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The Professional Bulletin of Hospital for Special Surgery

Focus: Integrative Pain Management



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Highlights of Upcoming On-Site Professional Education Programs

SPRING 2004 ON-SITE PROGRAMS	DATE	TARGET AUDIENCE
New Perspectives in Tissue Regeneration	February 28, 2004	Orthopaedic surgeons, residents & fellows
Sports Medicine for the Young Athlete – 6th Annual Symposium	March 27, 2004	Pediatricians, PCP's, PA's, PT's, school nurses, athletic trainers, coaches, residents & fellows
Operative Management of Pediatric Fractures	April 16, 2004	Orthopaedic surgeons, residents & fellows
Controversies & Fundamentals in Regional Anesthesia 2004 – 8th Annual Symposium	April 24, 2004	Anesthesiologists, CRNAs, residents & fellows
A Practical Guide for Implementing Clinical Research	April 30, 2004	Physical therapists, physical therapist assistants, & occupational therapists
2nd Annual Orthopaedic Review Course 2004	May 7-8, 2004	Orthopaedic residents, fellows & practicing physicians
Orthopaedic Imaging- A Multidisciplinary Approach. What the Orthopaedic Surgeon & Musculoskeletal Physician Need to Know	May 14-15, 2004	Orthopaedic surgeons, residents & fellows
Non-Surgical Care of the Lumbar Spine	June 4, 2004	Physiatrists, primary care physicians, residents & fellows

MONTHLY 2004 ACCREDITED GRAND ROUNDS

Grand Rounds are held on a regular basis at Hospital for Special Surgery

	DAY / TIME / LOCATION
Anesthesiology Grand Rounds	Mondays & Thursdays 7 a.m. • Richard L. Menschel Education Center
Physiatry Grand Rounds	Tuesdays 7:45 a.m. • Richard L. Menschel Education Center
Radiology Grand Rounds	Wednesdays 4 p.m. • Radiology Conference Room
Rheumatology Grand Rounds	Wednesdays 8 a.m. • Richard L. Menschel Education Center
Spine Service Grand Rounds	Thursdays 7 a.m. • 3rd Floor Caspary Building Conference Room Fridays 8:30 a.m. • PSEL, 8th Floor West
Visiting Professor Lecture Series: Distinguished Research & Honorary Service Lectures	Fridays 7:30 a.m. • Richard L. Menschel Education Center

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Medication Plus Meditation: A New Protocol for Pain Management

Roberta L. Schine
Certified Kripalu Yoga Instructor

In 1967 Dr. Herbert Benson, a professor of medicine at Harvard Medical School measured the vital signs of subjects in a meditative state. He found that they used 17% less oxygen, lowered their heart rates by three beats a minute and showed changes in their brain waves.¹ This began a cascade of studies that indicate that meditation - often as an adjunct to medication — may have a role in medical care, including the management of painful conditions such as arthritis,² fibromyalgia,³ headaches,⁴ irritable bowel,⁵ rheumatic pain⁶ - and others. “Pain is a mind-body problem,” says Dr. Vijay B. Vad of the Psychiatry Department at Hospital for Special Surgery, “So combining meditation with standard medical care provides a mind-body solution.”

Many of the people who come to my meditation classes are in pain. Often their doctors refer them when medication has not worked for them.

“After several sessions in my class, people with chronic pain report taking less pain medication, being more active and feeling better in general. This is supported by a study at the University of Massachusetts Stress Clinic of patients using meditation which found that 72 percent of them achieved at least a 33 percent reduction, as measured by a pain questionnaire.”

There are three categories of meditation that I find help people with chronic pain:

1. Distraction

Since the mind is capable of having only one thought at a time, it can be trained to concentrate on something other than pain. “Meditation won’t take away your pain,” says Judith Horstman, contributing editor to *Arthritis Today*, “but it can move physical and emotional pain and distress out of the forefront of your focus.”⁷ Some points of concentration might be: a word, candle-

flame, sound or the breath. For example: Let’s bring our full attention to our breath without trying to change it in any way. Count 10 slow exhalations.

