%, respectively), the media (13.4% vs. 4.3%, respectively), or their physicians (1.3% vs. 1.4%, respectively).

DISCUSSION

This study showed that almost half of the adult patients with asthma or COPD used various forms of CAM, although its prevalence among asthma patients was significantly higher than that of patients with COPD. We selected patients with asthma and COPD for this study because symptoms associated with both diseases are very similar, but there are striking differences in response to treatment and long-term outcomes. We predicted that these differences would affect patients' decisions to incorporate CAM practices to their therapy. There is a growing body of evidence that the CAM treatments are getting popular among patients with chronic diseases such

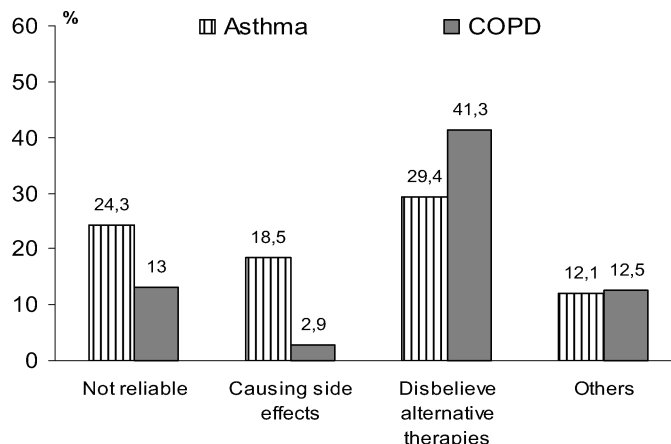


FIGURE 2.—Reasons for not using CAM for study groups.

as asthma and COPD, which are characterized by increased morbidity and disability (3, 15). Large population surveys indicate that the prevalence of CAM usage ranges anywhere between 4% to 79% in adults with asthma (3, 4, 16). For example, the prevalence of CAM usage was 27.2% in patients with asthma living in Singapore (12). Another set of data from several European countries showed that this number could vary between 33% to 49% in patients with asthma who used CAM previously (13, 15). Furthermore, in the United States, alternative practice was reported by 42% of adults with asthma (25). Similarly, our previous study in which the same questionnaire (22) had been used showed that 43% of adult patients with asthma used CAM. The prevalence of the use of CAM in this current study among asthma patients was comparable with the results of the other surveys from various geographic and cultural areas worldwide.

Although public interest in CAM has grown substantially, the usage of CAM in patients with COPD has gained much less interest (2). In Australia, CAM use was reported by 41% of patients with COPD (14). The prevalence of the usage of CAM in our patients with COPD (33.65%) was in accordance with findings in Australia.

A number of factors have been related with large variability in the reported prevalence rates of CAM use. Demographic, socioeconomic, and cultural features may be associated with the use of CAM. Some research results showed that younger age, female gender, longer disease duration, higher incomes, and higher levels of education could be predictive of CAM use (12, 26, 27). In our study, age, gender, or educational status did not appear to be important for CAM usage in patients within each of the disease groups. However, when comparing between the disease groups, the majority of the asthma patients who used CAM appeared to be younger, mostly women, with a longer history of having the disease, and higher monthly family income than the COPD patients who used CAM. This finding seems to be related to the demographic features of all of the asthma patients since their mean age was lower, most were women, and their monthly family income was higher than those of the entire COPD patients.

There is no clear answer as to why patients seek CAM, but some reasons include persistent symptoms leading to dissatisfaction with conventional therapy and a search for something natural, safe, and effective for symptoms by patients who have chronic, severe, and incurable diseases (15, 16, 26). The reasons for using CAM in our patients are thought to be in accordance with these findings.

The ratio of patients who reported satisfaction with prescribed drugs was significantly lower among CAM-using asthma and COPD patients compared with whole patients with COPD and asthma. This dissatisfaction and the assumption about safety of CAM may influence patient attitudes towards CAM. Additionally, the severity of the disease may play a role in the use of CAM as observed in both groups where there was a significant tendency to use CAM in patients with more severe asthma or COPD.

