

ORIGINAL ARTICLE

Comparative analysis of the use of complementary and alternative medicine by Korean patients with androgenetic alopecia, atopic dermatitis and psoriasis

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Abstract

Background Complementary and alternative medicine (CAM) is being increasingly used among Koreans with chronic dermatologic diseases, such as androgenetic alopecia (AGA), atopic dermatitis (AD) and psoriasis.

Objective To quantify the usage of CAM in Korean patients with AGA, AD or psoriasis, and to offer valid information for the physicians frequently encountering such disorders.

Methods Outpatients ($n = 678$) from three tertiary hospitals were investigated independently by constructed and self-directed questionnaire.

Results Of the respondents, 62.1% (421/678) of the subjects reported current or previous use of CAM for their dermatologic conditions (AGA, 67.2%; AD, 68.9%; psoriasis, 46.6%). In AGA, topical applicants (50.2%) were most often used, followed by dietary therapy and health supplements. In AD, bath therapy (39.4%) was most often used, followed by oriental medicine and topical applicants. In psoriasis, oriental medicine (33.9%) was most frequently used, followed by bath therapy and health supplements. The proportion of patients who believed that CAM helped to improve their skin condition was relatively low (AGA, 16.1%; AD, 31.7%; psoriasis, 15.0%).

Limitations The results may not be applicable to other countries and generalized to general populations.

Conclusion These results indicate that CAM is widely used in Korean patients with chronic dermatological diseases despite their dissatisfactions. Thus, the advantages and disadvantages of CAM must be considered before its clinical practice.

Received: 30 January 2012; Accepted: 26 April 2012

Conflict of Interest

The authors have no conflict of interest to declare.

Introduction

The use of complementary and alternative medicine (CAM) is increasing in patients with dermatologic diseases.^{1–6} Previous reports of CAM use by dermatologic patients have shown that the life-time prevalence of its usage is high, ranging from 35 to 69%.⁴ Among the chronic inflammatory dermatoses, androgenetic alopecia (AGA), atopic dermatitis (AD) and psoriasis are representative as they are frequently encountered and familiar to most dermatologists and the general population. These disorders also show chronic and intractable courses that drive patients to seek complete cures.

In Korea, many patients perceive CAM to be safe and effective due to longstanding conventional wisdom, and, thus, CAM use is relatively common and increasing among dermatologic patients.⁷ Moreover, in contrast with western countries, in Korea, oriental medicine has been officially approved and has gained support from legal systems using the licensing system.

However, physicians often dismiss CAM due to the lack of sufficient scientific evidence that supports its effectiveness, the high placebo response, and questions of safety. Thus, there have only been a few limited studies on the use of CAM in patients with AD and psoriasis and none in patients with AGA.^{1–6}

Herein, we sought to investigate the use of CAM by outpatients with AGA, AD and psoriasis and, in doing so, offer valid information for physicians. We devised a detailed questionnaire to quantify the usage of CAM and determine any differences in the patterns of CAM use among patients with these three common dermatologic disorders.

Patients and methods

In total, 678 patients were recruited from the dermatologic clinic of three tertiary hospitals (Pusan National University Hospital, Kyungpook National University Hospital, and Busan Paik Hospital). This survey was conducted between July 2008 and December 2010. The diagnosis of AGA, AD and psoriasis were based on the clinical expertise of dermatologists, and only patients with clinically or histopathologically typical dermatologic manifestations were enrolled. For the diagnosis of AD, Hanifin and Rajka diagnostic criteria for atopic dermatitis was also utilized.⁸ CAM was defined according to the National Institutes of Health definition as 'a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine'.⁹ The investigated therapeutic modalities in our study were divided into the following categories: bath therapy, dietary therapy, health supplements, massage, oriental medicine and topical applicants. In addition, a more detailed analysis of the particular modalities among the above categories was performed for the patients utilizing at least one of the therapeutic modalities. In this study, we defined CAM users as those who used at least one complementary therapy and excluded those who only modified their diet.

