



Effects of Qigong Therapy on Arthritis: A Review and Report of a Pilot Trial

Kevin W Chen¹ and Tianjun Liu²

¹University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ, USA, and World Institute for Self-Healing, Inc., Middlesex, NJ, USA

²Laboratory of Qigong Research, Beijing University of Chinese Medicine, Beijing, China

Abstract

Background: Patients with chronic pain, like arthritis, are increasingly seeking alternatives to Western medicine. Many have benefited from acupuncture, a traditional Chinese medicine (TCM) therapy. TCM the-

ory purports that arthritis is due to a blockage of the qi flow. Qigong therapy, like acupuncture, is said to alter qi flow and strengthen internal qi, either through self-practice or through external qi emission.

Objective: To review the literature of qigong therapy for arthritis, to help further understanding of the possible applications of qigong therapy in pain relief, and to report the results of an open pilot study of external qi therapy for arthritis.

Methods: Literature derived from Medline, Qigong Database, China National Knowledge Infra-structure (CNKI), and the library database at the Beijing University of Medicine cover both the reviews of open trials without control and randomized control trials. In our open trial, 10 patients with arthritis were recruited, and six of them completed all 3 treatments and a 1-month follow-up exam.

Measures: In our pilot study, the visual analogue scales (VAS) on pain and mood were used pre- and post-treatment. Other measures included the physical disability scale; the Spielberger anxiety scale, and the swollen/tender joint count.

Results: All patients in our study reported some degree of symptom relief, reduction in pain and negative mood, a decreased anxiety score, and reduced active pain/tenderness in joints (except one subject), and reduction in movement difficulty scores. Two participants reported complete relief without any pain 1 month after the treatment.

Corresponding Author:

Kevin W Chen, PhD, MPH

Department of Psychiatry

UMDNJ – Robert Wood Johnson Medical School

671 Hoes Lane West

UBHC-D453

Piscataway, NJ 08854

Fax: 732-235-5818

E-mail: chenke@umdnj.edu

Acknowledgement:

The authors would like to thank Dr. G. Rihacek and master Binhui He for their involvement and significant contribution to the open trial of the pilot study; and also the volunteers at the World Institute for Self Healing (<http://www.wishus.org>) for their help with the data collection and literature research. The Chinese literature review was partially supported by a research grant from the Qigong Institute in California (<http://www.qigonginstitute.org>). We also appreciate Mr. Liu Feng for his assistance in the literature review, and Dr. Ley A. Killeya-Jones for her help in editing and commenting on an earlier version of the manuscript.

MEDICAL PARADIGM

Conclusions: The literature review suggests that there is strong evidence for a therapeutic effect of qigong on reducing pain and relieving the symptoms of arthritis. Although our pilot trial is far from conclusive due to the small sample size without control, the results suggest that further studies are warranted to determine the efficacy of qigong therapy for arthritis with a larger sample.

Keywords: qigong, bioenergy therapy, energy medicine, arthritis, review, pain relief, anxiety, functional movement.

Introduction

According to the Arthritis Foundation®, approximately one out of seven people in the United States have arthritis of some kind. It is the number one cause of disability in the US and limits everyday activity for approximately seven million people. Although current pharmacological therapy is usually effective in relieving symptoms, it does not provide an effective cure and can have serious drawbacks, such as toxicity and high costs. Many patients now seek non-Western medical approaches to treat their arthritis problems, including musculoskeletal therapies (1,2) and other methods of physical and emotional pain relief (3). An effective non-pharmacological therapy for arthritis that is without side effects and returns a sense of self-efficacy to the patient would be an important addition to our armamentarium. Qigong, a family of traditional Chinese medicine therapies shows promise in this direction.

What is Qigong?

Qigong (pronounced chi kung) is a general term for a wide variety of traditional Chinese energy exercises and therapies. Traditional Chinese medicine (TCM) posits the existence of a subtle energy (qi) that circulates throughout the body. Strengthening or balancing qi can improve health and ward off

disease. The Chinese have practiced qigong for thousands of years. Historically, qigong traditions were passed from generation to generation in a private and secret manner. Only recently has it become a public health practice in China. It has been reported that today, more than 100 million people practice qigong in China and more practice it around the world to treat diseases ranging from hypertension and arthritis to cancer and HIV (4-8).

The word qigong is a combination of two Chinese ideograms: "qi," meaning "breath of life", or "vital energy," and "gong," meaning "skill or achievement," which implies time accumulation. In general, "Qigong is a self-training method or process in which qi and yi (intention) are cultivated through adjustment of body posture, breathing and mental state to achieve the optimal state of both body and mind. The various qigong forms may involve techniques such as relaxation, breath adjustment, slow movement, mind regulation, guided imagery, biofeedback, mindfulness meditation, or advanced mind-body integration. Although most qigong forms might have some health benefits, they were not created for the purpose of healing. Only medical qigong has the primary focus of treating illness or curing disease.