Although CAM comprises well over 100 different therapies, acupuncture, aromatherapy, breathing techniques, herbal products, homeopathy, and yoga are the most frequently tried therapies among asthma patients (3, 16). Similarly, acupuncture, herbal medicine, homeopathy, and nutritional therapies such as vitamin, coenzyme Q10, and

omega-3/fish oil are popular among patients with COPD (14). Use of various CAM methods may vary among different cultures (28). Our patients previously had rarely tried some popular CAM methods such as acupuncture, aromatherapy, homeopathy, reflexology, and spinal manipulation. The use of CAM is not covered by the National Health Insurance System in Turkey, which could explain the very limited usage of these CAM modalities. Overall, herbal medicine was the most popular CAM intervention for our patients. This could be related to the relative inexpensiveness and availability of natural herbs and the popular beliefs on their relative safety and effectiveness. Additionally, usage of some unusual animal-derived products such as quail egg, mule milk, turtle blood, and mole meat appeared to be related to the cultural or geographic characteristic of our study groups. Contrary to the easy access to natural herbs, not surprisingly, patients with severe asthma who mostly used unusual CAM such as turtle blood, mole meat, or mule milk reported difficulties in reaching these reagents. Speleotherapy, which is based on microclimate of the caves and is popular in the Balkans (29), was widely used by our asthma patients as well. There are some popular caves in the southern part of Turkey that are often visited by asthma patients in the hope to improve their respiratory symptoms.

Overall there is no adequate evidence of efficacy for the use of many CAM therapies in the respiratory diseases, perhaps, owing to the lack of well-controlled studies investigating this issue (2, 30, 31). Conversely, some encouraging data with herbal products have been reported; double-blind placebo-controlled trials demonstrated that plant-based formulations were safe and effective on pulmonary function parameters and clinical symptoms in patients with asthma (32, 33). However, the effectiveness of herbal medicines in COPD has not been established yet (34).

Contrary to the lack of objective data regarding effectiveness of CAM, it is often perceived as effective by patients who have tried it (35). In our study, more than half of the CAM users in both groups reported dissatisfaction with their current medication, but only a few of them reported that CAM was more effective than the prescribed medicines. Unfortunately, we did not have any way of objectively measuring these responses to support the reported efficacy. Information on CAM was typically obtained through the press, television, Internet and other media, friends, and physicians (36). In the present study, friends' advice on CAM was the singular, most influential source of information, also in accordance with the recent findings from the asthmatic populations in European countries (15). According to the data obtained from most European countries (15), the media appeared to not play an important role as a source of information about CAM. The low level of education in both groups may have lead to limited use of media as their source of information. Almost all patients who tried CAM did not receive information from their physician. On the contrary, this was not the case in most European countries such as Italy, Germany, and Switzerland where the use of CAM was recommended and provided by physicians to a large extent (15). Moreover, only a few of our patients discussed the use of these therapies with their physician. There is no survey about Turkish physicians' attitudes and personal beliefs towards CAM practices; however, complementary and alternative modalities are not taught as part

of Turkish medical school curriculum, which could alone be an important factor in the lack of physician contribution.

A significant association between noncompliance with prescribed medicine and switching to CAM followed by admission to hospital was observed in patients with both asthma and COPD (37). Fortunately, only a small number of patients stopped taking prescribed medication during CAM use in our study. We did not systematically evaluate compliance of the patients but our patients were regularly followed by specialized asthma and COPD clinics, and this may explain the low ratio of noncompliance among our patients to prescribed medicine.

Although most CAM methods are known to be safe, there is still a considerable risk of adverse effects and sometimes severe reactions may appear (2, 38, 39). For example, herbal medicines have been associated with severe adverse effects and drug-herb interactions (2, 39). Indeed, in our trial, all adverse reactions were related to herbs and were self-reported. However, we did not systematically evaluate the CAM-related adverse effects, which should be considered as a limitation of this study.

In conclusion, considering the popularity of CAM usage among patients with asthma and COPD, physicians who are dealing with these patients should consider inquiring about the CAM practices of their patients as a part of their routine medical history and furthermore be prepared to provide reliable information on these common practices to their patients.