An independently constructed, anonymous and self-directed questionnaire was designed after extensive research of previous studies^{1–6,10,11} and each patient was asked to complete the standardized questionnaire after obtaining voluntary informed consent in written form. In children who were not grown enough to understand and answer the questionnaire, parents were asked to describe their child's usage patterns of CAM. The respondents were allowed to reply with multiple responses for the following questions: the types and their detailed uses, patients' or their parents' concerns about conventional medicine, and motives of using CAM. A pilot questionnaire was given to 20 patients, and no changes were deemed necessary at this stage. The main themes addressed by the questionnaire are presented in Table 1. The specific objectives of the present study were to determine the prevalence of the use and the reason for seeking CAM, and the concerns about conventional medicine in patients with AGA, AD and psoriasis. Additional objectives were to compare the questionnaire results between the diseases and the patients' satisfaction with CAM in each disease. Those who had used CAM were asked to rate their satisfaction with it on a 5-point scale.

Participants were informed about the nature of this study and its strict use for research purposes only prior to proceeding with

the investigation. Ethical approvals for the study were obtained from the Institutional Review Boards at each tertiary hospital.

Statistical analysis

Chi-squared tests were used to evaluate the prevalence, patients' concerns and satisfaction with CAM use. Predictive Analytics Software (PASW for Windows, SPSS Inc., Chicago, IL, USA) was used for the analysis. Statistical significance was defined as *P* values less than 0.05.

Results

Baseline characteristics

Of the 678 patients included in the survey, 235 had AGA, 254 had AD and 189 had psoriasis. The mean age of the patients was 27.3 years (range, 2–85 years). Among the respondents, 441 (65.0%) were male, and 237 (35.0%) were female. The demographic and disease characteristics of the study population are shown in Table 2.

Prevalence and types of the CAM use

Tables 3–6 summarize the prevalence and types of the different CAM modalities that subjects used to treat their diseases. Of the respondents, 62.1% (421/678) of the subjects used at least one CAM modality to treat their dermatological conditions. In comparison with psoriasis patients (46.6%), AGA (67.2%) and AD (68.9%) patients showed higher prevalence rates in the use of CAM ($P < 0.05$). However, the difference in the prevalence rates was not significant between patients with AGA and AD ($P > 0.05$). Among the 678 respondents, topical applicants (30.4%) were mostly commonly used, and this was followed by oriental medicine (26.4%), bath therapy (20.5%) and health supplements (17.4%). However, the most commonly used CAM among the 235 AGA patients was topical applicants (50.2%), which was followed by dietary therapy (19.6%) and health supplements (10.6%). Bath therapy (39.4%) was the most popular treatment modality used by the 254 AD patients, and this was followed by oriental medicine (38.6%) and topical applicants (28.7%). Oriental medicine (33.9%), bath therapy (20.6%) and health supplements (17.5%) were the most commonly used modalities in the 189 psoriasis patients.

Patients' concerns about conventional medicine

The patients' or their parents' concerns of conventional medicine are shown in Table 7. Of the 678 respondents who were included in our study, 350 (51.6%) had negative concerns about conventional medicine. Among the respondents, 174 (25.7%) thought conventional therapy had 'frequent adverse events'. In addition, 132 (19.5%) subjects reported that conventional medicine was 'temporal in effect or did not cure' their chronic dermatologic diseases. The proportion of patients with psoriasis (78.3%) who expressed concerns about conventional medicine was greater than

Table 1 Main themes addressed by the questionnaire used in the current study

Demographics	Gender, age group, duration of having disease, duration of using CAM therapies, no. agents used
Types of the CAM use	
What types of treatments did you use for your dermatologic condition (atopic dermatitis, androgenetic alopecia or psoriasis)?	Bath therapy
	Dietary therapy
	Health supplements
	Massage
	Oriental medicine
	Topical applicants
Concerns about conventional medicine	
Do you have any negative thinking about conventional medicine?	Yes
	The ambiguity of where to do therapy
	Frequent side effects
	Insufficient or lack of efficacy
	Temporal in effect or did not cure
	Less accessible
	No
Motives of the CAM use	
Why did you choose to use CAM and how did you get the information about such therapies?	Recommendations from family members and friends
	Recommendations from pharmacist or herbalist
	Recommendations from physicians
	Information from the media
	Desire to try all potential treatments
	Adverse events from conventional medicine
	Unsatisfying results from conventional medicine
	No specific motivation
Patients' satisfactions on the CAM use	
In the view of satisfaction, how did you perceive CAM therapies?	Excellent
	Good
	Fair
	Disappointing
	Very disappointing

that of patients with AGA (48.9%) and AD (34.3%) ($P < 0.05$). The most common concerns of psoriasis patients were the 'frequent adverse events' that occurred during the use of conventional medicine (69.3%). However, the most common concerns in patients with AGA and AD were 'the ambiguity of where to do therapy' (17.4%) and 'temporal in effect or did not cure' (23.6%) respectively.