According to TCM theory, good health is a result of a free-flowing, well-balanced qi system, while sickness or the experience of pain is the result of qi blockage or unbalanced energy in the body. Qigong therapy in the medical qigong tradition consists of internal qigong self-practice and external qi healing. Qigong practitioners are reported to have more efficient oxygen metabolism and a slower pulse rate than the general population (8). Qigong practitioners are said to develop an awareness of qi sensations in their bodies and to use their intention to guide the qi flow.

TCM practitioners apply qi emission

MEDICAL PARADIGM

or external qi in their diagnoses and healing processes. External qi therapy (EQT) is the process in which qigong practitioners direct or emit their qi energy to help others break the qi blockage and remove the sick qi from the body. Balancing and opening the qi system relieves pain and eliminates disease (there is some similarity to therapeutic touch, which is done in the US). Although the physical and biological nature of qi remains unknown, some reports suggest "qi-emission" might induce physical, biophysical and/or biochemical alterations. For example, "qi-emission" by a qigong healer has been reported to be associated with significant structural changes in aqueous solutions, to enable the growth of Fab protein crystals (9), inhibit tumor growth in mice (10), change the conformation of biomolecules like polyglutamic acid or polylysine (11), and reduce phosphorylation of a cell-free preparation (12). Thus there is a small but growing body of scientific evidence that supports the existence of qi, as well as the healing power of qigong therapy (6,13-17).

Arthritis from the Chinese Medicine Perspective

Arthritis is called "bi zheng" (zheng = symptom) in TCM. The Yellow Emperor's Classic of Internal Medicine (a Chinese medical book written approximately 2,500 years ago) describes "bi" as "wind, cold (chilly) and damp three qi mixed in the body becoming bi. The excessive wind qi leads to movement bi, the excessive cold qi leads to pain bi, and the excessive damp qi leads to swelling bi." The Yellow Emperor's Classic also points out that "weakness of qi in the body is the cause of sickness and pain".

According to TCM literature, qi imbalance is frequently due to various physical and emotional disturbances. An internal qi imbalance occurs before any physical illness arises. In order to stay healthy and function well, people need to conduct qigong or

other exercises to keep the qi flowing smoothly so that each cell in the body gets a constant supply of this energy. Once the supply of qi to the cells becomes irregular or unbalanced, the blood flow will also become blocked in that area, the cells or related organs might start to malfunction, and disease or pain will occur (18).

TCM believes that arthritis is the result of the body being invaded by wind-cold-damp qi at a vulnerable time or place, which can easily cause qi blockage in certain joints where the wind-cold-damp qi resides. The invasion of wind-cold-damp qi can happen in different ways. For example, working too hard in bad weather, or having sex at the beach or in a cold, wet place, or touching items that are cold after giving birth could all make one extremely vulnerable to the invasion of wind-cold-damp qi (19). Therefore, the treatments for arthritis from a TCM perspective mostly focus on ridding the body of the wind-cold-damp qi, breaking the qi blockage in the painful area, and supplying the area with healthy and balanced qi (to strengthen the internal qi). Both acupuncture and qigong therapy follow the same principles in treating arthritis pain, and most of them have some reported effectiveness (14,18-21).

Thirty years ago, during US President Richard Nixon's trip to China, the American public first became aware of TCM, including acupuncture. Since then, the interest in and use of acupuncture by patients has been expanding. One of the most common uses of acupuncture has been for the treatment of musculoskeletal syndromes, including low back pain, osteoarthritis, fibromyalgia and Raynaud's phenomenon (20,21). A precise role for acupuncture has not yet been established in Western medical practice (22). The key for acupuncture therapy is the meridian system in the human body. The meridian system maps the major channels of qi flow. Although we still do not

MEDICAL PARADIGM

fully understand the mechanism of acupuncture and qi flow in the human body, it has become a popular and successful alternative therapy in US healthcare. The National Institutes of Health (NIH) funded a large clinical trial at the University of Maryland to study the treatment of osteoarthritis in the knees using acupuncture, which achieved some positive results (23). Like acupuncture, qigong therapy also affects meridian qi flow, but it is easier to carry out, has faster patient response and induces less anxiety.

Although qigong as an alternative therapy has gained increased popularity in the US as well as around the world (1,3), little scientific documentation can be found in the Western literature. Thus, there is a large gap between the increased demand from consumers and physicians who want to use qigong and the available scientific evidence supporting the effectiveness of this therapy. First, this paper will present a review of some clinical studies from China examining the effects of qigong therapy on arthritis, and then we will report the results of an open trial of external qi therapy for relieving arthritis pain.

