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High Usage of Complementary and Alternative Medicine among Turkish Asthmatic Children

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ABSTRACT

An increasing number of asthmatic patients are attracted by complementary and and alternative medicine (CAM). The aim of this study was to estimate the prevalence and describe the characteristics of CAM use by children with asthma in a paediatric allergy clinic in Istanbul, Turkey.

The parents of asthmatic children were invited to participate in a cross-sectional survey study. Current asthma treatment**,** severity of asthma, emergency admittances and hospitalisations, education of parents, settlements, income of the family and parental use of CAM were investigated as predictors of CAM usage.

Out of the 500 patients, 330 (66 %) had used CAM therapy; most popular modalities were herbal medicine (45 %), honey (41.6 %), grape syrup (37.2 %) and quail eggs (36.2 %). The most common used herbal medicine in the study group were linden (21.6%) and ginger (21.2 %). There was no significant difference in regard to the use of regular asthma treatment, the severity of asthma, the frequency of emergency admittance, hospitalisations due to asthma, education of parents and settlements between CAM users and non-CAM group. A significant inverse association was found in terms of family income and CAM usage. Parents' own use of CAM was also associated with significant increase in the use of CAM.

In conclusion; the prevalance of reported CAM use among Turkish asthmatic children was found to be high (66 %), with herbal medicine being the most popular modality. The results of this study shows that CAM use becomes more prevelant among asthmatic children from families with low income. It will be increasingly important for physicians who care for allergic children to be aware of high CAM usage.

Keywords: Alternative medicine; Asthma; Children; Complementary medicine; Herbal medicine

INTRODUCTION

Asthma is the most common chronic disease in childhood characterized by chronic inflammation of the lower airways and the development of wheezing, cough, shortness of breath and chest tightness.[1] Inhaled glucocorticoids which are generally effective and well tolerated are currently the mainstay of asthma therapy,

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although several side effects may occur when they are used at high doses or for a prolonged time.[2] Complementary and alternative medicine (CAM), as defined by the National Center for Complementary and Alternative Medicine, is a group of diverse medical and health care systems, practices, and products that is not presently considered to be part of conventional medicine.[3]

Lung problems especially asthma and allergic diseases rank in the top 15 most important diseases for which CAM is used for both children and adults.[4,5] Despite the growing interest, the prevalance of CAM use among asthmatic children is still unknown. In some studies pediatric CAM use by asthmatics has been reported to be as high as 80 % when folk medicine (including prayer) is included in the broad definition of what constitutes a CAM practice.[6]

The aim of this study was to examine the prevalence of CAM use among 500 children between 1 to 17 years of age with asthma, and to ascertain the types of CAM therapies used in this population and sociodemographic features of children according to CAM use.

MATERIALS AND METHODS

Study Population

Parents and children were invited to participate in this questionairre-based study if they met the following criteria: the child was 1 to 17 years of age, followed with the diagnosis of asthma in pediatric allergy department of our hospital.

During 12 months period, all the asthmatic patients of the clinic between 1-17 years of age were invited to participate in this study. All the patients and parents who gave the informed consent were included and questioned face to face by the physician of the clinic

Questionnaire

Each patient received a questionnaire including information on demographic variables of the children. The children's ages, sex, settlements (rural-urban), current asthma medications, asthma execerbations, hospitalisations and emergency admittances due to asthma attack in the past year were recorded.

The patient's asthma severity were classified as 'intermittent', 'mild persistent', 'moderate persistent' and 'severe persistent' according to the Global Initiative for Asthma (GINA).

Parent(s) were asked to list all prescription medications that his or her child was currently taking for asthma management.

Parental education was categorized according to graduations such as primary school, secondary school, high school, college or graduate school.

Family income was categorised as; Low: <1000 Turkish Lira (440 $) per month, Medium: Between 1000-3000 Turkish Lira (440-1320 $) per month, High: >3000 Turkish Lira (>1320 $) per month. Low income is catogorized as any income below minimum wages plus child benefit.

A detailed questionnaire was given to ascertain whether the patient used CAM therapy anytime in his life for the treatment of asthma symptoms. Types and details of the CAM therapy used were recorded.

Statistics

Data are summarized as percentages and odds ratios (OR) with 95% confidence interval (95% CI). Results of chi-square tests are also reported. All *p* values reported are two-sided and significance level was defined as $p<0.05$. Exposure variables were compared between the two groups where patients who had used CAM therapy at any point in time were allocated to the CAM group and those who had never used CAM therapy were allocated to the non-CAM group. Chi-square test was utilized to test for statistically significant differences among the subgroups. Results are reported as the mean ± SEM or as percentage of the responses to each question. For comparing groups, *t* tests and χ^2 test were used. Statistical tests were performed with SPSS 14 (Statistical Package for Social Sciences, SPSS Inc, Chicago, IL).