Motives for CAM use

The motives for the use of CAM are shown in Table 8. The main reasons that the respondents used CAM were 'recommendations from family members and friends' (72.0%), followed by 'desire to try all potential treatments' (60.6%) and 'unsatisfying results from conventional medicine' (42.8%). Other mentioned motives for CAM use were 'information from the media' (37.5%) and 'adverse events from conventional medicine' (22.1%). Only 40 patients (9.5%) reported that their CAM use was due to 'recommendation

from physicians'. The most common motive for using CAM for AGA and AD patients was 'recommendations from family members and friends' (AGA, 39.9%; AD, 39.4%), whereas the 'desire to try all potential treatments' was the most common motive for psoriasis patients (59.1%).

Patients' satisfaction with CAM

The proportion of patients who believed that CAM helped their skin condition with satisfactory results (rated by the patients as 'excellent' or 'good') were 16.1% of the patients with AGA, 31.7% of the patients with AD and 15.0% of the patients with psoriasis. The proportion of AD patients who were satisfied with the use of CAM was significantly higher than the proportions of patients with AGA or psoriasis ($P < 0.05$). The modalities that were ranked satisfactory by the most patients were topical applicants (21.2%) for AGA patients, dietary therapy (42.1%) for AD patients and health supplements (21.2%) for psoriasis patients. In contrast, the

Table 2 Demographics and characteristics of complementary and alternative medicine (CAM) users in patients with androgenetic alopecia (AGA), atopic dermatitis (AD) and psoriasis

	AGA	AD	Psoriasis
Total no. patients who were included in present studies	235	254	189
Male	171	151	119
Female	64	103	70
Age, median (range), years	35.6 (15–67)	8.7 (2–40)	42.1 (3–85)
Total no. patients with a history of using at least one CAM	158 (67.2%)	175 (68.9%)	88 (46.6%)
Duration of diseases in patients with a past history of using CAM			
<1 year	26 (16.5%)	63 (36.0%)	24 (12.7%)
1–5 years	68 (43.0%)	58 (33.1%)	21 (11.1%)
5–10 years	40 (25.3%)	23 (13.1%)	14 (7.4%)
≥10 years	24 (15.2%)	31 (17.7%)	29 (15.3%)
Duration of using CAM			
<1 month	17 (7.2%)	72 (28.3%)	66 (75.0%)
1–6 months	69 (29.4%)	104 (40.9%)	48 (54.5%)
6 months to 1 year	49 (20.9%)	50 (19.7%)	28 (31.8%)
1–5 years	69 (29.4%)	63 (24.8%)	17 (19.3%)
5–10 years	18 (7.7%)	16 (6.3%)	4 (4.5%)
≥10 years	7 (3.0%)	45 (17.7%)	3 (3.4%)
No. patients according to the number of used CAM			
1	102 (64.7%)	77 (44.0%)	38 (20.1%)
2	44 (27.8%)	52 (29.7%)	30 (15.9%)
3	9 (5.7%)	19 (10.9%)	12 (6.3%)
4	3 (1.9%)	23 (13.1%)	8 (4.2%)
	0 (0.0%)	4 (2.3%)	0 (0.0%)

Table 3 Total number of patients according to the major types of CAM use

	Bath therapy	Dietary therapy	Health supplements	Massage	Oriental medicine	Topical applicants
AGA (N = 235)	0 (0%)	46 (19.6%)	25 (10.6%)	23 (9.8%)	17 (7.2%)	118 (50.2%)
AD (N = 254)	100 (39.4%)	19 (7.5%)	60 (23.6%)	0 (0%)	98 (38.6%)	73 (28.7%)
Psoriasis (N = 189)	39 (20.6%)	15 (7.9%)	33 (17.5%)	0 (0%)	64 (33.9%)	15 (7.9%)
Total (N = 678)	139 (20.5%)	80 (11.8%)	118 (17.4%)	23 (3.4%)	179 (26.4%)	206 (30.4%)

Bold face indicates the most common CAM in each disorder and total.

most unsatisfying modalities (rated by the patients as ‘disappointing’ or ‘very disappointing’) were dietary therapy (56.5%) and massage (56.5%) for AGA patients, health supplements (36.7%) for AD patients and oriental medicine (68.8%) for psoriasis patients (Table 9).

