

Raw Herb Powders and Powdered Herb Extracts in the Treatment of Chronic Idiopathic Pain: A Methodology and Case Study

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Keywords:
chronic
idiopathic pain,
traditional
Chinese
medicine,
herbal
medicine,
powdered
herbs, raw
herbs, herb
granules.

Abstract

Few effective biomedical treatment options exist for chronic pain of unknown origin. Treatment is usually palliative, with opioid and non-opioid analgesic drugs frequently prescribed. While these drugs may provide some relief, they usually require continuous use, they rarely lead to long-term improvement, and they often have negative side effects. Consequently, increasing numbers of these patients are turning to traditional Chinese medicine (TCM). In the United States, TCM is known mainly for acupuncture, but another TCM modality, Chinese herbal medicine, is an effective and comprehensive system deserving of more attention. Customised Chinese herbal formulas usually consist of several herbs, chosen via TCM's sophisticated model of therapeutic synergy, to address each individual's underlying aberrant physiological mechanisms as well as their presenting symptoms. In recent decades, convenience issues such as preparation time, affordability and portability have effected a shift away from the primary traditional method of administration – decoction – toward powders, pills, and concentrates. This case study details the treatment of a 56-year-old female with widespread, chronic, idiopathic pain using only Chinese herbs in powdered form. Though she reported no benefit from treatment with acupuncture, pharmaceutical drugs or massage, she claimed a dramatic improvement with herbs. Her herbal treatment fit her limited budget, and was free of any side effects, allowing her to work and exercise. It is reasonable to conclude that innumerable others struggling with chronic idiopathic pain might benefit similarly from Chinese herbs, though this clearly warrants further investigation.

Introduction

The Centers for Disease Control (CDC) report, Health, United States, 2006, featured a special section on pain.

These statistics reveal its alarming prevalence¹:

In 1999-2002, 26% of Americans age 20 and older said they had a problem with pain persisting for over 24 hours at some time in the previous month.

- 10% of Americans reported pain that had persisted for over a year.
- Nearly 60% of adults aged 65 and older who reported pain indicated that it lasted for one year or more
- In 2002–2003, ambulatory medical care or prescribed medicine expenses for headaches alone totalled more than \$4 billion – not including self-treatment, over-the-counter drugs and inpatient hospital expenses.

Pain, particularly chronic pain, has a wide array of repercussions on quality of life. The longer the duration of a pain disorder, the more common anxiety and depression become. These confound the treatment of pain by causing irritability and heightened sensitivity to stimuli. Any of an individual's interpersonal

relationships may be affected². A recent study showed 77% of migraine sufferers missed work because of their pain³. When pain causes missed work, a person's sense of purpose and usefulness may be diminished. Additionally, there are obvious broader social and economic impacts.

If there is a known cause of pain, treatment efforts may be directed at this factor. Biomedical interventions such as surgery, physical therapy and nerve blocks may be favourably employed in some cases. However, when the cause is unknown, analgesic drugs are usually the first line of treatment. While they may improve the pain, they have almost no chance of rectifying its origin. Thus, unless the cause is somehow resolved, the drugs will need to be taken indefinitely. Many pain medications have potential side effects, including the following⁴:

- Acetaminophen: hepatotoxicity, nephrotoxicity
- Aspirin: gastrointestinal irritation and bleeding, Reye's syndrome in children
- NSAIDs: gastrointestinal bleeding, nephrotoxicity, exacerbation of CHF
- COX-2 inhibitors: possible increased risk of myocardial infarction

- Opioids: sedation, constipation, addiction
- Carbamazepine: bone marrow suppression
- Gabapentin: sedation, dizziness, ataxia, gastrointestinal effects
- Tricyclic antidepressants: elevated risk of myocardial infarction, drowsiness, urinary retention, dizziness, impaired sexual functioning, disorientation or confusion, weight gain

Moreover, the role of stronger opioid analgesics may be paradoxical. While they can diminish perception of pain enough to allow the patient to be more functional, their sedating effect can impede ability to engage in meaningful activity. As a result of these drawbacks, many patients give up on biomedical treatment. The CDC study showed that a large number of patients, especially those over age 65, under report their pain, possibly because of scepticism about treatment options⁵.

