Electronic Signal Treatment Can Restore Peroneal Nerve Function in Patients with Foot Drop
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Introduction
We utilize the Combined Electrochemical Treatment (CET) to reverse the signs and symptoms of peripheral neuropathy (1, 2, 3). Approximately 5% of our neuropathy patients present with common peroneal nerve dysfunction (foot drop). Common peroneal nerve dysfunction is damage to the peroneal nerve leading to loss of movement or sensation in the foot and leg. Not only is there a loss of feeling, but larger motor nerves are sometimes affected.

Materials and Methods
A solo practitioner in an interventional pain management clinic has treated hundreds of patients with lower extremity neuropathy of all kinds with low dose local anesthetic (LA) plus electronic cell signaling treatment (EST), termed the combined electrochemical treatment (CET). CET was administered twice a week (Monday and Friday) over 3 – 14 weeks, and EST alone was administered once per week (Wednesday). Patients who were treated at our clinic for manifestations of peripheral neuropathy were examined for motor deficits as well. 10 patients have presented over the past three years with varying degrees of peroneal nerve dysfunction, ranging from mild (4/5 strength on motor testing) to severe (0/5 strength on motor testing). In addition to the sensory neuropathy protocol, the patients were treated with an advanced electric cell signaling device that administers specific-parameter electric energy signals programmed to mimic normal motor nerve activity. None of these treatments involved the addition of local anesthetics, which are utilized for the CET protocol.

Results
- 83% of patients experienced improvement in peroneal function, and a majority of these experienced 100% return of function
- Successful treatment of these patients relieved the nerve dysfunction in 83% of the cases, although it appears that 6-8 weeks may be necessary for the nerves to completely heal and regenerate.

Case Report
- A physician with a lithium toxicity and complete peroneal nerve dysfunction of several months duration, was informed by his neurologist that the peroneal motor nerve function would take 2-3 years, if ever, to recover.
- Within one week of treatment with the advanced axonal stimulation programs, part of the CET protocol, his motor function returned to 4/5. After four additional weeks of continued treatment, he had full restoration of function, w/motor strength measured at 5/5

Conclusions
- The treatments improved mobility and independence, as well as the reduction in swelling (4) and pressure on the nerve in a number of cases.
- Treatment for these patients revolves around specific-parameter electric cell signaling and nerve axon stimulation (5).
- Treatment aims to improve mobility and independence, as well as the reduction in typical swelling and pressure on the nerves.

These are the first cases of which we are aware of showing accelerated recovery of peroneal nerve dysfunction being reported. CET has also been shown to regenerate epidermal nerve fibers (6) and Peter Carney, a neurosurgeon, has shown that CET is a cost effective approach to treating peripheral neuropathies (7).

- We conclude that this advanced technology shows great promise for the treatment of all manifestations of neuropathies, including those involving the larger motor fibers.

References
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6) Poster presentation accepted by NeuPSIG, Nice, France May 2015; also unpublished clinical observations
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