

Complementary and Alternative Medicine in Rheumatoid Arthritis: No Longer the Last Resort!

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Abstract Complementary and alternative medicine (CAM) has become popular with consumers worldwide and accounts for significant private and public health expenditures. According to earlier reports, the prevalence of CAM use by rheumatoid arthritis (RA) patients in the United States is anywhere between 28% and 90%. Extensive use among RA patients and the limited knowledge among physicians had confirmed the need to evaluate the increasing prevalence of various CAM modalities. The primary aim of this study was to identify the incidence of CAM usage among our RA patients. Additionally, we aimed to correlate patient demographics and disease characteristics with the use of specific CAM modalities. An analysis of data extracted from our institution's RA longitudinal registry was performed. The patients were asked to select from a list the modalities they were currently using and/or had used in the past. Of patients, 75.9% reported current or past use of CAM with >10% using 12 different modalities. Nutritional supplements and touch therapies were the most widely used overall, with mind–body therapies more prevalent among younger patients. CAM users were found to have more extra-

articular manifestations and fewer comorbidities than non-CAM users. The use of CAM among RA patients is widespread with a broad spectrum of CAM modalities being used in early stages of the disease, frequently in conjunction with mainstream conventional treatments. Therefore, CAM may no longer be considered the rheumatoid patients' last resort.

Keywords complementary and alternative medicine · CAM · alternative therapy · rheumatoid arthritis

Introduction

Complementary and alternative medicine (CAM) is gaining popularity and usage in western societies and accounts for significant private and public health expenditures [1]. An estimated 40% to 60% of Americans use CAM to manage various medical conditions, and 33% of them cite pain as the primary reason [2]. Arthritis is one of the foremost diseases for which patients seek CAM options [3, 4]. Its use in Rheumatology tends to be higher than in the general population, ranging between 28% and 90% [5], although patients often do not volunteer information about CAM use to their physicians. Reports have shown that more than 70% of patients using CAM modalities never mention these products to their physicians [5]. Thus, an invisible parallel “mainstream” of alternative care exists in the United States, and little is known by physicians about its prevalence, safety, efficacy, and mechanism of action. Therefore physicians may think of rheumatoid arthritis (RA) patients who utilize CAM, as a uniform group of severely affected patients, with chronic intractable pain, multiple comorbidities and partial or no response to mainstream therapies, who may even have lost faith in traditional medicine. Choice of CAM therapy reflects each individual patient's personal and cultural beliefs and is not necessarily associated with specific demographic or disease characteristics. The purpose of this study was to identify the incidence of CAM usage, and to analyze and compare the demographic and disease characteristics associated with use of specific alternative therapies in RA.

Level IV: Retrospective Case Series

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Each author certifies that his or her institution has approved the reporting of these cases, that all investigations were conducted in conformity with ethical principles of research.

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Methods

An analysis of data extracted from our institution's RA longitudinal registry was performed. The registry contains demographics, baseline RA information, use of CAM, medication history, Charlson Comorbidity Index (CCI) scores, clinical assessment of disease activity (e.g., morning stiffness, joint pain), functional disability measured by the Health Assessment Questionnaire (HAQ), and the Rheumatology Attitudes Index. At the time of the study, 166 patients with RA had been recruited and had given informed consent to participate in the registry.

All subjects had been seen by a rheumatologist on at least two occasions at our tertiary care institution before they were allowed to enroll in the registry. Baseline patient interviews were conducted at the time of patient's routine office visit. Corresponding follow-up formats of these questionnaires were administered to patients every 6 months on a continuing basis. These interviews were complemented by regular, standardized medical record review and physician queries to obtain laboratory and imaging data, and to confirm information provided by the study subjects.

Patients reporting a history of CAM use were identified and compared to non-users. Several demographic and RA disease characteristics were compared between the two groups using Student's *t* test for continuous variables and Mann–Whitney *U* for categorical variables. A complete list of CAM modalities, as described in "The Arthritis Foundation's guide to Alternative Therapies" was included. The patients were asked to select from the list modalities they were currently using and/or had used in the past. Only statistically significant differences are reported ($p < 0.05$).

Results

Of the 166 RA subjects studied, 126 (75.9%) reported current or past usage of CAM, with >10% of our patients using 12 different modalities (Table 1). While there was occasional mention of CAM use in the patients' medical records, this percentage is derived from patient reported data, recorded at the registry's questionnaires. A wide spectrum of CAM modalities are used, often in combination, by the majority of RA patients. The most widely used form of CAM modalities were nutritional supplements (52.4%), and touch therapies (50.6%).