Discussion

Recent studies have indicated that the use of CAM by dermatology patients had dramatically increased.^{1–6} Despite the increase in the use of alternative therapies, to the best of our knowledge, there have been no previous reports of CAM use in patients with AGA. Furthermore, there has been little attention to comparative studies of the use of CAM, especially those focused on the differences in its use between patients

with different common skin diseases. In the aforementioned study, the authors did not identify the specific usage patterns of the individual patients, and, thus, it has limited value in clinical practice.^{2,3,5,6}

Therefore, we designed a study to compare and characterize in detail the CAM use of patients with the most frequent skin disorders, including AGA, AD and psoriasis, by using a carefully constructed questionnaire. As this study benefits from a large number of subjects and a detailed classification of their usage of CAM, these observations present useful information of CAM use in dermatology. Our findings can be summarized as follows. First, we showed that the frequency of CAM use tends to be higher in patients with AGA and AD than in those with psoriasis, providing a current overview of the pattern and prevalence of CAM use in

Table 4 Details of CAM use among 158 AGA patients

Types of CAM	N (%)
Topical applicants	118 (74.7)
Shampoo	106 (67.1)
Pyroligneous liquid	6 (3.8)
Vinegar	3 (1.9)
Aloe	1 (0.6)
Aroma oil	1 (0.6)
Cytomax	1 (0.6)
Honey	1 (0.6)
Mulberry leaf	1 (0.6)
Sea tangel	1 (0.6)
Sulphur	1 (0.6)
Dietary therapy	46 (29.1)
Black soybean	42 (26.6)
Sesame	38 (24.1)
Bean curd	8 (5.1)
Seaweeds	7 (4.4)
Milk	6 (3.8)
Blue fish	4 (2.5)
Tomato	4 (2.5)
Water parsley	4 (2.5)
Broccoli	3 (1.9)
Green tea	3 (1.9)
Egg	3 (1.9)
Vegetable	3 (1.9)
Walnut	3 (1.9)
Sea tangle	2 (1.3)
Boxthorn	1 (0.6)
Carrot	1 (0.6)
Crown daisy	1 (0.6)
Garlic	1 (0.6)
Ionized water	1 (0.6)
Kidney bean	1 (0.6)
Mulberry	1 (0.6)
Organic food	1 (0.6)
Pomegranate	1 (0.6)
Spinach	1 (0.6)
Health supplements	25 (15.8)
Red ginseng	6 (3.8)
Multiple vitamins	5 (3.2)
<i>Eleutherococcus senticosus</i>	5 (3.2)
Chlorella	2 (1.3)
Green tea	2 (1.3)
<i>Pleuropterus multiflorus</i>	2 (1.3)
Aloe	1 (0.6)
Arrowroot vine	1 (0.6)
Pine needle	1 (0.6)
Boxthorn	1 (0.6)
Black soybean	1 (0.6)
Catechin plus	1 (0.6)
<i>Cordyceps militaris</i>	1 (0.6)
<i>Morinda citrifolia</i>	1 (0.6)
Sesame	1 (0.6)

Table 4 (Continued)

Types of CAM	N (%)
Massage	23 (14.6)
Scalp massage	19 (12.0)
Acupoint massage	6 (3.8)
Food massage	1 (0.6)
Oriental medicine	17 (10.8)
Herbal remedy	10 (6.3)
Acupuncture	6 (3.8)
Cupping therapy	3 (1.9)

patients with three chronic dermatologic diseases. Second, it presented Korean patients' attitudes and beliefs regarding the effectiveness and availability of CAM and conventional medicine. Third, a comparison of the results between patients with chronic skin diseases allows dermatologists a better understanding of these patients and helps them offer evidence-based recommendations for various CAM modalities.

This study demonstrated that current or previous use of CAM therapies was common, with 62.1% prevalence among the total 678 patients. Compared with patients with psoriasis (46.6%), both patients with AGA (67.2%) and AD (68.9%) showed a higher prevalence of the use of CAM ($P < 0.05$). This result may be explained by the fact that the prevalence of AGA and AD are relatively higher than psoriasis, and, thus, businesses related to AGA and AD are well developed and are easily accessible to the public. In addition, the proportion of AGA and AD patients using CAM was higher than that reported in previous studies (AD, 42.5–51.1%, psoriasis, 43–69%).^{1–6} The reasons for these differences remain unclear, but they may reflect the unique medical market in Korea. CAM in Korea encompasses a variety of health care therapies due to its longstanding traditions, the official approval of oriental medicine, and the cosmetic market, including skin care, hair care and makeup, which has rapidly developed.