REFERENCES

- Guidance for Industry on Complementary and Alternative Medicine Products and Their Regulation by the Food and Drug Administration, 2006. Available at <http://www.fda.gov/cber/gdlns/altmed.htm>.
- Lewith GT. Respiratory illness: a complementary perspective. *Thorax* 1998; 53:898–904.
- Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, et al. Trends in alternative medicine in the United States, 1990–1997; results of a follow-up national survey. *JAMA* 1998; 280:1569–1575.
- Fisher P, Ward A. Complementary medicine in Europe. *BMJ* 1994; 309:107–111.
- Karakoca Y, Demir AU, Kisacik G, Kalyoncu AF, Findik S. Speleotherapy in asthma and allergic diseases. *Clin Exp Allergy* 1995; 25:666–667.
- Kalyoncu AF, Selçuk ZT, Iskenderani A, Cöplü L, Emri S, Sahin AA, Barış YI. Alternative and complementary medicine for asthma. *Thorax* 1992; 47:762.
- Gözüm S, Arikian D, Büyükcavci M. Complementary and alternative medicine use in pediatric oncology patients in eastern Turkey. *Cancer Nurs* 2007; 30:38–44.
- Tan M, Uzun O, Akçay F. Trends in complementary and alternative medicine in eastern Turkey. *J Altern Complement Med* 2004; 10:861–865.
- Siafakas N, Vermeire P, Pride P, Paoletti P, Gibson J, Howard P, Yernault JC, Decramer M, Higenbottam T, Postma DS, Rees J. Optimal assessment and management of chronic obstructive pulmonary disease (COPD). *Eur Respir J* 1995; 8: 1398–1420.
- Barnes NC, Crompton GK. Asthma. In: *Pulmonary Diseases*. Carlo Grassi (Ed). Berkshire. McGraw-Hill International Ltd. 1999:65–82.
- Ziment I. Complementary and alternative medicine therapies for chronic obstructive pulmonary disease. *Focus Altern Complement Ther* 2003; 8:385–391.
- Ng TP, Wong ML, Hong CY, Koh KTC, Goh LG. The use of complementary and alternative medicine by asthma patients. *Q J Med* 2003; 96:747–754.
- Ernst E. Complementary therapies for asthma: what patients use. *J Asthma* 1998; 35:667–671.
- George J, Ioannides-Demos LL, Santamaria NM, Kong DCM, Stewart K. Use of complementary and alternative medicine by COPD patients. *MJA* 2004; 181:248–251.
- Schafer T. Epidemiology of complementary alternative medicine for asthma and allergy in Europe and Germany. *Ann Allergy Asthma Immunol* 2004; 93(2 suppl 1):S5–S10.
- Slader CA, Reddel HK, Jenkins CR, Armour CL, Bosnic-Anticevich SZ. Complementary and alternative medicine use in asthma: who is using what? *Respirology* 2006; 11:373–387.
- Çelik G, Mungan D, Bavbek S, Sin B, Demirel YS, Mısırlıgil Z. The prevalence of allergic diseases and atopy in Ankara, Turkey. A two-step population based epidemiological study. *J Asthma* 1999; 36:281–290.
- Saraclar Y, Çetinkaya F, Tuncer A, Kalayci O, A dalioğlu G, Şekerel BE, Demirel Y, Misirligil Z. The prevalence of self-reported asthma and respiratory symptoms in Ankara, Turkey. *Respir Med* 1997; 91:461.
- Baykal Y. KOAH üzerinde epidemiyolojik bir araştırma. *Tüberküloz ve Toraks* 1976; 24:3–18.
- Dörtbudak Z, Erkan F. İstanbul'da bir ilçede kronik bronşit semptom prevalansı. *Toraks Derneği 1. Yıllık Kongresi Bildiri Özet Kitabı*, Nevşehir; 1996:55 (in Turkish).
- Orhan F, Sekerel BE, Kocabas CN, Sackesen C, Adalioglu G, Tuncer A. Complementary and alternative medicine in children with asthma. *Ann Allergy Asthma Immunol* 2003; 90:611–615.
- Kurt E, Bavbek S, Pasaoğlu G, Abadoğlu O, Mısırlıgil Z. Use of alternative medicines by allergic patients in Turkey. *Allergol Immunopathol* 2004; 32:289–294.
- Global Strategy for Asthma Management and Prevention (revised 2006). Global Initiative for asthma (GINA) NHLB Available at <http://www.ginaasthma.com>.
- Pauwels RA, Buist AS, Calverley PM, Jenkins CR, Hurd SS. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. NHLBI/WHO Global Initiative for Chronic Obstructive Lung Disease (GOLD) Workshop summary. *Am J Respir Crit Care Med* 2001; 163:1256–1276.
- Blanc PD, Trupin L, Earnest G, Katz PP, Yelin EH, Eisner MD. Alternative therapies among adults with a reported diagnosis of asthma and rhinosinusitis. *Chest* 2001; 120:1461–1467.
- Astin JA. Why patients use alternative medicine: results of a national study. *JAMA* 1998; 279:1548–1553.
- Eisenberg DM, Kessler RC, Foster C, Norlock FE, Calkins DR, Delbanco TL. Unconventional medicine in the United States: prevalence, costs, and patterns of use. *N Engl J Med* 1993; 328:246–252.
- Kitai E, Vinker S, Sandiuk A, et al. Use of complementary and alternative medicine among primary care patients. *Fam Practice* 1998; 15:411–414.
- Beamon S, Falkenbach A, Fainburg G, Linde K. Speleotherapy for asthma. *Cochrane Database Syst Rev* 2001; (2): CD001741.
- Steurer-Stey C, Russi EW, Steurer J. Complementary and alternative medicine in asthma-do they work? *Swiss Med Wkly* 2002; 132:338–344.
- Markham AW, Wilkinson JM. Complementary and alternative medicines (CAM) in the management of asthma: an examination of the evidence. *J Asthma* 2004; 41:131–139.
- Murali PM, Rajasekaran S, Krishnarajasekar OR, Perumal T, Nalini K, Lakshmisubramanian S, Deivanayagam CN. Plant-based formulation for bronchial asthma: A controlled clinical trial to compare its efficacy with oral salbutamol and theophylline. *Respiration* 2006; 73:457–463.
- Wen MC, Wei CH, Hu ZQ, Srivastava K, Xi ST, Mu DZ, Du JB, Li GH, Wallenstein S, Sampson H, Kattan M, Li XM. Efficacy and tolerability of anti-asthma herbal medicine intervention in adult patients with moderate-severe allergic asthma. *J Allergy Clin Immunol* 2005; 116:517–524.
- Guo R, Pittler MH, Ernst E. Herbal medicines for the treatment of COPD: a systematic review. *Eur Respir J* 2006; 28:330–338.
- Ernst E. Complementary/Alternative medicine for asthma. *Chest* 1999; 115:1–3.
- McHughes M, Timmermann BN. A review of the use of CAM Therapy and the Sources of Accurate and Reliable Information. *J Manag Care Pharm* 2005; 11:695–703.

