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MPS Stimulation Combined with Physical Therapy Improves Outcomes

Background: Electrical stimulation (E-stim) in various forms has been a mainstay of physical medicine treatment for decades. In the 1960s when Melzack and Wall developed the Gate Control Theory explaining a possible scientific basis of E-stim, manufacturers began developing E-stim units for pain and other applications. Pomeranz and others in the mid-1970s theorized and showed the release of endorphins by E-Stim and acupuncture in pain relief, as well as their blockade with opiate antagonists. This further enhanced acceptance and use of these modalities in pain management. E-stim and pressure over motor/trigger points have been utilized for their ability to relax tightened, painful muscles. Acutherapy, or stimulation of acupoints, has been an ancient art of stimulating body points for their influence of specific forms of body tissue or at distal points that have a beneficial effect on proximal disorders.

MPS[SM] (Microcurrent Point Stimulation) is a hybrid modality utilizing concentrated, low frequency, DC current stimulation to acutherapy points, motor/trigger points and contracted motor bands. MPS[SM] has been reported to provide immediate pain relief, decrease muscle tonicity and accelerate tissue repair for musculoskeletal disorders. MPS[SM] was initiated as part of a physical therapy pain program with what appeared as impressive results. To further investigate whether MPS[SM] was indeed a more effective modality for use in our pain therapy program, we compared pain relief outcomes with MPS[SM] as part of their program to our prior, more traditional approach.

Methods: Subjects were retrospectively assigned to two treatment groups: Standard therapy or MPS[SM]. There were 23 patients in each group. The patients were matched on two factors: time of onset to initial evaluation (in months) and site of pain/diagnosis (26 lumbar, 26 shoulder, 13 neck, 9 knee, 4 cervical, 4 foot, 4 rotator cuff).

Table 1

	Age	Onset (months)	# Sessions	Admit Pain
Standard Treatment Group	53.9	2.1	11.4	7.2
MPS℠ Group	62.1	2.0	11.8	7.0

Table 2

	Admit Pain	Discharge Pain	Change in Pain	Change in Session
Standard Treatment Group	7.2	4.4	2.7	0.26
MPS℠ Group	7.0	1.7*	5.3**	0.60***

*p = .0002 **p = .0021 ***p = .0060

Treatment:

Patients in the standard therapy group received traditional physical therapy, which may include traditional E-stim with pad electrodes, therapeutic heat and cold, stretching and strengthening exercises. No MPS℠ therapy was used in this first group. The second group received standard physical therapy with MPS℠ as a modality treatment (no traditional E-stim). Patients rated their pain on a scale from 0 (lowest) to 10 (highest) before treatment and at the end of treatment. These pain ratings served as the dependent variable in the data analysis.

Results:

Two-tailed t-tests did not reveal any significant difference between the groups with regard to age (p=0.10), onset of pain condition (p=0.83), admission pain level (p=0.78), or number of treatment sessions (p=0.81). Thus, the two groups were comparable at the beginning of treatment (see Table 1). There was a significant difference between the groups on change in pain ratings from pre to post-treatment (p=0.0002). The MPS℠ treated group had a significantly greater reduction in pain as compared to the standard treatment group. Thus, the MPS℠ had a better outcome relative to the standard therapy group (see Table 2).

Discussion:

MPS℠ appears to have an additive benefit when used in conjunction with traditional physical therapy treatment of pain conditions in a mixed patient sample. MPS℠ is non-invasive and is very well tolerated by patients. It can be administered usually in 5-15 minutes. Chronic pain patients can be instructed in MPS℠ home use. In conclusion MPS℠ is an effective modality for pain reduction as part of a physical therapy program.

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