When compared to non-users, CAM users were more likely to have more extra-articular manifestations of disease (0.95 ± 1.2 vs. 0.55 ± 0.8) and have failed a higher number of disease modifying anti-rheumatic agents (DMARDs) in the past (2.01 ± 1.8 vs. 1.5 ± 1.2 , $p < 0.05$). When the individual therapies or groups of therapies were compared between the two groups, unexpected associations became apparent (Table 2). The users of mind–body therapies (31.3%) tended to be younger (mean age 54 ± 20 vs. 62 ± 14 years, $p = 0.012$) and fulfilled a higher number of individual American College of Rheumatology (ACR) criteria (5.92 ± 1.1 vs. 5.42 ± 1.2 , $p = 0.013$); whereas the users of Yoga, Tai Chi, or Qi Chong (18.7%) had more years of formal education (16.5 ± 2.5 vs. 14.6 ± 3.5 years, $p = 0.001$) and reported less arthritic pain (VAS 3.2 ± 2.8 vs. 4.5 ± 2.9 cm, $p = 0.033$). As a group, when supplement usage alone was excluded, non-supplement users had fewer comorbidities (CCI 1.85 ± 0.9 vs. 2.31 ± 1.6 , $p = 0.048$). Nutritional supplements were widely used (52.4%), especially among younger patients (mean age 57.0 ± 15 vs. 63.1 ± 15 years, $p = 0.009$).

Table 1 Frequency distribution table for the use of CAM modalities by RA patients

CAM therapy used	Patient's response ($n=166$)		% usage
	Yes	No	
Mind body techniques			
1. Meditation	36	130	20.2
2. Biofeedback	5	161	2.8
3. Visualization/guided imaginary	16	150	8.9
4. Hypnosis	1	165	0.6
5. Relaxation	29	137	16.3
Martial arts			
6. Relaxation	29	137	16.3
7. Yoga	19	147	10.7
8. Tai Chi	18	148	10.1
Touch therapy			
9. Massage	60	106	33.7
10. Acupuncture	45	121	25.3
11. Acupressure	10	156	5.6
Herbs and supplements			
12. Chondroitin sulphate	28	138	15.2
13. Copper	6	160	2.8
14. Echinacea	6	160	2.8
15. Gin-soaked raisins	5	161	2.2
16. Gingko biloba	13	153	6.7
17. Glucosamine	41	125	23
18. Green tea	19	147	10.1
19. SAM-E	5	161	2.2

Table 2 Users vs. non-users of CAM therapies among rheumatoid arthritis patients

CAM therapy (% use)	Users	Non-users	<i>p</i> value
1. Mind body techniques (31.3%)			
a. Age group (in years)	54±20	62±14	0.012
b. Number of ACR criteria met	5.92±1.1	5.42±1.2	0.013
c. Extra-articular manifestations	1.27±1.4	0.67±0.8	0.006
2. Martial arts (18.7%)			
a. Education status (in years)	16.5±2.5	14.6±3.5	0.001
b. Pain severity (visual analogue scale)	3.2±2.8	4.5±2.9	0.033
3. Touch therapy (50.6%)			
a. DMARDs failure rates	2.16±1.9	1.61±1.53	0.042
4. Any form of described alternative therapy (35.5%)			
a. Number of ACR criteria met	5.74±1.2	5.29±1.3	0.022
b. Extra-articular manifestations	1.03±1.2	0.54±0.7	0.001
c. Charlson comorbidity score	1.85±0.9	2.31±1.6	0.048
5. Nutritional supplements (52.4%)			
a. Age group (in years)	57±15	63±15	0.009
b. Disease duration (in years)	13.8±11	17.9±13	0.041
c. Chi component of health assessment questionnaire (HAQ)	0.86±0.7	0.67±0.5	0.05
d. Fatigue (in cm)	4.95±3.1	3.89±2.9	0.029
6. Use of Anything (75.9%)			
a. Extra-articular manifestations (Only)	0.95±1.2	0.55±0.8	0.046
b. DMARDs failure rates	2.01±1.8	1.5±1.2	0.045

with shorter disease duration (13.8±11 vs. 17.9±13 years, $p=0.041$) and who experienced more fatigue (4.95±3.1 vs. 3.89±2.9 cm visual analogue scale, $p=0.029$). Interestingly, there was no association between the HAQ disability score and any of the above CAM modalities.