37. Jose VM, Bhalla A, Sharma N, Hota D, Sivaprasad S, Pandhi P. Study of association between use of complementary and alternative medicine and noncompliance with modern medicine in patients presenting to the emergency department. *J Postgrad Med* 2007; 53:96–101.
38. Ventura MT, Viola M, Calogiuri G, Gaeta F, Pesole O, Romano A. Hypersensitivity Reactions to Complementary and Alternative Medicine Products. *Curr Pharmaceut Des* 2006; 12: 3393–3399.
39. Izzo AA, Ernst E. Interactions between herbal medicine and prescribed drugs: A systematic review. *Drugs* 2001; 61:2163–2175.

APPENDIX

1. Patient's name:
2. Out-patient/inpatient:
3. Age/sex:
4. Place of birth:
5. Place of residence:
6. Occupation:
7. Educational status:
8. Marital status:
9. Social security:
10. Monthly income (convert to Euro):
11. Atopy:
12. Disease: Asthma/COPD:
 - Duration:
 - Severity

13. C morbid diseases:
14. Spirometry results:
15. "Are you satisfied with your current prescribed drugs?"
16. "Do you use your prescribed drugs regularly?"
17. "Have you ever been admitted to hospital or emergency room or hospitalized due to asthma or COPD within the previous year?"
18. "Have you ever used any form of CAM?"
 - If the answer is no:
19. "Why didn't you use it?"
 - If the answer is yes:
20. "Why did you use CAM?"
21. "How did you hear about CAM?"
22. "What kind of CAM you used such as herbal medicines, quail egg, ayurveda, speleotherapy, breathing techniques, massage, Turkish bath, yoga, hypnosis, acupuncture, aroma-therapy, mind-body therapies, or another method?"
23. "How long have you used CAM?"
24. "Have you ever experienced any adverse effects of CAM?"
25. "Which therapy is better?"
26. "Did you ask your doctor for an information about CAM?"