

External stimulation : simplistic solution to intractable pain ?
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Introduction:

Despite adopting a multidisciplinary approach, the management of neuropathic pain not infrequently presents a challenging clinical conundrum. Primary afferent stimulation for the control of chronic pain has been used widely during the last 40 years¹. Current locations of access for stimulation include skin in Transcutaneous Electrical Nerve Stimulation (TENS) and acupuncture, peripheral nerve trunks, and primary afferent collaterals in the dorsal columns during Spinal Cord Stimulation (SCS). We have successfully investigated short external low frequency stimulation either targeted at the site of the maximum pain or deeper afferent sensory nerves in patients with intractable pain². We present the preliminary results of our study aimed at symptomatic relief and restoring function in patients with chronic, intractable pain.

Methods

We applied External(transcutaneous) Stimulation to 35 eligible patients complaining of peripheral neuropathic pain. The procedure entailed the application of a 2Hz frequency and amplitude between 1mA and 15mA electrical stimulus (Neurotrace III) transcutaneously to a targeted area or nerve supplying the area of intractable pain. The duration of stimulation was 5 minutes in each case and pain scores (VAS) were recorded at 0 and 5 minutes.

Results

We noticed dramatic reduction of the pain VAS. In 19 cases the VAS reduced to 0 at the end of 5 minutes demonstrating a 100% improvement in their pain status. The VAS scores decreased by 90% in four, 63% in another four and 50% in four more patients. Remaining three cases had their VAS score reduce by 25%, 20% and 15% respectively. In four patients with CRPS, vascular changes were observed at end of procedure.

Conclusion:

External Stimulation is a noninvasive, simple and effective initial indicator, in patients with neuropathic pain, prior to longer, medium term percutaneous stimulating catheter trial and subsequent implantation of permanent devices. The external application component allows the procedure to be performed on an outpatient basis and may be considered for diagnostic and repetitive therapeutic procedures. Further investigation is needed to establish a place for this technique in management of chronic pain.

References:

1. Alo K M., Holsheimer J., New trends in neuromodulation for the management of neuropathic pain. Neurosurgery, 2002, 4,690-704.
2. Goroszeniuk T., Goroszeniuk D., Short neuromodulation trial in neuropathic pain produces varying duration but reproducible pain relief. Pain in Europe IV. 4th Congress of EFIC, Prague, 2-6.09.2003.