Review of Qigong Therapy for Arthritis

It is well known that qigong practice is beneficial in preventing disease and strengthening immunity (5,8), but it is less known, even in China, that this therapy can be an effective means for relieving pain and treating arthritis. However, the number of reports in the Chinese literature that document the therapeutic effect of qigong therapy on arthritis are increasing. The studies were derived from Medline, Qigong Database, China National Knowledge Infrastructure (CNKI), and the library database at the Beijing University of Medicine and include a number of clinical studies, mostly open trial without control, and some randomized control trials. The following is a summary review of this body of literature.

Open Trials without Control

Many reports on qigong treatment of arthritis were open trials without a randomized control group. They involved qigong self-practice, and sometimes, external qi therapy in combination with other therapies. For example, Zheng (24) introduced qigong therapy to 295 chronic rheumatoid arthritis patients (aged 20 to 62; 200 females, 95 males), who had failed to show any benefits from other treatments. Patients were taught to practice standing qigong everyday for 2 months. In addition, a qigong healer performed EQT or acupuncture to help promote blood circulation and relieve pain (once everyday), with 10 days counting as one treatment course. They found that 192 patients (67.2%) reported complete short-term cure (i.e., their pain disappeared, joint function was normal, rheumatoid factor in the blood was negative, the erythrocyte sedimentation rate (ESR) was normal, and they did not experience any recurrence within 6 months). Eighty-three cases (28.4%) showed significant improvement, i.e., most symptoms had disappeared, they did not experience any more pain, but the ESR was still abnormal and joint function was limited slightly. Fourteen cases (4.4%) reported some improvement in pain relief or movement function. However, there was no control group in this study, and the results might be discounted due to the possibility of placebo effects.

Li (25) conducted a similar clinical trial with 120 rheumatoid arthritis patients (aged 12-74; 32 males and 88 females) who had unsatisfactory results with other therapies. With external qi therapy (qi emission to acupoints or pain area) as the major treatment, plus acupuncture and qigong self-practice (3 hours per day) for a period of 1 to 4 months, it was reported that 23% of the patients had a complete cure, i.e., all clinical symptoms disappeared, the rheumatoid factor was negative, the ESR was normal, drug

MEDICAL PARADIGM

therapy was discontinued, and there was no symptom relapse in 6 months. Sixty-three percent had significant improvement, i.e., most clinical symptoms disappeared, they did not experience any more pain, but the ESR was still abnormal. Ten percent reported some improvement, and only 4% experienced no effect at all. Even so, this study may not be conclusive due to the lack of a control group.

Ren and Mu (26) applied a complex therapy combining acupuncture, acupressure and qigong to treat 250 rheumatoid arthritis patients (108 males, 142 females; mean age = 42.2 years). The average course of their disease was 31.5 years. Most patients (242) had tried many other therapies before this trial with little improvement. The treatment included the self-practice of qigong, once or twice daily. In addition, the qigong healer guided qi to acupoints, as well as using acupuncture and/or massage therapy to improve the microcirculation system. Each treatment course lasted 10 days. The results were as follows:

- 102 cases (40.8%) showed complete recovery, i.e., clinical symptoms disappeared with recovered movement and function
- 95 cases (38%) showed distinct improvement, i.e., symptoms disappeared with recovered function, but some felt pain when the weather changed
- 53 cases (21.2%) showed some effect, i.e., symptoms were ameliorated greatly.

The authors concluded that this kind of complex treatment was beneficial for rheumatoid arthritis patients.

Liu (27) applied EQT plus massage to 65 patients (24 males and 41 females) with scapulohumeral peri-arthritis, who had shown no improvement after physical therapy or other massage manipulations. The healer first massaged the subject's arthritic arm from shoulder to hand, and then emitted

qi to the patient's shoulder joint for 5 minutes. The EQT treatment was carried out once per week for 2 to 4 weeks. Meanwhile, the patients engaged in daily self-practice of qigong. As a result, 60 cases (92%) were completely cured, i.e., they were pain free and had normal function, 3 cases (5%) showed significant improvement, and only 2 cases (3%) showed no effect, according to the Therapeutic Efficacy Standard of Clinical Disease by the Chinese Health Department of the Army (the most common standard used by Chinese doctors). Liu concluded that qi-conducting acupressure is a gentle and good method for treating scapulohumeral peri-arthritis.

Many open trials like these can be found in the Chinese medical literature. These reports document effectiveness of qigong therapy when combined with other therapies. For example, Hu and Huang applied qigong therapy with massage to 47 patients with cervical spondylopathy, and reported that 53% were completely cured and 25% showed significant improvement (28). Gao applied a similar therapy (qigong exercise combined with massage) to treat 51 patients with cervical spondylopathy, and achieved a 73% cure rate, and a further 27% showing significant improvement in 6 months (29).