RESULTS

The study was performed between January 2012-January 2013. Out of the 520 children between 1-17 years of age with asthma, 20 (3.84%) families refused to participate resulting in a final study population of 500 parents and their children. The demographic data of the patients are given in Table 1.

The childrens' parents learned about CAM through relatives (52 %), newspapers/television/internet (18 %), friends (17 %) and physicians (11 %).

Out of the 500 patients, 330 (66 %) had used CAM

Table 1. Demographic characteristics of the sample.

Demographic Characteristic	N %
Sex	
Female	202 (40.4 %)
Male	298 (59.6 %)
Age of child	1-17 years (6,89±3,70)
Educational level of mother	
None	21 (4.2 %)
Primary school	272 (54.4 %)
Secondary school	56 (11.2 %)
High school	98 (19.6 %)
College, trade or graduate school	53 (10.6 %)
Educational level of father	
None	4 (0.8 %)
Primary school	220 (44 %)
Secondary school	79 (15.8 %)
High school	131 (26.2 %)
College, trade or graduate school	66 (13.2 %)
Geographic location	
Urban	350 (70 %)
Rural	150 (30 %)
Income	
Low	98 (19.6 %)
Medium	387 (77.4 %)
High	14 (2.8 %)
Severity of asthma	
Mild intermittent/persistent	360 (72 %)
Moderate persistent	130 (26 %)
Severe persistent	10 (2 %)
Current asthma medications	
Yes	408 (81.6 %)
No	92 (18.4 %)
Asthma exacerbations	
≥2	183 (36.6 %)
<2	317 (63.4%)
Emergency admittances	282 (56.4%)
Hospitalisations	45 (9.2 %)
CAM use	
Yes	330 (66%)
No	170 (34%)

therapy. The threemost common used CAM therapies were herbal medicine, honey, grape syrup. The percentages of CAM therapies used by the asthmatic patients were demonstrated in Table 2.

The most common used herbal medicine in the study group were linden, ginger and tumeric. 5.6 % of the herbal medicine users reported multiple herb consumption. The percentages of herbal medicine use were given in Table 3.

Table 2. Types of CAM used

Herbal medicine	45%
Turkish honey	41.6 %
Grape syrup	37.2%
Quail eggs	36.2%
Fish oil	11%
Vitamin+mineral	7.6%
Carob syrup	8.8%
Many of them	30%
Honey bee milk	2.8%
Bee pollen	2%

Table 3. Types of herbs used

Linden	21.6 %
Ginger	21.2 %
Turmeric	9,4 %
Sage	8 %
Daisy	8.8 %
Multiple herbs	5.6 %
Red radish	4.2 %
Black cumin	4 %
Leaves and seed of quince	3.4 %
Cinnamon	3.2 %
Echinacea	3 %

The characteristics of CAM and non-CAM groups were shown in Table 4. The differences between age and sex of the patients were insignificant (p<0.05). There was no statistically significant difference in terms of the severity of asthma, use of regular asthma treatment, frequency of emergency admittances, and hospitalisations due to asthma between CAM-group and non-CAM group. CAM usage in the children was not different according to the educational level of the parents. There was no significant relationship in terms of settlement between CAM-group and non-CAM group. A statistically significant inverse association was found in terms of family income and CAM usage (p=0.017). Higher income level of the family was associated with statistically significant decrease in use of CAM (Odds ratio=0.57, 95% CI=0.34-0.94). Parents use of CAM was also associated with significant increase in use of CAM (p<0.001 (Odds ratio=3.97, 95% CI=2.45-6.45).

Table 4. The characteristics of the CAM and non-CAM groups

Characteristics	CAM (n=330)	non-CAM (n=170)	*p*-value	Odds Ratio (95 %CI)
Asthma treatment (Antiinflamatory drug +/-)	271/59	137/33	0.318	1.11 (0.69-1.78)
Severity of asthma (Mild/moderate-severe)	229/101	131/30	0.071	1.48 (0.97-2.27)
Emergency admittance due to asthma (+/-)	33/83	11/123	0.068	1.50 (1.03-2.18)
Hospitalisations due to asthma (+/-)	34/296	11/159	0.396	1.66 (0.82-3.37)
Educational level of mother (Primary-secondary/high school-University)	302/28	145/ 25	0.215	0.70 (0.47-1.04)
Educational level of father (Primary-secondary/high school-University)	291/39	143/27	0.353	0.96 (0.66-1.41)
Geographic location (Urban/rural)	231/99	129/41	0.099	1.35 (0.88-2.06)
Income (Low/medium-high)*	74/256	24/146	**0.017***	**0.57 (0.34-0.94)***
Parents' use of CAM (+/-) *	131/199	24/146	**<0.001***	**3.97 (2.45-6.45)***

