

# Chinese Medicine and Diabetic Peripheral Neuropathy

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Peripheral neuropathy, also known as polyneuropathy or peripheral neuritis, is a disease usually secondary to collagen vascular diseases such as systemic lupus erythematosus (SLE), scleroderma and rheumatoid arthritis (RA). It is also secondary to metabolic diseases such as diabetes, or to infectious agents such as Lyme disease.

In diabetes, symptoms of neuropathy may precede other symptoms of carbohydrate and vascular abnormalities. As many as 60-90% of patients with diabetes suffer from peripheral neuropathy; however, modern Western medicine does not have any truly effective treatment for this condition.

One of the most common treatments of PN is the prescription of amitriptyline, frequently sold under the brand name Elavil. Amitriptyline is an antidepressant. Some of its side-effects include skin rashes; headache; dizziness; weakness; hepatitis; agitation; nightmares; nausea; fluctuations in blood sugar levels; heart palpitations; and even peripheral neuritis.<sup>1</sup>

Peripheral neuropathy is also commonly encountered in AIDS cases. Recent research published in the *Journal of the American Medical Association* suggests that amitriptyline is definitely not effective for that type of peripheral neuropathy.<sup>2</sup> However, the Chinese medical descriptions of the pathophysiology of diabetes and AIDS are essentially the same, especially the Chinese description of peripheral neuropathy in both diseases. This description also accounts for PN associated with SLE and Lyme disease and often (though not always) covers PN associated with rheumatoid arthritis and scleroderma.

The following is a report on a recently published study on the treatment of diabetic peripheral neuropathy with Chinese medicinals. In composing his protocol, the author assumes that most patients with diabetic PN present the Chinese medical pattern of *qi* and yin vacuity with vacuity heat complicated by blood stasis in the network vessels. The title of the article (in English) is "The Use of *Yi Qi Zhu Yu Tong Mai Tang* (boost the *qi*, dispel stasis and free the flow of the vessels decoction) in the Treatment of Diabetic Peripheral Neuropathy." It was authored by Xu Sheng-sheng and published in *Jiang Su Zhong Yi* (Jiangsu Chinese Medicine) 1999, issue 3, p. 23.

## Cohort Description

The study consisted of 118 patients, all of whom met the WHO's criteria for diabetes mellitus. Each patient also displayed varying symptoms of diabetic peripheral neuropathy, which included lower extremity tingling and numbness, formication, vague pain, piercing pain, burning pain and muscular loss of strength. In addition, patellar and Achilles reflexes were either weakened or absent.

Patients were divided into similar treatment and comparison groups. The treatment group consisted of 86 patients, 45 male and 41 female, and ranged in age from 31-76, with a median age of 50.6. Eighty-four patients were diagnosed with non-insulin dependent diabetes mellitus

(NIDDM); two were diagnosed with insulin dependent diabetes mellitus (IDDM).

Of the 32 patients in the comparison group, 18 were male and 14 female. The patients ranged in age from 29-74 with a median age of 52.8. Thirty-one patients were diagnosed with NIDDM; one had IDDM.

#### Treatment Method

In addition to dietary restrictions and sugar lowering medications (i.e., insulin), patients in the treatment group were given the following basic formula orally: uncooked *radix astragali membranacei* (*huang qui*), 30g; *radix dioscoreae oppositae* (*shan yao*), 10g; *radix scrophulariae ningpoensis* (*xuan shen*), 10g; *rhizoma atractylodis* (*cang zhu*), 10g; *radix angelicae sinensis* (*dang gui*), 12g; *radix rubrus paeoniae lactiflorae* (*chi shao*), 12g; *flos carthami tinctorii* (*hong hua*), 12g; *cortex radices moutan* (*dan pi*), 12g; *semen pruni persicae* (*tao ren*), 12g; *caulis milletiae seu spatholobi* (*ji xue teng*), 8g; *dry lumbricus* (*di long*), 5g; *lignum sappan* (*su mu*), 6g; *radix achyranthis bidentatae* (*huai nui xi*), 9g; *radix dipsaci* (*chuan duan*), 10g; *fructus chaenomelis lagenariae* (*mu gua*), 10g; *radix gentianae macricphyllae* (*qin jiao*), 10g; *radix pseudoginseng* (*san qi*), 6g; and *hirudo* (*shui zhi*), 3g. All except the final ingredient were decocted in water once per day and administered orally. The *hirudo* was powdered and taken orally in gelatin capsules. Twenty days of this regimen equaled one course of therapy.