Other studies suggested the effectiveness of qigong therapy alone. For example, Li et al. treated 40 chronic rheumatoid arthritis patients who had failed to respond to other therapies with qigong (self practice of qigong 6 hours daily for 3 months), and found that 57% of the rheumatoid arthritis patients had significant clinical improvement and some were even completely cured by qigong practice (30). Xi (31) taught Guided Congenital Qigong for 10 to 30 days to 30 patients with arthromyodynia, and reported that 11 patients had been completely cured and 8 patients showed significant improvement. Although these studies lack

MEDICAL PARADIGM

compatible control groups, they appear to have offered the patients an effective alternative treatment for their "incurable" arthritis.

Randomized Control Trials

Dr. Feng (8,32) conducted a study of rheumatoid arthritis patients in a randomized control trial. Sixty patients (aged 18 to 59; 31 males and 29 females) were randomly divided into two groups: qigong therapy group and indomethacin (Indocin®, Merck & Co., Inc., Whitehouse Station, NJ) treated group (N = 30 each). The patients in the qigong group were treated by EQT, plus group qigong practice 1 to 2 hours per day for 8 weeks. The indomethacin group was treated with indomethacin (25mg) for 4 weeks (unequal treatment time). The clinical observation of the symptoms checklist and blood test results showed that significantly more patients in the qigong group reported greater improvement when compared to the indomethacin group, 83.3% vs. 56.7% (P <.01). In the qigong group, 75% of patients' ESR decreased to normal, while just 42.1% of the indomethacin group did so. In terms of the rheumatoid factor, 79.1% of the cases in the qigong group were negative, compared to 47.6% of the cases in the indomethacin group. In addition, there were no side effects reported in the qigong group, while the patients in indomethacin group reported abdominal distension (16.7%), nausea (7%), stomach ache (27%) and bleeding in the digestive system (7%). Results from this study suggest that qigong therapy might be more effective than indomethacin for treating rheumatoid arthritis.

Yuan et al. (33) treated radicular cervical spondylopathy with qigong therapy in 44 patients who met the criterion established by the Second National Conference of Cervical Spondylosis. The patients were randomly assigned into a qigong treatment group (N = 26, qigong plus Chinese herbal therapy) or the control group (N = 18, treat-

ed with Chinese herbal therapy alone). Subjects in the treatment group practiced The Shanghai Eight-Step qigong and mind-induced relaxation exercise twice daily (30 - 40 minutes each time), in addition to receiving the same Chinese herb as the controls. The Therapeutic Efficacy Criteria of Clinical Treatment by the Chinese Health Department of the Army was used for diagnosis and evaluation of treatment efficacy. After 30 days of treatment, the clinical improvement was much greater in the qigong treated group than in the control group (P <.05). Furthermore, there was greater improvement in the blood rheology indexes (including high-shear viscosity, low-shear viscosity, aggregation index of red blood cells and stiffness index) for the treatment group than for the control group (P <.05). The researchers concluded that qigong therapy had a significant effect over and above the herb alone on radicular spondylopathy, and that the mechanism of qigong therapy for this condition probably resulted in the improvement in blood rheology.

Lu (34) conducted a double-blind randomized control trial to examine the effect of massage combined with qigong therapy on cervical spondylosis. Ninety-two patients with cervical spondylopathy (aged 16 to 72 years; diagnosed by symptom and cervical vertebrate x-ray) were randomly assigned into three groups: the qigong group (N = 44), the massage group (N = 30) and the combined group (both massage and qigong, N = 28). Neck and nape qigong was practiced by the designated group twice per day, for about 30 minutes each time. The massage therapy involved a process of local relaxation, rotation reposition and traction manipulation. The treatment effect was evaluated with the Chinese criteria set up by the National Congress of Cervical Spondylosis in 1984. The average numbers of treatments were 13.7 for the combined group, 19.6 for

MEDICAL PARADIGM

the massage group and 28.3 for the qigong group. The final results showed that 94.4% of patients in the combined treatment group reported significant improvement, much higher than the proportion in the qigong only group (64.3%; $P < .01$) and the massage only group (70%; $P < .05$). The researchers concluded that the massage combined with qigong practice is better than massage or qigong alone for treating cervical spondylosis.

Huang et al. (35) conducted a similar clinical trial to compare the effect of qigong plus massage to massage therapy alone for treating cervical and scapulothoracic periarthritis. In their study, 100 patients (aged 22 to 70 years) with either cervical spondylopathy or scapulothoracic periarthritis were evenly split and assigned to one of two groups: the qigong group (21 males and 29 females) or the control group. Each group consisted of 24 patients with cervical spondylopathy and 26 patients with scapulothoracic periarthritis. The qigong group received qigong plus massage every other day for 15 to 20 minutes each session, and for 6 to 12 sessions in total. The control group received massage only for the same number of sessions. At the end of the treatment, the qigong group had 22 subjects (44%) reporting a complete cure, i.e., all symptoms had disappeared and joint function was normal. Nineteen subjects (38%) showed significant improvement, i.e., swelling and pains were greatly ameliorated and joint function was much improved. Eight subjects showed some improvement, and only one subject showed no effect. The corresponding numbers (in %) in each category of the control group were 10 (20%) reporting complete cure; 16 (32%) showing significant improvement; 17 (34%) showing some improvement; and 7 (14%) showing no effect (Chi-square = 9.41; $P < .05$).