The current study suggested that patients use a wide variety of CAM modalities. The most popular type of CAM used was topical applicant, which was used by 30.4% of the 678 patients. Specifically, topical applicants (50.2%) in patients with AGA, bath therapy (39.4%) in patients with AD, and oriental medicine (33.9%) in patients with psoriasis were the most commonly used modalities. Interestingly, there were some similarities in the usage patterns of patients with AD and psoriasis in that oriental medicine and bath therapy were most frequently used in AD patients (38.6% vs. 39.4% respectively) and psoriasis patients (33.9% vs. 20.6% respectively). The main modality of oriental medicine was herbs, and bath therapy included green tea, water softener, and salt water. However, the difference in the patterns and use of CAM was notable between patients with AGA and those with widespread inflammatory dermatoses, such as patients with AD and psoriasis. Topical applicants and dietary therapy were

Table 5 Details of CAM use among 175 AD patients

Types of CAM	N (%)
Bath therapy	100 (57.1)
Green tea	52 (29.7)
Softener water	43 (24.6)
Salt water	28 (16.0)
Charcoal	26 (14.9)
Mugwort	14 (8.0)
Rice water	14 (8.0)
Deep sea water	10 (5.7)
Spa water	8 (4.6)
Bamboo salt water	7 (4.0)
Licorice	7 (4.0)
Soda water	5 (2.9)
Sea grass	5 (2.9)
Adlay	1 (0.6)
<i>Houttuynia cordata</i>	1 (0.6)
Pasture	1 (0.6)
Oriental medicine	98 (56.0)
Herbal remedy	93 (53.1)
Acupuncture	35 (20.0)
Topical agents	4 (2.3)
Cupping therapy	2 (1.1)
Phlebotomy	1 (0.6)
Topical applicants	73 (41.7)
Pyroligneous liquid	37 (21.1)
Aloe	31 (17.7)
Aroma oil	15 (8.6)
<i>Houttuynia cordata</i>	10 (5.7)
rifoliolate orange	8 (4.6)
Vinegar	6 (3.4)
Honey	4 (2.3)
Sulphur	3 (1.7)
Red clay	2 (1.1)
Mugwort	2 (1.1)
Health supplements	60 (34.3)
Chlorella	29 (16.6)
Multivitamins	20 (11.4)
Red ginseng	19 (10.9)
Aloe	17 (9.7)
Green tea	11 (6.3)
Cordyceps militaris	7 (4.0)
Phellinus linteus	7 (4.0)
Eleutherococcus senticosus	5 (2.9)
<i>Chrysanthemum</i>	3 (1.7)
Arrowroot vine	2 (1.1)
Bamboo salt water	2 (1.1)
Colostrum	2 (1.1)
Evening promise oil	2 (1.1)
Morinda citrifolia	2 (1.1)
<i>Saururus chinensis</i>	2 (1.1)
<i>Chamaecyparis obtusa</i>	1 (0.6)
Chitosan	1 (0.6)

Table 5 (Continued)

Types of CAM	N (%)
Mugwort	1 (0.6)
Radish	1 (0.6)
Dietary therapy	19 (10.9)
Pine nut	6 (3.4)
Adlay	5 (2.9)
Milk	4 (2.3)
Tomato	4 (2.3)
Broccoli	3 (1.7)
Green tea	3 (1.7)
Walnut	3 (1.7)
Bean curd	2 (1.1)
Blue fish	2 (1.1)
Sesame	2 (1.1)
Black sesame	1 (0.6)
Brown rice	1 (0.6)
Egg	1 (0.6)
Essential fatty acid	1 (0.6)
Japanese eel	1 (0.6)
Schisandra chinensis baillon	1 (0.6)
Spinach	1 (0.6)
Pine nut	1 (0.6)
Vitamine	1 (0.6)
Water parsley	1 (0.6)

predominantly used in patients with AGA, whereas the use of oriental medicine in patients with AGA was relatively lower than that of patients with AD and psoriasis. These results suggest that the location of the skin diseases may be closely related to the selection of treatment modalities by the patients who had used CAM.