2. Mindfulness

The second category of pain meditation, called mindfulness, is the moment-to-moment awareness of experience. This form of meditation helps people witness their pain with a certain amount of detachment. As one woman told the class, “Okay, pain, you’re here but I’m not going to let you erode the quality of my life.” The Body Scan is a form of Mindfulness Meditation:

Become aware of your left foot. Observe any sensations you feel in this area: the temperature, an itch, some tension... notice how one sensation becomes another and then another. Continue with your left leg, moving, one area at a time, toward your head.

Throughout the Body Scan I remind students, “If you feel discomfort, just stay with it. Notice how pain, in the absence of fear and resistance, is merely another sensation.”

3. Guided Visualization

The third type of pain meditation involves using the imagination to travel through a fictional experience. It often produces a deep relaxation associated with symptom-reduction and helps patients deal with the part of the medical problem that is stress-related. According to Stan Chapman PhD, pain therapy specialist, psychologist and professor at Emory University School of Medicine in Atlanta, “there is a lot of evidence that pain tends to be worse when people are anxious, or when their muscles are tight.”⁸ We end class with Guided Visualization:

Imagine yourself in a beautiful place. It might be a forest, garden, beach, etc. This is your personal healing sanctuary. Notice the colors, sounds and scents. See yourself there. Now take a picture and put it in your heart so that you can return whenever you’d like.

After several sessions in my class, people with chronic pain report taking less pain medication, being more active and feeling better in general. This is supported by a study at the University of Massachusetts Stress Clinic of patients using meditation which found that 72 percent of them achieved at least a 33 percent reduction, as measured by a pain questionnaire (McGill-Melzack Pain Rating Index.) “Even more encouraging” says Jon Kabat-Zinn, Ph.D., founder of the clinic, “A follow-up study showed that about 42 percent were still practicing... three years later.”⁹

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Acupuncture as a Pain Relieving Tool

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“The NIH panel of experts on acupuncture agreed in their 1997 consensus statement² there was sufficient evidence to support effectiveness of the modality in multiple disease states. The list contained such diverse conditions as headaches, asthma, dysmenorrhea, post-operative or post-chemotherapy nausea and vomiting, and drug addiction. A significant number of the treatable items are painful musculoskeletal complaints.”

Since New York Times journalist James Reston¹ reported in 1971 on his experience of post-appendectomy acupuncture analgesia in China, most western countries have accepted acupuncture as a viable alternative to traditional medical treatments for many pathological conditions.

Yet to this day, more than 30 years after that initial account-which generated a wave of interest in this ancient oriental healing art-many American physicians still regard acupuncture as mysterious, more to be tried empirically as a less favored alternative than as a definitive treatment with specific indications.

This situation is understandable since medical literature regarding acupuncture read by most doctors usually includes some caveat about the lack of scientific evidence confirming the validity of the theories of traditional Chinese medicine (TCM). In these days of practicing evidence-based medicine, the caveats serve as a powerful hindrance to many in seriously looking at acupuncture as an intelligent choice.

Of course, like any other system of practice, one must recognize not all acupuncture is the same. The TCM method, with its holistic approach to correcting Yin Yang imbalance and promoting flow of Qi (life- or organ-specific energy), is distinctly different from the modern western approach of dry needling specific areas in the body for various conditions. Even within the TCM schools themselves, where the doctrine of “treating different diseases with the same means” and “treating the same disease with different means” is widely subscribed to, there is much variability between individual practitioners.

Given this scenario, it is little wonder reviewers attempting to make sense of “acupuncture” by conducting meta-analyses of studies usually find scant evidence to support claims of effectiveness. The truth is there is ample data, both experimental and clinical, that show reproducible benefits of acupuncture given for specific conditions in a consistent way.