These studies suggest that qigong might provide significant pain relief for

arthritis patients (23-35). There is urgent need for more sophisticated clinical trials with appropriate controls. Patients treated with qigong therapy have achieved complete cures according to Chinese clinical criteria. These reports motivated us to explore the effectiveness of qigong therapy. The following are the results of a preliminary open trial applying EQT in our clinic to treat chronic arthritis.

An Open Pilot Trial

An anecdotal pilot study of EQT for arthritis was undertaken to collect preliminary data. This pilot was designed as an open trial without a control. The study was anecdotal without pre-scheduling due to the tight schedule of the qigong healer when he visited the US for a short time.

Subjects

The Institutional Review Board of the University of Medicine and Dentistry of New Jersey (UMDNJ) approved this open pilot trial. The informed consent explained that qigong is a form of traditional Chinese energy medicine, but is not an approved treatment in the US. Ten patients with chronic arthritis pain (constant or daily) were recruited from a private rheumatology practice on the day of the study to participate in this open pilot trial. Nine participants were Caucasian, and one was Asian. The mean age was 58 years (ranging from 20 to 76), with seven females and three males. Four subjects had osteoarthritis of the knee and/or hip and one had osteoarthritis of the hands. Three patients had osteoarthritic spondylosis, two had rheumatoid arthritis, primarily of the upper extremities, and one had spondyloarthropathy. All expressed some confidence in complementary and alternative medicine (CAM), but only two had used CAM previously and just three had heard of qigong prior to the study.

The duration of pain ranged from 2

MEDICAL PARADIGM

months to 20 years (mean = 6.1 years). Five patients were married, three widowed and two had never married. Six patients reported a family history of chronic pain. Eight considered themselves to be religious, six had prayed for their health and four had meditated for health purposes.

Protocol

After informed consent was obtained, the patients completed a short questionnaire and were examined by a rheumatologist to confirm the diagnosis within the criteria set by the American College of Rheumatology (36-38). The patient was then seated in a quiet treatment room with the qigong healer (who did not speak or understand English) and a translator. Treatment consisted of the qigong healer administering qi emission for 5 to 10 minutes, with the duration determined by the healer's perception of qi blockage. The patient was touched from time to time to pinpoint and lightly massage the pain area. At times the healer uttered words in Chinese climaxing in a shout, representing a discharge of strong qi. After that, the healer used his hands to induce the sick qi out of the patient's body from the bottom of the feet or the fingertips.

Treatments were given on 3 consecutive days. Two subjects could not come back for the follow-up treatment due to scheduling conflicts, and two dropped out after the second treatment without giving a reason. Thus, six of the original 10 subjects completed all three treatments, completed evaluations, and were followed-up 1 month after treatment was concluded. The low completion rate was mainly due to the recruitment process, which did not allow for prior contact to establish the feasibility of scheduling.

Measures

The measurements used to evaluate improvement included visual analogue scales (VAS) for: pain (a 100mm line with verbal anchors

of "no pain" and "the worst possible pain"), mood (anchored by "the best I could feel" and "the worst I could feel") and relief (anchored by "no relief of pain" and "complete relief of pain"). Additional scales included an instrument of physical disability (39) (10 items of daily activity); the Spielberger State-Trait Anxiety Scale (40) (state part only, 20 items); and a categorical pain scale (41) (eight verbal descriptors from "no pain" to "excruciating"). The same rheumatologist performed a swollen/tender joint count for all patients at each visit.

Results

Comparison of VAS pain, as well as mood and relief scores in the 10 subjects immediately prior to and after the first treatment show that most subjects experienced improvement (Table 1). Nine subjects reported a reduction in pain (mean reduction = 30, SD = 23) and 8 reported mood improvement (mean reduction = 21.5, SD = 17); one subject reported contradictory results: more pain on the VAS, but reduced pain using the verbal descriptors. Two subjects reported "no-pain" in the categorical pain scale after the first treatment. Subjects reported various degrees of relief after the first treatment (mean = 63.7 and SD = 25).

Using non-parametric statistics to test the difference between positive (pain reduction) and negative response (pain increase), in nine out of 10 trials the patients reported reduction in pain. This could occur by chance only at $P < .01$ in a cumulative binomial probability distribution.