With respect to the concerns of conventional medicine, 51.6% of the total 678 respondents had negative concerns about conventional dermatologic treatments. The main reasons for such concerns were 'frequent adverse events' (25.7%) and that the effects were 'temporal in effect or did not cure' (19.5%). Given the chronic course and the frustrating nature of the diseases, it is not surprising that patients with the disease seek safer and more effective treatments other than conventional medicine.^{1,4,9} We believe these misconceptions of conventional medicine can cause deterioration of the doctor-patient relationship and of patient compliance. Therefore, physicians should counsel and educate their patients in detail about the progression of the disease, the treatments and the adverse effects to reduce the negative perceptions of conventional medicine.

The reasons for considering and using CAM varied. The main reason for seeking CAM in the present study was 'recommendations from family members and friends' (2.0%). This is consistent with the results reported by Johnston *et al.* who found that their patients were from traditionally close-knit families that were composed of ethnic minorities.³ In addition, our patients also had

Table 6 Details of CAM use among 88 psoriasis patients

Types of CAM	N (%)
Oriental medicine	64 (72.7)
Herbal remedy	60 (68.2)
Acupuncture	23 (26.1)
Cupping therapy	4 (4.5)
Bath therapy	39 (44.3)
Salt water	12 (13.6)
Softener	9 (10.2)
Green tea	7 (8.0)
Rice water	4 (4.5)
Balneotherapy	4 (4.5)
Hardwood charcoal	4 (4.5)
Mugwort	4 (4.5)
Deep sea water	2 (2.3)
Immersion bath formula	2 (2.3)
Seaweed	2 (2.3)
Soda water	2 (2.3)
Bamboo salt water	1 (1.1)
Wheat flour	1 (1.1)
Pine needle	1 (1.1)
Pyroligneous liquid	1 (1.1)
<i>Rhododendron indicum</i>	1 (1.1)
Sweet flag	1 (1.1)
<i>Vitis ficifolia</i> var	1 (1.1)
Health supplements	33 (37.5)
Aloe	15 (17.0)
Chlorella	12 (13.6)
Green tea	12 (13.6)
Red ginseng	7 (8.0)
<i>Cordyceps militaris</i>	6 (6.8)
Multiple vitamins	6 (6.8)
Phellinus linteus	4 (4.5)
Eleutherococcus senticosus	4 (4.5)
Radish	3 (3.4)
Bamboo salt water	2 (2.3)
<i>Chrysanthemum</i>	2 (2.3)
Roast grain	2 (2.3)
Arrowroot vine	1 (1.1)
Colostrum	1 (1.1)
Morinda citrifolia	1 (1.1)
Mugwort	1 (1.1)
Topical applicants	15 (17.0)
Pyroligneous liquid	10 (11.4)
Aloe	5 (5.7)
Seaweed	3 (3.4)
Mugwort	2 (2.3)
Rice water	2 (2.3)
Vineagar	2 (2.3)
Aroma oil	1 (1.1)
Camellia oil	1 (1.1)
Deep sea water	1 (1.1)
Pine needle	1 (1.1)

Table 6 (Continued)

Types of CAM	N (%)
Red ginseng powder	1 (1.1)
Trifoliate orange	1 (1.1)
Dietary therapy	15 (17.0)
Milk	5 (5.7)
Cucumber	4 (4.5)
Walnut	2 (2.3)
Egg	2 (2.3)
Adlay	2 (2.3)
Raw chestnut	2 (2.3)
Pine nut	1 (1.1)
Sesame	1 (1.1)

motives that consisted of a 'desire to try all potential treatments' (60.6%), which may be related to patients actively taking part in their own healthcare. It also would be conceivable for a treatment response or outcome to be linked to the use of CAM. Many patients (158, 37.5%) replied that they received information about CAM from the media. This means that a considerable number of the patients get their information from unproven sources, and it suggests that more specialized systems are needed in the process of receiving CAM.

