ACUPUNCTURE Today

CLINICAL CARE

Peripheral Neuropathy: Improving Outcomes

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The National Institutes of Health estimates that 20 million Americans suffer from some form of peripheral neuropathy (PN), with diabetes being the most common cause. Other etiologies include physical injury, systemic autoimmune diseases, vascular and blood issues, exposure to heavy metals, Lyme disease, hormonal imbalances, infections, chemotherapy, HIV, kidney and liver disorders, and nutritional or vitamin imbalances (primarily vitamin B_{12} deficiency or excess vitamin B_6). One third of all PN cases do not have an identified cause and may be lumped into the diagnosis of "idiopathic peripheral neuropathy."

Acupuncture is known to improve or eliminate the symptoms of PN, depending on the etiology of the disease. A 2017 systematic review and meta-analysis of acupuncture for the treatment of neuropathies found that it is helpful for diabetic neuropathy, but indicates that there is insufficient evidence to support its use in idiopathic peripheral neuropathy.[1] Lack of evidence, however, doesn't mean it's ineffective.

Potential Causes

If your patient complains of mild tingling in their hands and feet in addition to general fatigue, they may be suffering from a vitamin B_{12} deficiency. (There's a greater incidence among vegetarians / vegans since the majority of B_{12} in our diet comes from animal products.) Lyme disease can also produce PN symptoms, in addition to a wide array of seemingly unrelated complaints, so make sure that diagnosis has been ruled out.

Certain cancers will produce tumors that compress nerves in addition to paraneoplastic syndromes (triggered by a person's immune response to cancer), which can indirectly cause widespread nerve damage. If your patient has a history of cardiovascular disease (or a familial predisposition), atherosclerosis or narrowing of the arteries can lead to neuropathy.

Alcoholism is also a risk factor for PN, so keep a close eye out for signs and symptoms of excessive alcohol consumption (broken blood vessels on nose, anemia, gout, elevated liver enzymes, cardiovascular disease, etc.), and be ready to have a compassionate, non-judgmental discussion of the patient's drinking habits.

Some medications also have the side effect of peripheral neuropathy, such as statins (to lower cholesterol), colchicine (to treat gout), hydralazine (for high blood pressure), and various HIV and cancer drugs, to name a few.

Supplements to Consider

Supplements you may consider recommending to patients with PN are as follows:

- Sublingual B_2 (methylcobalamin): 2,000 mcg daily as a loading dose for a week; then reduce to 1,000 mcg for 2-3 weeks; then 1,000 mcg every other day, etc.
- Omega-3 fatty acids: 1,200 mg (combined DHA / EPA) two times per day with meals containing fat
- Taurine: 1,000 mg two times per day on an empty stomach
- Vitamin E: 300-400 mg per day
- R-alpha lipoic acid: 300 mg two times per day on an empty stomach (it appears to be helpful for burning pain associated with diabetic neuropathies, but the jury is still out on chemo-induced PN)
- b Alanine: 1 g two times per day
- Zinc sulfate (specifically for diabetics): 25 mg per day

Important Acupoints

There are a variety of TCM diagnoses for PN that are beyond the scope of this article, as well as herbal medicine recommendations. Some "go to" acupoints for hand and foot pain / tingling / numbness include:

- LI 4 + LIV 3 (Four Gates)
- E-stim: Connect SP 9 to K 7 (*yin* side / saphenous nerve) and GB 34 to GB 39ish (*yang* side / peroneal nerve), and another channel to the *Ba Feng* points (attaching the positive and negative alligator clips to two needles at a time), using a dense-dispersed milliamp setting between 3 and 10 hz.*
- SP 6
- ST 36
- *Bafeng* and *Baxie* points
- A 2010 study on diabetic PN used the following point combination: bilateral ST 36, SP 6, KI 3, LI 4, LI 11, TW 5, CV 4, and CV 6.

*Eric Raymond Buckley, DOM, is an oncology and sports medicine acupuncture specialist who developed the e-stim treatment protocol above while working with Christus St. Vincent Integrative Medicine and Palliative Care in Santa Fe, N.M. He has been using it for more than six years to help reduce symptoms of neuropathy for patients undergoing chemotherapy. He feels that it is better to start treatments earlier as preventive care, rather than wait until there are severe symptoms; but the treatment can be effective to help find relief from severe symptoms as well.

Integrative Approaches

Pulsed Electromagnetic Frequency (PEMF): Pulsed electromagnetic frequency has promise for pain reduction in those with refractory PN. Studies demonstrate statistically significant improvement in nerve conduction velocity in 10 to 15 treatments. PEMF machines are quite expensive (they can be as high as $80,000), but you can check to see if there's someone in your community who offers that therapy.

Cognitive Behavioral Therapy: CBT has been studied to improve a number of conditions, including chronic pain and numbness. Although there are few solid randomized, controlled trials on the effect of CBT on PN pain, the current evidence base is promising and worth discussing with your patient.

Topical Capsaicin (creams or patches): Capsaicin (found in chili peppers) has been found to block substance P, a neurotransmitter that conducts pain to the brain. It's purely used for symptomatic

treatment, applied directly to the feet.

Lidocaine: My patients who have used lidocaine gels, creams, foam sprays and patches suggest they're helpful to numb the area of neuropathic pain; however, there are no high-quality studies to support their use.

Cannabidiol (CBD): The integrative pain community has been very interested in the analgesic and anti-inflammatory effects of CBD (both oral and topical administration) for the treatment of chronic and acute pain. Studies have demonstrated positive effects of CDB with dosages as low as 5 mg, without the side-effect profile of common drugs such as opioids and Neurontin (gabapentin).

Yoga: Practicing gentle yoga regularly has a positive effect on pain intensity related to PN.

Neurofeedback: This is a type of biofeedback that uses real-time displays of brain activity (typically using an electroencephalogram) that "trains" the user to modify their brain activity, and has been studied in the management of chemo-induced peripheral neuropathy with positive results.

Hyperbaric Oxygen Therapy: HBOT is known for treating decompression sickness (the bends) in scuba divers, and wound care in the military and diabetics, but has recently been found to improve PN symptoms as well. Although the FDA does not list PN as one of the 13 indications for HBOT at this time, it's been shown to be helpful in promoting revascularization and triggering stem cell production.

Frankincense and Myrrh: The combination of frankincense and myrrh as a topical analgesic can provide short-term relief with no side effects. Have your patient apply about a half a teaspoon in their palm to the areas of their feet that hurt (ball of foot, between the toes, etc.) and cover with a sock.

Epsom Salt Soaks: Although only providing short-term relief, soaking feet in a warm Epsom salt bath (with your favorite essential oil) can improve symptoms. If your patient's feet are swollen, recommend cool water instead.

Since PN can vary from annoying numbness to downright excruciating pain, it's important to have as many tools available to offer relief to your patients. Hopefully this overview provides you with some additional approaches to consider that will help improve your clinical outcomes when treating peripheral neuropathy.

Resources

- Peripheral Neuropathy Fact Sheet. NIH National Institute of Neurological Disorders and Stroke.
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