Only six of the 10 subjects completed the protocol due to scheduling difficulties and other unexplained reasons. Table 2 presents the results of VAS pain, mood and relief scores at the four time points of the study for the six completed cases. After the third treatment, all six subjects still reported reduction in VAS pain, ranging from 11 to 62 (mean reduction = 34.7), and increased relief

MEDICAL PARADIGM

ID #	Major Diagnosis	Pain			Negative Mood			VAS Relief
		Prior	After	Change	Prior	After	Change	
1	Lumbar spondylosis	87	72	-15	18	12	-6	76
2	RA	49	35	-14	46	53	+7	55
3	OA-at hands	72	18	-54	54	20	-34	81
4	Cervical spondylosis, fibromyalgia	75	47	-28	53	47	-6	14
5	Lumbar spondylosis	14	32	+18	50	38	-12	74
6	OA at knee	49	4	-45	50	4	-46	49
7	OA at knee amd feet	84	21	-63	16	0	-16	100
8	Spondyloarthropathy	58	32	-26	56	30	-26	61
9	OA at feet & hands, CREST syndrome	11	2	-9	45	19	-26	87
10	RA on the back	51	35	-16	27	32	+5	40
Mean		55.0	29.8	-25.2	41.5	25.5	-16.0	63.7

Table 1. VAS pain, mood, and relief score measurements made immediately prior to and after the first treatment

OA = osteoarthritis; RA = rheumatoid arthritis; CREST = Calcinosis, Raynaud's phenomenon, Esophageal motility disorders, Sclerodactyly and Telangiectasia

scores; five of the six reported reduced negative mood scores. At the 1-month follow-up, two subjects (both with osteoarthritis) reported persisting complete relief, although others reported a slight increase in pain in comparison to the measurement immediately following treatment.

Four of the six subjects had reduced active pain/ tender joints, by as much as 26 points, immediately after treatment; one had no change and one had slightly more active pain/ tenderness in the joints (Table 3); at the 1-month follow-up, four of the six subjects had a reduction in pain/ tender joint count. There were two non-responders; subject 5

with lumbar spondylosis and subject 10 with rheumatoid arthritis.

In immediate post-treatment measurements, movement difficulty was reduced in four subjects, was unchanged in one and rose slightly in one. At the 1-month follow-up scores in all subjects had diminished by a mean of about 50%; the subject with CREST and osteoarthritis reported no difficulty in movement, concordant with her report of complete relief and no pain at follow-up.

The Spielberger Anxiety Scale results demonstrated a reduction in anxiety after qigong treatment in all subjects.

MEDICAL PARADIGM

ID #	Pain				Negative Mood				Relief		
	T0	T1	T2	T3	T0	T1	T2	T3	T1	T2	T3
3	72	18	10	12	54	20	6	16	81	92	88
5	14	32	1	5	50	38	13	12	74	99	84
6	49	4	0	21	50	4	0	11	49	100	68
7	84	21	24	0	16	0	10	5	100	56	100
9	11	2	0	0	45	19	6	0	87	98	100
10	51	35	38	37	27	32	31	50	40	74	52
Mean	46.8	18.7	12.2	12.5	40.3	18.8	11.0	15.7	71.8	86.5	82.0

Table 2. VAS pain, mood, and relief scores prior to and after the first and third treatment, and at the 1-month follow-up

Note: T0 = before treatment; T1 = After 1st treatment; T2 = after 3rd treatment; T3 = 1-month follow-up after the treatment.

Discussion

Our literature review suggests that qigong therapy might provide significant improvement for patients with various arthritis conditions. The positive reports in the Chinese medical literature invite more clinical studies of this ancient therapy for treatment of chronic arthritis, and encourage us to rethink the etiology of arthritis. However, improvement in experimental design is needed with more sophisticated clinical trials to confirm these intriguing results. The literature on both qigong and acupuncture suggests that bioenergy-based therapies might be more effective than conventional Western medi-

cine for treating chronic conditions such as arthritis.

There are significant limitations in many of the reviewed studies. First, Chinese medicine classifies arthritis differently from Western medicine, and there was a lack of consistent diagnosis and evaluation criteria in China. Second, most studies lacked compatible control groups, especially the placebo-control, making their results subject to suggestibility or placebo effect to an unknown degree. Third, although qigong therapy is relatively popular in Chinese hospitals, there is no standard procedure that could be agreed upon by different practition-

MEDICAL PARADIGM

ID#	Active pain/tender joint counts					Physical disability scores					Anxiety state sore				
	T0	T2	T3	T2-T0	T3-T0	T0	T2	T3	T2-T0	T3-T0	T0	T2	T3	T2-T0	T3-T0
3	38	12	37	-26	-1	10	6	8	-4	-2	28	22	28	-6	0
5	11	10	22	-1	+11	10	12	5	+2	-5	38	27	22	-11	-16
6	14	5	1	-9	-13	15	5	13	-10	-2	43	29	31	-14	-12
7	8	8	5	0	-3	10	10	3	0	-7	29	27	23	-2	-6
9	13	2	0	-11	-13	13	7	0	-6	-13	41	Miss	20		-21
10	14	23	24	+9	+10	8	3	6	-5	-2	51	50	35	-1	-16
Mean	16.3	10.0	14.8	-6.3	-1.5	11.0	7.2	5.8	-3.8	-5.2	38.3	31.0	26.5	-6.8	-11.8

Table 3. Total Pain/Tender Joint Counts, Physical Disability Scores and Spielberger State Anxiety Scale Scores prior to and after the treatment, and at the 1-month follow-up.