The NIH panel of experts on acupuncture agreed in their 1997 consensus statement² there was sufficient evidence to support effectiveness of the modality in multiple disease states. The list contained such diverse conditions as headaches, asthma, dysmenorrhea, post-operative or post-chemotherapy nausea and vomiting, and drug addiction. A significant number of the treatable items are painful musculoskeletal complaints. They included dental and post-operative pain, carpal tunnel syndrome, tennis elbow and fibromyalgia, as well as lower back pain.

That acupuncture does effect changes in beta-endorphin and enkephalin expressions in the central nervous system has been established beyond dispute. There is also general acceptance that needle stimulation may offer pain relief via the “gate mechanism” as proposed by Melzac and Wall.³ This theory postulates that stimulation of the large nerve fibers within the muscles can “close the gate” to nerve impulses generated by the small pain fibers, thus decreasing spinal transmission of pain sensations to the higher centers.

Using electrical currents through the needles to increase stimulation is a modern modification of the traditional acupuncture technique. In 1982, animal data showed electro-acupuncture analgesia was mediated by the same endorphin receptors.⁴ Previous human volunteer studies showed varying the frequency of the stimulating current without moving the needles themselves could result in different kinds of endorphin release.⁵

A pilot study at the Hospital for Special Surgery employing electrical acupuncture to treat chronic low back pain due to degenerative spondylosis or spinal stenosis in the older patients yielded positive results indicating greater improvements, which was

maintained for four weeks after treatment compared to the control group.⁶ A second study of the same patient population using placebo-controlled acupuncture and blinded observers has been completed. Preliminary result indicates the real treatment scored better than the placebo.

The day is not far when the medical community and insurance companies alike come to regard acupuncture as mainstream as any other accepted modalities. We will be able to prescribe acupuncture therapy as a scientifically proven, evidence-based anti-analgesic tool that carries minimal complications.

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Acupuncture Research in Low Back Pain

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Low back pain is a prevalent disorder, particularly among seniors.¹ Although acupuncture is commonly used to treat low back pain, there is inconclusive research on its efficacy for this condition.² Acupuncture is frequently used as an adjunctive therapy to standard therapies for pain. At the Hospital for Special Surgery, we undertook a study to determine if acupuncture is an effective, safe adjunctive treatment to standard therapy for chronic low back pain (LBP) in older patients.

Methods

Subjects:

- Inclusion criteria:
1) LBP ≥ 12 weeks 2) age ≥ 60 years.

- Exclusion criteria:
1) spinal tumor, infection, or fracture
2) associated neurological symptoms

Interventions:

- 1) Standard therapy: Subjects continued usual care as directed by their physicians, i.e. NSAIDs, muscle relaxants, acetaminophen and back exercises.
- 2) Acupuncture: In addition, patients in this group received bi-weekly acupuncture with electrical stimulation for 5 weeks (see figure 1).