***** $P<0.05$

DISCUSSION

CAM is defined as health care practices that are usually not included in conventional biomedical systems.[7] Asthma specific data concerning the use of CAM in Turkish children are still inadequete. Orhan et al investigated 304 Turkish asthmatic children with a questionairre-based survey and they found 49 % of them had used CAM previously.[8] Babayigit et al found that 46.4 % of the asthmatic children participating in their study had used CAM before.[9] Arcoleo et al examined the prevalence, types of CAM use among children 5–12 years with asthma and they reported that 65% of children with asthma were using CAM.[10] Singer et al showed that 16% of 252 asthmatic children aged between 2-12 years who were participating in their study used CAM.[11] The prevalence of CAM usage among asthmatic children was reported as 13% in a cross-secional study conducted in Quebec.[12] In the current study, we found that 66% of 500 asthmatic children between 1-17 years of age used some form of CAM previously.

The most commonly used CAM therapies in children were herbal products, including vitamins and minerals; breathing techniques; massage; homeopathy; and praying.[13] Herbal supplements are often the most common CAM therapy reportedly used for the treatment of asthma. In a review study reported by Slader et al, the use of dietary supplements including herbs, vitamin-minerals, naturopathic and Ayurvedic therapies was found between 12-53% in asthmatic patients.[13] In the current study, we found that herbs were the most commonly used CAM therapy in Turkish children. The most common used herbal medicine in this study group were linden (21.6 %) and ginger (21.2 %). These kinds of herbs were rarely reported as CAM therapy for pediatric asthmatic patients. We think that CAM is not a static concept and can vary greatly from culture to culture.

Most of the studies reported that relatives and friends were the most common source of information for the CAM usage.[8,14] In our study group, media and internet were found less likely sources of information. The interesting finding is that only 11% of the patients used CAM with suggestion of their physicians. The main information source was relatives in the current study.

Most of the pediatric studies have found increased CAM use in children having mild or moderate persistent asthma; those receiving high-dose antiinflammatory treatment; and those patients who had poor symptom control or frequent physician visits, including going to the emergency room,[8,15,16] but no statistically significant difference in regards to the severity of asthma, usage of regular asthma treatment, the frequency of emergency admittance, hospitalisations due to asthma between CAM users and non-CAM group were found in the current study. Although not statistically significant, the number of asthmatics coming to emergency department is quite

high (33/83 compared with 11/123) and this means that usage of CAM may interfere with the control of asthma by common controller drugs.

There are conflicting results in the literature about the education of parents whose children used CAM therapies. Spigelblatt et al reported that CAM users tend to have better educated mothers.[17] Some studies showed that parental education were not associated with child CAM use.[9,18] There is also evidence that CAM usage was highest among poor, less educated parents.[10] In our questionairre-based study, no significant association was found between the educational level of parents and CAM usage.

Conflicting results are found in the literature about the association between income of the family and CAM usage of asthmatics. Marino et al reported that CAM usage was significantly higher among persons with financial barriers to asthma care.[19] In another study, no significant relationship was found between educational levels and income of asthmatic patients and CAM usage.[20] In the current study, a significant inverse association was detected between income of the family and CAM usage. In other words, CAM usage was more prevelant among asthmatic children in families with lower income.

One of the strengths of the study was the high response rate of 96.15%. However the study group mostly included familes who had asthmatic children and resided in Istanbul and were from lower income families who were not educated. Thus the main limitation of the study is that the participants were mostly comprised of families with low income and low educational levels therefore future studies should target recruitment of families with high income and high educational level and caution should be exercised when generalizing the results of the study. Another limitation of the study is due to the retrospective nature of data collection. Since the families have been asked to report their use of CAM therapies in the past 12 months, there might be inaccuracies due to recall bias. Another limitation of our study is the absence of data about the duration and amount of antiasthmatic drugs used and asthma control levels of patients.

In conclusion, the prevalence of reported CAM use among Turkish asthmatic children was found to be high (66%), with herbal medicine (45%) being the most popular modality. The results of this study shows that CAM use becomes more prevelant among Turkish asthmatic children from families who have low income. It will be increasingly important for physicians who care for allergic children to be aware of the higher prevalence of CAM usage.

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