Note: T0 = before treatment; T2 = after three treatments; T3 = 1 month later.

ers or healers, which makes it very difficult to implement the therapy in standard clinical trials and service. Future studies should take these points into serious consideration.

Our preliminary open trial was designed to explore the pain-relief effects of qi-gong therapy for Western arthritis patients. Our results indicate that, like many alternative therapies, EQT provided some pain-relief for most of our participants. The patients who completed all three treatments reported some improvement in pain and anxiety, as well as improvement in active pain /tender joints, and two of the participants continued to report complete resolution at the 1-month post treatment follow-up. The positive results in both the Chinese studies and the anecdotal pilot study demand further examination of qigong therapy for treatment of arthritis.

It is time to ask: How can we expand our knowledge of qi and bioenergy in the area of human health and disease? How is

bioenergy related to chronic pain such as arthritis? We are confronted with the challenge that a well-controlled trial of EQT is difficult to design and implement. Qigong therapy requires interaction between the therapist, here the qigong healer, and the patient, in essence like psychotherapy.

Sham healers have been employed in qigong studies using animals and cell lines (7,10). Utilizing sham healers is more difficult in human studies given the confidence and strong presence the master exudes. Motivated by our results in the preliminary open trial we are proceeding with a more definitive trial of EQT for treating arthritis. We hope other clinical studies will be conducted to explore the therapeutic effects of qigong therapy on various arthritis conditions.

MEDICAL PARADIGM

References

1. Chandola A, Young Y, McAlister J, Axford JS. Use of complementary therapies by patients attending musculoskeletal clinic. *J R Soc Med.* 1999 Jan; 92(1):13-6.
2. Ernst E. Complementary and alternative medicine in rheumatology. *Baillieres Best Pract Res Clin Rheumatol.* 2000 Dec; 14(4):731-49.
3. Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, Van Rompay M, et al. Trends in alternative medicine use in the United States, 1990-1997 results of a follow-up national survey. *JAMA.* 1998 Nov 11; 280(18):1569-75.
4. Mayer M. Qigong and hypertension: A critique of research. *J Altern Complement Med.* 1999 Aug; 5(4):371-82.
5. Sancier KM. Medical Applications of Qigong. *Altern Ther Health Med.* 1996 Jan; 2(1):40-6.
6. Sancier KM. Therapeutic benefits of qigong exercises in combination with drugs. *J Altern Complement Med.* 1999 Aug; 5(4):383-9.
7. Chen K, Yeung R. Exploratory studies of qigong therapy for cancer in China. *Integr Cancer Ther.* 2002 Dec; 1(4):345-70.
8. Feng LD. *Modern Qigong Science.* Beijing: Economic Science Publisher; 1994.
9. Yan X, Lin H, Li H, Traynor-Kaplan A, Xia ZQ, Lu F, Fang Y, Dao M. Structure and property changes in certain material influenced by the external Qi of Qigong. *Mater Res In-nov.* 1999; 2:349-59.
10. Chen X, Li Y, Liu G, He B. The inhibitory Effects of Chinese Taijing Five Element Qigong on Transplanted Hepatocarcinoma in Mice. *Asian Medicine.* 1999; 11:36-8.
11. Chu DY, He WG, Zhou YF, Chen BC. The effect of Chinese qigong on the conformation of biomolecule. *Chin J Somatic Sci.* 1998; 8(4):155-9.
12. Muehsami DJ, Markow MS, Muehsami PA. Effects of QiGong on cell-free myosin phosphorylation: preliminary experiments. *Subtle Energies Energy Med.* 1994; 5(1):103-4.
13. Agishi T. Effects of the external qigong on symptoms of arteriosclerotic obstruction in the lower extremities evaluated by modern - medical technology. *Artif Organs.* 1998 Aug; 22(8):707-10.
14. Wu WH, Bandilla E, Ciccone DS, Yang J, Cheng SC, Carner N, et al. Effects of Qigong on late-stage complex regional pain syndrome. *Altern Ther Health Med.* 1999 Jan; 5(1):45-54.
15. Lu ZY. *Scientific Qigong Exploration: The Wonders and Mysteries of Qi.* Malvern PA: Amber Leaf Press; 1997.
16. Chen K. An analytic review of studies on measuring effects of external Qi in China. *Altern-Ther Health Med.* In press 2004.
17. Kido M, Sato T. Measurements of biophysical and mental effect due to remote Qi healing. *J ISLIS.* 2001 Mar; 19(1):200-9.
18. Yang, JM. *Arthritis: The Chinese Way of Healing and Prevention.* Jamaica Plain, MA: YMAA Publication Center; 1996.
19. Liu H, Perry P. *The Healing Art of Qi Gong: Ancient Wisdom from a Modern Master.* New York: Warner Books, Inc; 1997.
20. Han J, Terenius L. Neurochemical basis of acupuncture analgesia. *Annu Rev Pharmacol Toxicol.* 1982; 22:193-220.
21. Lewith GT, Kenyon JN. Physiological and psychological explanations for the mechanisms of acupuncture as a treatment for chronic pain. *Soc Sci Med.* 1984; 19:1367-78.
22. NIH Consensus Developmental Panel on Acupuncture. *Acupuncture.* *JAMA.* 1998 Nov; 280(17):1518-24.
23. Berman BM, Singh BB, Lao L, Langenberg P, Li H, Hadbazy V, et al. A randomized trial of acupuncture as an adjunctive therapy in osteoarthritis of the knee. *Rheumatology (Oxford).* 1999 Apr; 38(4):346-54.
24. Zheng RC. Observed effect of Qigong therapy in treating 295 cases of rheumatoid arthritis. *China Qigong.* 1993; 3:15-6.
25. Li SH. Treating rheumatoid arthritis with Qigong: Clinical observation of 120 cases. In: *Proceedings of the Third World Conference on Medical Qigong;* 1996 Sep; Beijing, China, Pp. 136-7.
26. Ren QJ and Mu B. Clinical study of 250 cases of rheumatoid arthritis with complex treatment of acupuncture and acupressure combining with mindguiding movement qigong. *Chinese Manipulation*