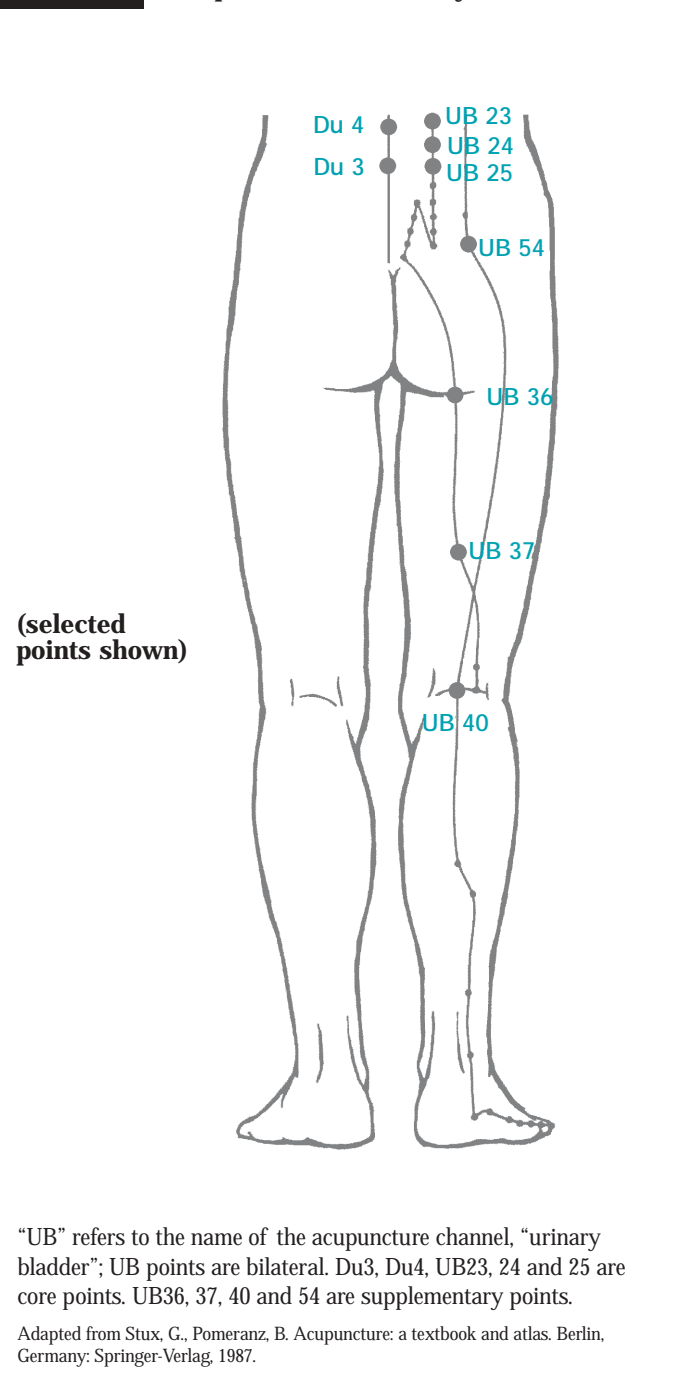
Outcome measures:

The modified Roland Disability Questionnaire (RDQ) at weeks 0, 2, 6 and 9³

Data Analysis:

The primary outcome measure was change in RDQ score between weeks 0 and 6.

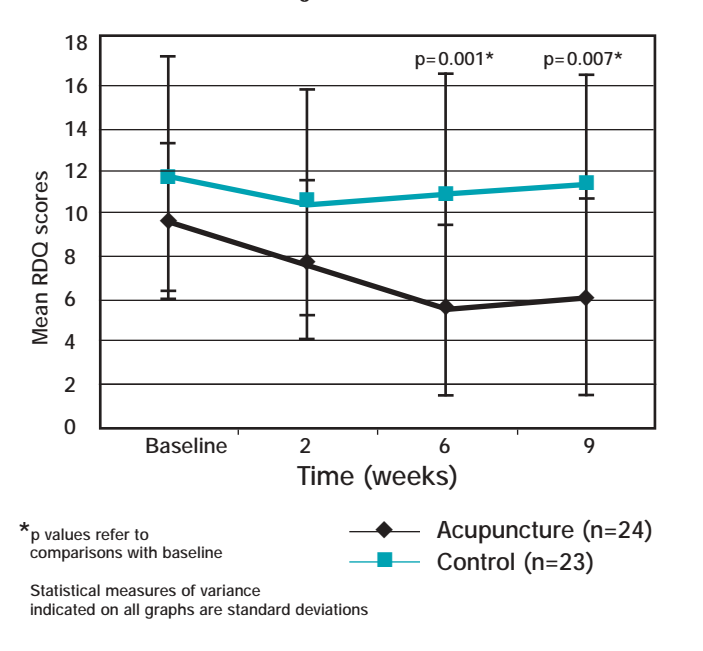
Figure 1 Acupoints Used in Study Protocol