Unfortunately, no study that provides sufficient evidence of the benefits of CAM has been reported.^{1,4,10} In addition, because there are a vast number of CAM types, as shown in this study, it is difficult to properly assess the therapeutic effects of CAM. In this situation, the only valuable index that can be used to evaluate the therapeutic effects may depend on subjective evaluations or patients' satisfaction of the CAM use. As shown in Table 9, the proportion of patients who believe that CAM helped their skin condition with satisfactory results was relatively low (16.1% of patients with AGA, 31.7% of patients with AD and 15.0% of patients with psoriasis). This result implies that the majority of therapeutic modalities assessed in the present study were insufficient in providing robust evidence of the benefits of CAM. Interestingly, the proportion of AD patients (31.7%) who were satisfied with CAM use was higher than that of patients with AGA (16.2%) and psoriasis (15.1%). Furthermore, compared with other treatment modalities, dietary therapy in AD patients was the most satisfactory modality in 42.1% of the patients. Our findings are in agreement with the results from the previous study by Johnston *et al.* who reported that the proportion of patients who showed a beneficial effect of unsupervised dietary manipulation increased from 10% to 39%.³ However, it is difficult to ascertain the significance and meaningfulness of these findings because the results for the satisfaction of the CAM use were investigated completely from patients' subjective assessments.

Table 7 Concerns of conventional medicine among the 678 respondents

	AGA (n = 235)	AD (n = 254)	Psoriasis (n = 189)	Total (n = 678)
Patients with negative concerns about conventional medicine	115 (48.9%)	87 (34.3%)	148 (78.3%)	350 (51.6%)
The ambiguity of where to do therapy	41 (17.4%)	4 (1.6%)	1 (0.5%)	46 (6.8%)
Frequent adverse events	29 (12.3%)	14 (5.5%)	131 (69.3%)	174 (25.7%)
Insufficient or lack of efficacy	4 (1.7%)	16 (6.3%)	19 (10.1%)	39 (5.8%)
Temporal in effect or did not cure	23 (9.8%)	60 (23.6%)	49 (25.9%)	132 (19.5%)
Less accessible	29 (12.3%)	17 (6.7%)	43 (22.8%)	89 (13.1%)
Patient without negative concerns about conventional medicine	120 (51.1%)	167 (65.7%)	41 (21.7%)	328 (48.4%)

Bold face indicates the most common concerns of conventional medicine in each disorder and total.

Table 8 Motives for CAM use among the 421 respondents

	AGA (n = 158)	AD (n = 175)	Psoriasis (n = 88)	Total (n = 421)
Recommendations from family members and friends	63 (39.9%)	69 (39.4%)	51 (58.0%)	303 (72.0%)
Recommendations from pharmacist or herbalist	6 (3.8%)	9 (5.1%)	4 (4.5%)	32 (7.6%)
Recommendations from physicians	16 (10.1%)	9 (5.1%)	3 (3.4%)	40 (9.5%)
Information from the media	50 (31.6%)	31 (17.7%)	23 (26.1%)	158 (37.5%)
Desire to try all potential treatments	43 (27.2%)	54 (30.9%)	52 (59.1%)	255 (60.6%)
Adverse events from conventional medicine	17 (10.8%)	23 (13.1%)	15 (17.0%)	93 (22.1%)
Unsatisfying results from conventional medicine	24 (15.2%)	33 (18.9%)	45 (51.1%)	180 (42.8%)
No specific motivation	8 (5.1%)	10 (5.7%)	6 (6.8%)	40 (9.5%)

Bold face indicates the most common motives for CAM in each disorder and total.

Table 9 Patients' satisfaction with CAM use

	Types of CAM	Total no. used CAM	Excellent	Good	Fair	Disappointing	Very disappointing
AGA	Dietary therapy	46	1 (2.2%)	3 (6.5%)	16 (34.8%)	8 (17.4%)	18 (39.1%)
	Health supplements	25	1 (4.0%)	1 (4.0%)	13 (52.0%)	5 (20.0%)	5 (20.0%)
	Massage	23	0 (0.0%)	3 (13.0%)	7 (30.4%)	5 (21.7%)	8 (34.8%)
	Oriental medicine	17	1 (5.9%)	2 (11.8%)	6 (35.3%)	4 (23.5%)	4 (23.5%)
	Topical applicants	118	3 (2.5%)	22 (18.6%)	37 (31.4%)	21 (17.8%)	35 (29.7%)
	Total	229	6 (2.6%)	31 (13.5%)	79 (34.5%)	43 (18.8%)	70 (30.6%)
AD	Bath therapy	100	4 (4.0%)	34 (34.0%)	38 (38.0%)	18 (18.0%)	6 (6.0%)
	Dietary therapy	19	1 (5.3%)	7 (36.8%)	8 (42.1%)	2 (10.5%)	1 (5.3%)
	Health supplements	60	1 (1.7%)	16 (26.7%)	21 (35.0%)	17 (28.3%)	5 (8.3%)
	Oriental medicine	98	3 (3.1%)	22 (22.4%)	41 (41.8%)	26 (26.5%)	6 (6.1%)
	Topical applicants	73	2 (2.7%)	21 (28.8%)	29 (39.7%)	17 (23.3%)	4 (5.5%)
	Total	350	11 (3.1%)	100 (28.6%)	137 (39.1%)	80 (22.9%)	22 (6.3%)
Psoriasis	Bath therapy	39	0 (0.0%)	7 (17.9%)	13 (33.3%)	8 (20.5%)	11 (28.2%)
	Dietary therapy	15	0 (0.0%)	1 (6.7%)	5 (33.3%)	5 (33.3%)	4 (26.7%)
	Health supplements	33	2 (6.1%)	5 (15.2%)	12 (36.4%)	7 (21.2%)	7 (21.2%)
	Oriental medicine	64	2 (3.1%)	6 (9.4%)	12 (18.8%)	28 (43.8%)	16 (25.0%)
	Topical applicants	15	1 (6.7%)	1 (6.7%)	3 (20.0%)	5 (33.3%)	5 (33.3%)
	Total	166	5 (3.0%)	20 (12.0%)	45 (27.1%)	53 (31.9%)	43 (25.9%)