The comparison group was administered 25mg of dipyridamole, 10mg of vitamin B<sub>1</sub> and 20mg of vitamin B<sub>6</sub> three times a day. Twenty days of this regimen likewise equaled one course of treatment.

#### Treatment Outcomes

Marked effect was defined as a marked improvement in, or disappearance of, self-conscious symptoms and either normal or markedly improved patellar and Achilles reflexes. Some effect meant reflected some improvement in both self-conscious symptoms and patellar and Achilles reflexes. No effect meant no improvement in self-conscious symptoms and no improvement in patellar and Achilles reflexes.

Based on these criteria, 41 patients in the treatment group (47.7%) were judged to have a marked effect; 38 patients (44.2%) received some effect; only seven patients (8/1%) failed to register an effect. The total amelioration rate in the treatment group was 91.9%.

In the comparison group, only two patients (6.3%) were judged to have experienced a marked effect. Nine patients (28.1%) received some effect; 21 patients (65.6%) did not register an effect. The total amelioration rate in the comparison group was only 34.4%; hence, there was a very marked difference in statistical outcomes between the two groups ( $P < 0.005$ ).

#### Author's Discussion

According to the study's author, diabetic peripheral neuropathy should be categorized as *xue bi* or blood impediment in Chinese medicine. While yin vacuity and dry heat are the basic disease mechanisms in diabetes, these do not just damage yin but also consume the *qi*. According to Chinese medical theory, if the *qi* becomes vacuous and weak, there will be no power to move the blood. Likewise, if there is yin vacuity, blood movement will also become difficult and choppy or astringent. In addition, because enduring diseases enter the network vessels (i.e., the smallest vessels in the body), this results in static blood in the network vessels. Because the movement and transportation of *qi* and blood is not smooth and easy, static blood obstructs and stagnates. The

muscles and flesh of the limbs lose their nourishment, resulting in numbness and insensitivity. If the stasis obstruction is marked, then lack of free flow leads to pain.

Based on the above ideas of Chinese pathophysiology, the author then states that the requisite treatment principles for remedying this situation are to boost the *qi* and nourish yin, dispel stasis and free the flow of the network vessels. Within self-composed *yi qi zhu yu tong mai tang*, astragalus, dioscorea, scrophularia, atractylodis (a.k.a. atractylis) and dipsacus nourish yin, boost the *qi*, and supplement and boost the spleen and kidneys. Chaenomeles and gentiana soothe the sinews and free the flow of the network vessels. Achyranthes guides the other medicinals to move downward to the lower half of the body. *Dang gui*, red peony, moutan, persica, carthamus, pseudoginseng, lumbricus and hirudo are all strongly blood-quickening, stasis-dispelling medicinals, while lumbricus and hirudo in particular transform stasis and free the flow of the network vessels.

Hirudo's flavor is salty and its nature is cold. It enters the blood division and strongly dispels stasis. However, its nature is slow and relaxed (i.e., moderate); thus, it does not damage the righteous *qi*. It is used in this formula to eliminate deeply recalcitrant stasis accumulation.

Another medicinal the author singles out is pseudoginseng (a.k.a. notoginseng). According to the author, pseudoginseng has the ability to supplement vacuity. It is also able to quicken the blood and dispel stasis.

The author ends the article by saying that the patients in the study were treated with these medicinals for a long period of time and that no hemorrhagic symptoms or other adverse side-effects were seen during that time. Based on this formula's reported clinical efficacy and its freedom from side-effects, I think it is good to try for all PN patients whose Chinese medical pattern is (spleen) *qi* and (liver-kidney) yin vacuity complicated by blood stasis in the network vessels. However, if the patient's pattern is not the one stated above, one should not use this formula as a generic treatment for PN. As I have stated previously, professional Chinese medicine bases its treatment on each patient's personal pattern, not on their disease diagnosis.

## References

1. Long JW. *The Essential Guide to Prescription Drugs 1990*. New York: Harper and Row, 1990, p. 193.
2. Shlay JC, et al. Acupuncture and amitriptyline for pain due to HIV-related peripheral neuropathy. *JAMA* Nov. 11 1998, pp. 1590-1600.

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