Pain
MANAGEMENT
SPECIAL INTEREST GROUP • ORTHOPAEDIC SECTION, APTA, INC.

President's Message

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Joint Pain—Nutritional Secrets Unlocked

The pain of the many types of arthritis can be at times frustrating to disabling. Exercise, as we all know as therapists, is a good start to regaining the proper condition to the joint and maintaining the balance of nutrition. From the medical arena we have heard that NSAIDs should be the first line of defense with inflammatory reactions such as arthritis. The use of these medications, however, can cause various side effects, not the least of which is gastrointestinal bleeding and in some cases even death. Elderly patients using NSAIDs are 4 times more likely to die from ulcers and internal bleeding than those who don't use the drugs. The use of these over the counter drugs can also cause the disruption of the protective mucous lining and intestinal flora in the lower bowel leading to what we know as "leaky gut syndrome." This allows abnormally large proteins to pass through the walls of the intestine into the bloodstream. These proteins can trigger allergic reactions that cause inflammation and exacerbation of symptoms associated with rheumatoid arthritis. It has also been shown that NSAIDs can block certain prostaglandins which are necessary to help regulate blood pressure.

Since the early 1990s we have heard of the tremendous benefits of glucosamine sulfate combined with chondroitin sulfate for the renewal of the joints in many cases. Glucosamine works by building proteins that make up healthy cartilage. These proteins bind with water, which is critical for proper joint lubrication. Stiffness and aching in your joints can be signs that these essential proteins are breaking down and that your cartilage is starting to break down. Chondroitin provides a constant supply of nutrients needed to repair the damaged protein and build new protein. The use of these 2 nutritional aides is only a start to healthy joints. It is also important to note that the use of these two supplements will take at least 6 to 8 weeks before an effect is noticed. The use of bovine and shark cartilage has a complete mix of all the mucopolysaccharides; however, unless processed correctly with enzymes, they can lose many of the beneficial properties from deactivation of the protein components. Since sulfates can be difficult to break down, the use of enzymes such as bromelain and papain can be helpful to properly absorb the components of the sulfates. Bromelain inhibits the formation of prostaglandins and has powerful anti-inflammatory effects. One of the leading enzyme products in Europe is wobenzyme. It also is a major stimulant to the immune system.

Some herbs that also claim to relieve joint pain have been used over the years. These include yucca, white willow bark, feverfew, devil's claw, celery, and boswellia. Four herbs that more recently have come into the forefront are lemon myrtle, aniseed myrtle, mountain pepper, and wild rosella. Lemon myrtle is a potent source of lemon oil or citral. It seems to work specifically on removing painful toxins from the joints, thereby eliminating the source of pain and inflammation. Aniseed myrtle also has some of these antipathogenic compounds as well. Mountain pepper seems to have anti-inflammatory properties. Wild rosella has a similar effect as lemon and aniseed myrtle.

The use of various supplements along with a regular exercise regime can go a long way to prevent chronic joint inflammation in many people. The ability to manage pain requires a comprehensive enlightened approach from a wide variety of sources that touch mind, body, and soul. As we embark on this new century we will see a rapid rise in chronicity due to the destructive effects of managed care and a lack of preventive care. We must all be prepared for the surge in chronicity and the ways to best effect control of these ailments.

I eagerly invite you to submit short papers that clearly aim toward the management of pain. We must stretch to meet the new challenges of a changing scene of patient care. Each of you who read this is integrally important to growing our SIG and our body of knowledge. You can contribute a great deal to our profession by helping others better understand ways in which you address pain management.

CSM 2003-Tampa

We will be having a tremendous one day preconference course this coming year with the morning session focusing on the Neuroplasticity of Pain with Russ Foley, PT, MS and the Psychology of Pain with Dr G. Frank Lawlis, one of the foremost authors in the world on the subject of chronic pain and author of the Dallas Pain Questionaire and multiple texts. He

will be a guest in 5 sessions of the new Dr. Phil Show airing this fall on TV. Our 4-hour course during CSM will introduce us to a new technique, Pain Reflex, by a gifted therapist John Iams, PT, MS. So as you can see, there are a lot of wonderful programs in store for us. We are also looking for nominees to serve as treasurer, education chair, nominating chair, and practice chair. Please submit your names to me or others you think will be interested. This is your SIG and together we can make it and the Orthopaedic Section all it can be.