Few medical insurance plans in the United States pay for TCM, but when they do, it is acupuncture that is most often covered. Almost no insurers pay for herbs. Because this is likely to be an out-of-pocket expense, many consumers demand that their herbs be affordable. Chinese herbs are most commonly prepared by decoction and administered as a tea, though historically, a number of formulas have been consistently prepared as pills or powders. Prescribed in bulk form for decoction, usual doses are frequently 100g daily, and these are commonly sold at five cents or more per gram, for a monthly cost of \$150 plus practitioner's fees. Many patients, accustomed to a small co-payment on drugs, feel this is costly. Added to this strain of expense are additional perceived obstacles, such as the time and resources required for preparation, the risk of ruining the herbs during preparation, the smell of the cooking herbs, and the limited portability of the tea. These factors have led to the increased use of Chinese herbs in other forms.

A popular form of administering Chinese herbs in recent years is as concentrated herbal powders, or "granules." These are usually manufactured by decocting or infusing herbs in a closed system at a relatively low temperature, concentrating the tea by evaporation, and spraying the resulting liquid onto a substrate carrier, such as corn starch, potato starch, methyl cellulose, or powdered raw herb. Improvements in granule preparation allow for preservation and reintroduction of volatile constituents of the herbs (such as essential oils), which might otherwise be lost in the cooking process⁶.

Granules are portable and relatively easy to take. They tend to have a somewhat less objectionable flavour than herbal decoctions, and they are usually cheaper than bulk herbs.

Granules do have some drawbacks. Some manufacturers do not disclose the actual concentration of their granules and concentrations vary from herb to herb and perhaps from batch to batch. In bulk form, herbs are given in higher or lower doses relative to the other herbs in the formula

to achieve a particular effect. This is nearly impossible to control with granules of unknown concentration, because the clinician does not know which granules are highly concentrated and which are only slightly concentrated. This issue also makes overall dosing of the formula difficult if the intention is to approximate a certain bulk dosage, since again, the practitioner does not know how much bulk herb the granules represent. These issues have been somewhat resolved by other manufacturers, who claim a standardised concentration (e.g., 5:1). However, certain herbs, such as mineral substances, are, technically speaking, impossible to concentrate. Decocting them actually makes them less concentrated than the raw herb. For these substances, even the "guaranteed" analysis is likely to be meaningless. (However, I do occasionally use them because I feel this process sometimes renders them more digestible than the raw powder. Certain manufacturers claim to use unprocessed raw powders, rather than prepared granules, for these substances because of the inability to concentrate them. In such cases, the "granule" version would obviously not be worth the expense.) Some granules are quite hygroscopic, meaning they attract water from the surrounding air. Over time they may become so solidified as to be unusable. Granules that utilise cornstarch as a substrate may not be ideal for corn sensitive patients. For herbs that vary in effect based on cooking time [e.g., da huang, *Rheum palmatum* (root)], the clinician will have no control over this variable, and indeed, will not know which effect(s) will be most pronounced in the granule form until they try the product or contact the manufacturer. For herbs with some degree of toxicity [e.g., xi xin, *Asarum heteropoides*, quan xie, *Buthus martensi*, wu gong, *Scolopendra mutilans*, fu zi, *Aconitum carmichaeli* (root)], the resultant toxicity of the granule form may be unknown. Finally, the buyer rarely has any sense of the quality of the original raw herbs used to manufacture the granules, nor their pesticide and heavy metal contamination status, toxic variables which might be amplified through the concentration process.

Raw powdered herbs are another treatment option. They are cheaper and usually weaker than granules. Because the surface area of herbs is increased tremendously through the powdering process, much smaller doses can be used than with bulk herb decoctions. Since the entire herb is consumed, no constituents are lost in the cooking process or discarded when tea is decanted. Compounds that have limited solubility will also be retained and consumed. While pill formulas may sometimes be cheaper, raw powders are the least costly way to administer herbs with full control over the formula.

Many traditional formulas were written originally as raw powders: Xiao Yao San (Rambling Powder), Si Ni San (Frigid Extremities Powder), Chai Hu Shu Gan San (Bupleurum Powder to Spread the Liver), Wu Ling San (Five-Ingredient Powder with Poria), Si Miao San (Four