MEDICAL PARADIGM

- and Qigong Therapy. 1995; 1:26-28.
27. Liu SQ. 65 Cases of scapulohumeral peri-arthritis treated by qigong acupressure and massage therapy. *Qigong and Science*. 1995; 8:21-2.
 28. Hu SL, Huang QF. 47 cases of cervical spondylopathy treated by Qi-conducting massage and preventive exercise. *China Qigong*. 1996; 7:16.
 29. Gao CL. Clinical observation of the effect of 51 cases of cervical spondylopathy treated by qigong massage with therapeutic exercise. *Chinese Manipulation and Qigong Therapy*. 1994; 3:37-9.
 30. Li QL, Nu GJ and Xu HT. Clinic observation of 40 cases in Qigong treatment of rheumatoid arthritis. In: *Proceedings of the Fourth International Symposium on Qigong*; 1992 Sep; Shanghai, China. Pp. 70-71.
 31. Xi SX. Observation of 30 cases of arthromyodynia with guided congenital-qi qigong treatment. *Qigong*. 1995; 16(6):267-8.
 32. Feng LD, Li Q, Liu Z. Therapeutic effects of emitted qi on rheumatoid arthritis. In: *Proceedings of the 3rd World Conf on Medical Qigong*; 1996 Sep; Beijing, China. Pp 137-138.
 33. Yuan SX, Fang L, and Chen ZL. Effects of qigong therapy on blood rheology in patients with radicular cervical spondylopathy. *Shanghai Journal of Traditional Chinese Medicine*. 2000; 6:38-9.
 34. Lu LJ. Clinical study of 92 patients with cervical spondylosis treated by massage combining with qigong practice. *J Zhejiang Coll TCM*. 1996; 20(1):39-40.
 35. Huang XK, Zeng QJ, Zhang SY, Xiong J. Clinical exploration of medical qigong-massage in treating cervical spondylopathy and scapulohumeral peri-arthritis. *J PLA Grad Med School*. 1996; 17(1):37-8.
 36. Arnett FC, Edworthy SM, Bloch DA, McShane DJ, Fries JF, Cooper NS, et al. The American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis. *Arthritis Rheum*. 1988 Mar; 31(3):315-24.
 37. Dougados M, van der Linden S, Juhlin R, Huitfeldt B, Amor B, Calin A, et al. The European Spondyloarthropathy Study Group preliminary criteria for the classification of spondyloarthropathy. *Arthritis Rheum*. 1991 Oct; 34(10):1218-27.
 38. Altman R, Alarcon G, Appelrouth D, Bloch D, Borenstein D, Brandt K, et al. The American College of Rheumatology criteria for the classification and reporting of osteoarthritis of the hip. *Arthritis Rheum*. 1991 May; 34(5):505-14.
 39. Fries JF, Spitz P, Kraines RG, Holman HR. Measurement of patient outcome in arthritis. *Arthritis Rheum*. 1980 Feb; 23(2):137-45.
 40. Spielberger CD. *State-Trait Anxiety Inventory for Adults (Form Y)*. Redwood City, CA: Mind Garden, Inc.; 1983.
 41. Wallenstein SL, Heidrich III G, Kaiko R, Houde RW. Clinical evaluation of mild analgesics: the measurement of clinical pain. *Br J Clin Pharmacol*. 1980 Oct; 10(suppl 2):319S-327S.