Transcranial Microcurrent Electrical Stimulation For Pain Control

John Garzione

Microcurrent electrical stimulation uses current in the microamperage range of 1000 times less than that of traditional TENS units and below sensation threshold. The pulse width (length of time that the current is delivered) is about .5 seconds per pulse, which is 2500 times longer than the pulse of a typical TENS unit (50-400 microseconds).[1,2] The current is applied through the head via ear clips stimulating the Auditory nerve (Cranial Nerve 8) that communicates directly into the brain. Microcurrent stimulation was developed in 1954 in the USSR and spread through the former Eastern Bloc and into Europe and Japan. The technique arrived in the US in the 1960s, where it was researched in both animal and human subjects at several US university medical schools. Research reviews were also conducted in 1980 and again in 1995 summarizing progress of Cranioelectrotherapy Stimulation (CES) in Medicine.[3] The uses for CES include treatment for rehabilitation of addicted persons, mood elevation for patients with paraplegia and quadriplegia, closed head injury, spastic CP and chronic pain. It is not the scope of this article to discuss other uses for CES other than the treatment of chronic pain.

We all have noticed that many patients report that when they have more emotional stress, they have more pain. Research on the use of CES for patients with fibromyalgia postulated that if one could reduce the stress levels in patients with chronic fibromyalgia, their pain levels would also decrease.[4]

A double-blind placebo-controlled study done in 1999 showed that people who have had fibromyalgia on the average of 10 years showed a significant reduction in pain with improvements in sleep, a feeling of well being and an increase of their quality of life.[4] The subjects used the CES unit for 1 hour per day for 3 weeks at .5 Hz, modified square waves, biphasic pulses with intensity set at subsensation levels of 100 micro amps with 50% duty cycle.[4] A 70% improvement was also noted in patients with fibromyalgia who had intractable headaches. The treatments were given at 20 minutes, 4 times per day for 1 month.[5]

MECHANISMS OF ACTION

It is not entirely clear why putting microcurrent electrical stimulation across the head would reduce pain in the body. Studies did not confirm an increase of endorphins in the blood. One study found an increase of serotonin[6] and one found an increase of MAO-B and GABA.[7] Animal studies indicate that CES may bring neurotransmitters back into a homeostatic balance. When normal homeostatis shifts into a stress pattern, it causes an increase of cortisol, which increases pain perception.[8] CES may shift the balance back to normal.

There is also evidence that there is a central pain neuromatrix in the cortex of the brain which processes pain messages throughout the body even in the absence of perceptible pathology, such as phantom limb pain. Ronald Melzack theorized that the pain neuromatrix may be important in producing chronic pain states.[9] It is known that CES stimulates every area of the brain, which would also include where the neuromatrix resides.[10]

The CES has also been shown to smooth out and normalize the EEG spectrum of people who had pain from DJD.[11] Pain and degeneration seem to be marked by significant elevations from the normally smooth 2-minute FFT (Fast Fourier Transforms) spectral curve. Alpha stimulation of patients studied caused a smoothing of the FFT spectral curves with a significant decrease in reported pain on the 5 point VAS from 4.5 to 2.1.

Patient treatment

Clean earlobes with mild soapy water and dry. Place felt pads to ear clips and saturate the electrodes with saline solution. Place ear clips on each ear lobe as high as possible to the cartilage (have patient remove earrings). Turn on unit, set time for at least 20 minutes, set pulse rate at .5 Hz and turn up output until patient feels stinging at electrodes, dizziness or nausea. Immediately reduce output until symptoms decrease. It is acceptable if the patient feels some current. At the end of treatment, remove the electrodes. We use treatment times of 20 minutes, 3 times per week; CES can be used while other localized treatments are also being done. Do not use CES in conjunction with short wave diathermy.

The patient may feel relaxed or light-headed, which will decrease within the next few hours.

Contraindications

There have not been any significant harmful side effects. Use caution with stimulating directly over carotid sinus when used during pregnancy, when used with a demand type pacemaker, or when operating complex machinery or driving shortly after treatment.

This unit is manufactured and distributed by:

Electromedical Products International, Inc.
2201 Garrett Morris Parkway
Mineral Wells, TX 76067
Phone #: 1-800-367-7246

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