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Treatment **of** Fibromyalgia **with Cranial Electrotherapy** Stimulation

Original Internist, Sept,2001 by Steve Tyers, Ray B. Smith

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The incidence of fibromyalgia has increased significantly in the past 10-15 years, and has proven difficult to treat. It is one of the most common conditions seen in outpatient clinics in the US, Mexico, Spain, Australia and Canada. Its prevalence has been estimated as high as 0.7-4.8% [1] The symptoms can vary with the patient, although pain from 18 bilateral tender points is diagnostic. [2] One study found that 75% of the fibromyalgia patients in the study complained of inadequate, or disrupted sleep. [3] Another author attributed this to the intrusion of faster alpha waves during non-rapid eye movement sleep, which essentially disrupted the patient's normal sleep, which essentially disrupted the patient's normal sleep pattern. [4] Another study concluded that a subset of fibromyalgia patients have a dysfunction traceable to the brain's hypothalamic-pituitary axis which manifest as a dysfunction in the production of insulin-like growth factor-f. [5]

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Other studies have suggested that fibromyalgia may be the result of neck trauma, with a to-fold increase of fibromyalgia among persons suffering whiplash injuries. [6] The term "neuroplasticity" refers to the concept that pain can spread from injured to sometimes distant, noninjured tissue by means of central neural activation. The referred pain can be both widespread and chronic, persisting long after the original injury. [7]

Currently, most fibromyalgia patients are treated with various combinations of drug therapies, but receive very little benefit from these. A major review of 34 medication studies in fibromyalgia found that the best medications studied reduced pain by 28%, and 20% of the patients suffered from sometimes serious side effects from the drug. The same author reported on 12 nonmedication studies and concluded, "Overall, clinical evidence suggests that the most effective agents in managing the pain of fibromyalgia are those that affect neurotransmitter

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metabolism at the receptor site." [8]

While adjunctive therapies such as biofeedback, exercise training, relaxation training and the like have shown real promise, there still is a long way to go in eliminating pain from these patients. [9] The great majority of fibromyalgia patients studied have shown an inclination to search for additional treatment protocols, including a willingness to try alternative medicine approaches. [10] For all ofthese reasons, we at the United Physicians Group of California, La Jolla, decided to do a clinical trial of cranial electrotherapy stimulation (CES) with our large clinical population of fibromyalgia patients.

CES is an FDA-accepted, non-drug treatment for the stress-related illnesses of depression, anxiety and insomnia. Animal studies suggest that one of its major actions is to stimulate the brain to bring the neurotransmitters back into homeostasis once the homeostasis has been thrown out of balance by stress. [11] EEG studies have shown its ability to regulate faulty sleep patterns, [12] and another study has shown its ability to stimulate the hypothalamic-pituitary axis to increase insulin-like growth factor-l in older female patients. [13] Those are among the major problems suffered by fibromyalgia patients, as cited above.

In addition, it is accepted among pain treatment professionals that a patient's experience of pain is elevated when the patient is under stress and reduced when the stress is reduced. [14] Since CES has repeatedly shown itself effective over the years in reducing stress, [15] we decided to see if it would affect the pain experience of our fibromyalgia patients.

Method

Since we employ a wide range of chiropractic treatment strategies with our fibromyalgia patients, it was decided that for this study CES alone would be employed to assess its contribution separately. We designed an open clinical trial, involving 20 consecutive patients who entered our clinic and were diagnosed with fibromyalgia. They all signed volunteer consent agreements prior to the study. All were between the ages of 28 and 54 (mean 44). Two were male, and one was Latin American.

Procedure

All patients were pre-tested on the Profile of Mood States (POMS), a standardized psychological test which yields scores for anxiety, depression, anger, vigor, fatigue, and cognitive function. It also provides a total mood disturbance (TMD) summary score. In addition, all were asked to self rate their overall pain level, their quality of sleep, their feeling of well-being, and their quality of life on to-point scales. Their pain level on nine bilateral tender point sites and three bilateral sham tender point sites were evaluated by the senior author. Each patient was then given an Alpha-Stirn CES device, and taught how to use it. They were asked to treat themselves at home for one hour a day for three weeks. The devices were set to treat at 0.5 Hz, with a biphasic pulse, via ear clip electrodes. The patient could adjust the treatment intensity from 0-500 microamperes, though most reported using it with the intensity set between 200 and 300 microamperes.

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Following the three weeks, patients returned to the clinic for post testing at which all the previous measures were again obtained.

Results

As can be seen in figure 1, there was a 33% reduction in pain as measured by the tender points, and even greater gains in each of the self-rated measures. The 33% reduction in tender point scores following CES compares well with the 28% gain made from the studies of the best of the more commonly used medications, as reported above.[8] *Also,* unlike the medication studies, there were no accompanying negative side effects found from the CES treatment.

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When one looks at the stress measures obtained from the POMS, shown in figure 2, it can be seen that anxiety was reduced by more than 25% and depression by more than 30%, while the fatigue score, so often elevated in fibromyalgia patients, was also reduced more than 25%.