Results

Fifty-five patients were enrolled, with eight drop-outs. Twenty-four subjects were randomized to the acupuncture group and 23 were randomized to the control group. Acupuncture subjects had a significant decrease in RDQ score of 4.1 ± 3.9 at week 6, compared to a mean decrease of 0.7 ± 2.8 in the control group ($p=0.001$). This effect was maintained up to four weeks after treatment at week 9, with a decrease in RDQ of 3.5 ± 4.4 from baseline, compared to 0.43 ± 2.7 in the control group ($p=0.007$). (see figure 2 below). Global transition score was higher in the acupuncture group, 3.7 ± 1.2 , indicating greater improvement, compared to the score in the control group, 2.5 ± 0.9 , ($p<0.001$). Fewer acupuncture subjects had medication-related side effects compared to the control group.

Figure 2 Mean RDQ scores of acupuncture and control subjects



Conclusions

Our data indicate that acupuncture is an effective, safe adjunctive treatment for chronic LBP in older patients. Our study was limited by the lack of a placebo control group. We recently completed a placebo-validation study, and plans for a full-scale, placebo controlled study are underway.

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The Healing Benefits of T'ai Chi

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T'ai Chi has been practiced for thousands of years in China to promote good health by balancing the internal energy known as Chi. The Chinese believe that circulating and balancing Chi is the secret to a long and healthy life. Early in the morning in most of the public parks in China, and also in our own Chinatown, large groups of people, mostly elderly, gather to do their daily T'ai Chi practice. When you watch their slow, graceful movements it is hard to believe these agile students are often in their 70s and 80s. Some of the more simple forms these people practice, such as T'ai Chi Chih, are often referred to as a moving meditation or Qigong (Chi Kung).

T'ai Chi has been known to have many health benefits because

of its profoundly calming effect on the nervous system. Also, the weight-bearing movements are known to improve balance and strengthen bones. However, until recently most of these benefits have been claimed by practitioners' personal experiences.

Now these claims from practitioners are being supported by scientific and medical studies. *USA Today* reported in 1996 on a study confirming the practice of T'ai Chi will normalize blood pressure. Students who had their blood pressure taken before and after a T'ai Chi class recorded a lower pressure of 10-15 points.¹

In 1990, Dr. Steve Wolf from the Department of Rehabilitative Medicine at Emory University did a study to show the benefits of T'ai Chi on balance. The end results were that older people taking part in a 15-week T'ai Chi program reduced their risk of falls by 47.5%. Those students who continued to do T'ai Chi over a 6-month period maintained improved strength and balance.²

Most recently, the *Wall Street Journal* reported the results of a study by Dr. Michael R. Irwin of the UCLA Neuropsychiatric Institute on the effects of T'ai Chi Chih on the immune system of a group with the shingles virus. Over a period of 15 weeks of three 45-minute T'ai Chi Chih classes per week, the participants in the study saw an increase of 50% in immune system response. One of the conclusions made by Dr. Irwin was T'ai Chi Chih could play an important role in protecting against other infectious diseases, such as hepatitis and HIV. Dr. Irwin is conducting a second study using more participants, which should be completed by the end of next year.³

Other studies on the effects of T'ai Chi Chih have been carried out, including studies on the physiological benefits⁴, postural control⁵, Rheumatoid Arthritis⁶, cures of hypertension, asthma, insomnia and faster recovery from long-term illness⁷, and delay in the decline of cardio-respiratory function in older adults.⁸

During my last seven years as a teacher of T'ai Chi Chih, I have had many reports from students on other healing benefits. Some of them include relief from back pain, colitis, headaches and neck tension, and injuries or burns that have healed much faster. Also reported are mental benefits such as lifting depression, clearer thinking, greater creativity, and one student even noticed she was playing difficult musical passages with much greater ease after doing T'ai Chi. It has been reported that part of Tiger Wood's great success is due to his daily practice of T'ai Chi/Qigong. Future research will help to better define the benefits of Tai Chi with the hope that more medical professionals will incorporate the method in their treatment plans.

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