Bold face indicates the most common degree of patient's satisfaction in each disorder and total.

There are several limitations to our study. The use of CAM may be influenced by cultural backgrounds and ethnic experiences,^{1,4,10} and therefore these results, which were obtained in Korean patients, may not be applicable to other countries. In addition,

because this was a hospital-based study of attending tertiary referral centres, the results may not be generalized to general populations. Reliability and validity of questionnaire were also not fully estimated in present study.

It is clear that physicians' awareness of CAM is important to guide patients to access the benefits and risks of the use of CAM. This highlights the importance of properly conducted scientific research studies of the safety, as well as the efficacy, of CAM. Our results have major implications in that this is the first report to describe the use of CAM in AGA patients and to compare the usage patterns of patients with other common dermatologic disorders (AD and psoriasis). We also expect that the present study will provide fundamental data for future studies related to CAM.

Acknowledgement

This article was supported by Bumsuk Academic Research Fund in 2010.

References

- 1 Smith N, Weymann A, Tausk FA, Gelfand JM. Complementary and alternative medicine for psoriasis: a qualitative review of the clinical trial literature. *J Am Acad Dermatol* 2009; **61**: 841–856.
- 2 Hughes R, Ward D, Tobin AM, Keegan K, Kirby B. The use of alternative medicine in pediatric patients with atopic dermatitis. *Pediatr Dermatol* 2007; **24**: 118–120.
- 3 Johnston GA, Bilbao RM, Graham-Brown RA. The use of complementary medicine in children with atopic dermatitis in secondary care in Leicester. *Br J Dermatol* 2003; **149**: 566–571.
- 4 Ernst E. Prevalence of use of complementary/alternative medicine: a systematic review. *Bull World Health Organ* 2000; **78**: 252–257.
- 5 Ben-Arye E, Ziv M, Frenkel M, Lavi I, Rosenman D. Complementary medicine and psoriasis: linking the patient's outlook with evidence-based medicine. *Dermatology* 2003; **207**: 302–307.
- 6 Clark CM, McKay RA, Fortune DG, Griffiths CE. Use of alternative treatments by patients with psoriasis. *Br J Gen Pract* 1998; **48**: 1873–1874.
- 7 Ock SM, Choi JY, Cha YS *et al.* the use of complementary and alternative medicine in a general population in South Korea: results from a national survey in 2006. *J Korean Med Sci* 2009; **24**: 1–6.
- 8 Hanifin JM, Rajka G. Diagnostic features of atopic dermatitis. *Acta Derm Venereol (Stockh)* 1980; **92**(Suppl.): 44–47.
- 9 Muscat M. 'State of Center,' international research top agenda of 10th NACCAM meeting. National Advisory Council for Complementary and Alternative Medicine. *Altern Ther Health Med* 2002; **8**: 20–22.
- 10 Anderson PC, Dinulos JG. Atopic dermatitis and alternative management strategies. *Curr Opin Pediatr* 2009; **21**: 131–138.
- 11 Fleischer AB Jr, Feldman SR, Rapp SR, Reboussin DM, Exum ML, Clark AR. Alternative therapies commonly used within a population of patients with psoriasis. *Cutis* 1996; **58**: 216–220.