Discussion

This study showed strongly positive results that look very encouraging from the use of CES in our patients. We hope to plan a future study in which the effects of CES, together with chiropractic treatments, will be studied to assess the combined effect. It is known, for example, that CES can potentiate such treatments as biofeedbacklio] and anesthetics.lrz]

The present study has indicated that CES, even when used alone, is a potent treatment for fibromyalgia patients. It would also appear cost effective, in that once the stimulator is prescribed for the patient, there are no ongoing or additional patient costs for its use. *Also,*

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unlike with most TENS devices,

patients do not habituate to the Alpha-Stirn microcurrent stimulator.

CES should be a significant addition to other treatment strategies presently in use and may offer even greater relief to those fibromyalgia patients who are treated by doctors of chiropractic. The results of this study suggest that a wider use of CES treatment in this often refractory group of patients appears to be indicated.

About the Author

Steve Tyers, DC began his career in the early 1990 's as an athletic trainer, later graduating from Parker College of Chiropractic in 1997. In 1998 he was certified in Repetitive Postural Stress Pattern analysis and treatment. He currently serves as Director of Rehabilitation for United Physicians Group of California, La Jolla. In that capacity, he oversees the Rehabilitation Department, directs the Nutrition Counseling Program, and coordinates the clinical work of the medical and chiropractic physicians on staff. He is also involved in research projects, including the fibromyalgia study reported here. This project will soon be expanded to include specific chiropractic treatment regimens, including spinal adjustment, myofascial release, trigger point therapy, and nutrition counseling, all intended to achieve an even greater, drug free reduction of pain in fibromyalgia patients.

Ray B. Smith, PhD is Vice President for Science at Electromedical Products International in Mineral Wells, Texas, and is beginning his zoth year of CES research. He assisted with the development of the research protocol and study write-up.

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REFERENCES

1) Wolfe F, Ross K, Anderson J, Russell IJ, and Hebert 1. "The prevalence and characteristics offibromyalgia in the general population." Arthritis Rheum, 1995; 38(1):15-28.

2) Wolfe F, Smythe HA, Yunus MB, Bennett RM, Bombardier C, Goldenberg DL, et al. The American College of Rheumatology 1990 criteria for the classification of fibromyalgia.

3) Arthritis Rheum, 1990; 33: 160-172.

4) Wolfe F. "Fibromyalgia: the clinical syndrome. Rheum Dis ClinNorthAm, 1989; 15:1-18.

5) Moldofsky H. "Sleep and fibrositis syndrome." Rheum Dis Clin North Am, 1989; 16:47-8.

6) Bennett RM, Cook DM, Clark SR, Burckhardt CS, and Campbell SM. "Hypothalamic-pituitary insulin-like growth factor-I axis dysfunction in patients with FM." J Rheumatol, 1997; 24: 1384-1389.

7) White KP, Carette 5, Harth M, and Teasell RW. "Trauma and fibromyalgia: is there an association and what does it mean?" Seminars in Arthritis and Rheumatism, 2000; 29(4):200-216.

8) Coderre TJ, Katz J, Vaccarino AL, and Melzack R. "Contribution of central neuroplasticity to pathological pain: review of clinical and experimental evidence." Pain, 1993; 52:259-85.

5) Moldofsky H. "Sleep and fibrositis syndrome." Rheum Dis Clin North Am, 1989; 16:47-8.

9) Leventhal LJ. "Management offibromyalgia." Ann Intern Med, 1999; 131:850-858.

10) Buckelew SP, Conway R, Parker J, Deuser WE, Read I, Witty TB, et al. "Biofeedback/relaxation training and exercise interventions for fibromyalgia: a prospective trial." Arthritis Rheum, 1998; 11:196-209.

11) Pioro-Boisset M, Esdaile JM, and Fitzcharles MA. "Alternative medicine use in fibromyalgia syndrome." Arthritis Care Res, 1996; 9: 13-17.

12) Pozos RS, Strack LE, White, RK, and Richardson AW. "Electrosleep versus electroconvulsive therapy." In: Reynolds DV, Sjoberg AE, editors. Neuroelectric research. Springfield: Charles Thomas, 1971; 221-225.

13) Weiss MF. "The treatment of insomnia through use of electrosleep: an BEG study." J Nerv Ment Dis, 1973; 157:108-120.

14) Smith RB and Ryser CA. "Important things we learn when research goes awry." Presented at the 2000 International Oxidative Medicine Association Conference, Denver, Colorado.

15) Schuster JM. "Antidepressants, anxiolytics, and antipsychotics in the treatment of pain." In: Weiner RS, editor. Pain management; a practical guide for clinicians. Boca Raton: St. Lucie Press, 1998; 156.

16) Kirsch DL. The science behind cranial electrotherapy stimulation. Edmonton, Alberta: Medical Scope Publishing, 1999.

17) Brotman P. "Low-intensity transcranial electro-stimulation improves the efficacy of thermal biofeedback and quieting reflex training in the treatment of classical migraine headache." Am J Electromed, 1989; 6:120-123.

18) Stanley TH, Cazalaa JA, Atinault A, et al. "Transcutaneous cranial electrical stimulation decreases narcotic requirements during neuroleptic anesthesia and operation in man." Anesthesia and Analgesia, 1982; 61:863-866.

headache." Am J Electromed, 1989; 6:120-123.