Discussion

CAM treatment has traditionally been thought of “alternative” treatment, in the place of mainstream treatments and often used in chronic diseases as a “last resort”, after all other measures had been used unsuccessfully or had unacceptable side effects. In our study, we tried to identify the actual use of CAM in a cohort of patients receiving mainstream medical care and we attempted to identify demographic and clinical factors associated with its use in general and also the choice of individual CAM treatments.

Our study had several limitations, mostly reflecting the methodology followed, and possible biases related to the patient cohort studied. The cross-sectional design of this analysis, the timing of recruitment and interview of patients, and the data collection methodology precluded evaluation of CAM use patterns as it related to disease severity as measured by instruments such as the DAS-28 score. The study format also did not permit us to determine whether use of CAM was influenced by previous or current DMARD therapy and whether it influenced in any way patients’ decisions regarding mainstream therapy. Furthermore, the cohort studied may not reflect the actual US population, as it consisted of an RA population living in a major metropolitan area with relatively high education and potentially enhanced access to medical care. Thus, the results may not be generalizable to the entire RA population

and may not reflect trends in other parts of the country or the world.

In this study, 75.9% of our patients reported current or past use of CAM with >10% using 12 different modalities. A wide spectrum of CAM modalities are used, often in combination, by the majority of RA patients. The most widely used form of CAM modalities were nutritional supplements (52.4%), and touch therapies (50.6%). The probable reason behind such high use of nutritional supplements is that they have been commercially popularized for the treatment of RA. In contrast, the high percentage use of touch therapy techniques is related to their traditional role in the cure of musculoskeletal complaints [6]. Moreover, the prevalent use of mind body therapies and nutritional supplements among younger population suggests the existence of a trend for usage of these modalities in early stages of the disease. Previous investigations have reported the use of CAM modalities by elderly patients with longer disease duration, chronic debilities and less educational status [1, 7, 8]. In contrast, our study revealed a trend of CAM usage among younger patients with shorter disease duration, less arthritic pain, and high educational status. Furthermore, we were surprised that no association was seen between CAM use and disability, as measured by the HAQ disability index.

Past surveys have implied that the use of CAM in the self-directed therapy for RA varies between 28% and 90% [9]. This disparity may stem from the varying characteristics of the patient populations surveyed, methods of collecting information, and definitions of CAM. The motivation of patients to try CAM is complex; the willingness to take control of their health-care, the desire to try everything available, the mass-media pressure, and the erroneous notion that CAM is without risks. The strikingly high rate of CAM use may reflect the unfulfilled needs of

these patients while receiving specialized care. It is commonly held that patients choose to use CAM because they are dissatisfied with conventional treatments that they consider to be ineffective, dangerous, impersonal, or costly [10, 11]. However, it has been pointed out that disenchantment with conventional medicine is not necessarily the reason why patients turn to CAM [12]. This appears to be supported by a previous study that reported that users of alternative health care are no more dissatisfied with or distrustful of conventional care than nonusers [13]. The use of CAM is not mutually exclusive of mainstream treatments, but can be used as an adjunct treatment by an RA patient population that also seeks traditional care and uses traditional and/or biologic DMARDs. However, our data may be biased by the fact that this was a patient cohort followed at a tertiary referral center and were probably less likely to dismiss traditional treatments and consider CAM as a DMARD alternative.

Evidence supporting the efficacy of these widely used CAM modalities is an issue of significant concern. Despite high use of these modalities among RA patients, no evidence-based (clinical randomized trials) results are available for their efficacy and safety. Many investigations on CAM modalities have shown consistent beneficial outcomes for the treatment of RA. However, most of them were based on animal models of RA, and claim an insufficient evidence for the efficacy of CAM modalities in human medicine. Furthermore, many human studies of CAM modalities in RA were marred by poor methodology and/or small number of subjects studied [14, 15]. On the other hand, the current knowledge vacuum characterizing many CAM modalities, especially their clinical efficacy and mechanism of action, does not justify the a priori disapproval of CAM by modern medicine; it should rather offer a stimulus for well-executed clinical trials to validate or refute the clinical claims made for CAM modalities.

This report, as well as others, demonstrates that use of CAM in RA patients' is widespread with a broad spectrum of CAM modalities are used, often in combination, by the majority of RA patients. Specific demographic and disease characteristics are associated with distinct subsets of CAM modalities. CAM is often used in early stages of the disease, in conjunction with mainstream treatments. Choice of CAM modalities can also be influenced by the symptoms and signs of the disease. For example, in our cohort patients with less background musculoskeletal pain were more

likely to participate in martial art activities, probably due to greater ease and less pain associated with movement. There is no association with disability, as measured by the HAQ disability index. Therefore, CAM is not, as previously thought, RA patients' last resort.

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