Marvel Powder), Huo Xiang Zheng Qi San (Agastache Powder to Rectify the Qi), Cang Er Zi San (Xanthium Powder), Sheng Mai San (Generate the Pulse Powder), Shen Ling Bai Zhu San (Ginseng, Poria and Atractylodes Macrocephala Powder from the Analytic Collection), Yu Ping Feng San (Jade Windscreen Powder), etc. A great number of traditional formulas were also administered originally as raw powder, that was rolled into pills with water or honey: Liu Wei Di Huang Wan (Six-Ingredient Pill with Rehmannia), Jin Gui Shen Qi Wan (Kidney Qi Pill from the Golden Cabinet), Gui Zhi Fu Ling Wan (Cinnamon Twig and Poria Pill), Zuo Gui Wan (Restore the Left [Kidney] Pill), You Gui Wan (Restore the Right [Kidney] Pill), Tian Wang Bu Xin Dan (Emperor of Heaven's Special Pill to Tonify the Heart), Qing Qi Hua Tan Wan (Clear the Qi and Transform Phlegm Pill), Bao He Wan (Preserve Harmony Pill), Li Zhong Wan (Regulate the Middle Pill), Zhu Sha An Shen Wan (Cinnabar Pill to Calm the Spirit), etc. A common objection to the use of herbs that are not decocted together, whether granules or raw powder, is that the herbs are not allowed to interact in boiling water, thought by some to be a vital step since it is presumed that innumerable chemical reactions occur in this process. However, none of the above formulas – staples of most TCM practices – were decocted originally.

Raw herb powder has some limitations. Since the increase in surface area varies from herb to herb, some herbs will be greatly "potentiated" by powdering (i.e., herbs with a low surface area-to-volume ratio, such as thickly cut stems, roots, and barks) and others will be relatively unchanged (i.e., herbs with a high surface area-to-volume ratio, such as flowers and leaves). Therefore, no standard equation can be used to estimate how much a herb's dose can be reduced by powdering it. This high surface area also makes herbs very susceptible to degradation by volatilisation and oxidation. For this reason, they should ideally be kept in a cool, dark place and consumed soon after being ground (I usually give patients no more than a month's supply at a time, which they can refrigerate to keep fresh longer). Toxic herbs that are traditionally detoxified by decoction may not be rendered sufficiently non-toxic if the powder is not cooked before consumption; in such cases, mixing them with boiling water or even cooking them may be worthwhile. In raw powder form, some formulas may not be strong enough to achieve the desired therapeutic effect. Some herbs do not "shatter" well in blender-type grinders, leaving them fibrous and difficult to swallow [e.g., huang qi, *Astragalus membranaceus* (root), lu gen, *Phragmites communis* (rhizome), zhu ru, *Bambusa breviflora* (stem) cang er zi, *Xanthium sibiricum* (fruit)]. Freezing these herbs first may encourage shattering in this type of grinder, but they are best powdered in a hammer mill type grinder.

All powdered herbs and herb extracts have a common problem of dosing, whereby a formula containing a greater number of herbs will deliver lower doses of each herb

than a formula with a smaller number of herbs unless the total administered dosage is increased accordingly. Thus a twelve-herb formula, if given at the same daily dose as a six-herb formula, will provide half as much of each herb. Additionally, powders rarely provide doses equivalent to those given in contemporary decoctions (which are typically 6-30g of each herb per day). To approximate even just a 100g bulk herbal formula with one of the more concentrated 5:1 granules would require 20g daily, but many clinicians prescribe much lower doses (9-12g daily). One popular brand of Chinese herbal pills are made almost exclusively from raw herb powders. These pills are typically 750mg each, and even at the upper end of dose range – 18 pills daily – they provide only 13.5g total herb per day. However, they appear to defy conventional dosing standards for bulk herbs, as they are widely used with apparent success. All these difficulties considered, it is my belief that raw herb powders and granules can be favourably combined and cleverly administered to provide an optimal therapeutic effect at significantly lower cost, and in a much more convenient form than bulk herb decoctions.

In my own practice, I use predominantly raw powdered herbs, usually with considerable success. Granules are included when I wish to deliver higher doses of certain herbs (e.g., huang qi); for herbs that require prolonged cooking to be active or easier to digest (e.g., long gu, *Os draconis*, mu li, *Ostrea gigas*); for herbs that are detoxified by cooking [e.g., fu zi, *Aconitum carmichaeli* (root)]. Another factor in my decision of whether to use granules or raw herbs is a mostly intuitive sense I have about certain herbs, about whether or not they would be favourably concentrated. For instance, I almost never use granules of herbs that appear to derive the brunt of their therapeutic strength from aromatic essential oils (most exterior releasing herbs, all herbs that aromatically transform dampness, some herbs that warm the interior, some qi movers, etc.), because I believe they lose potency when converted to granules. Finally, I usually prefer raw herbs when I wish to be precise with dosing. For instance, though the process of converting a toxic herb such as xi xin, *Asarum heteropoides* (root) or quan xie, *Buthus martensi* to a granule would reduce or eliminate its toxicity, it would also make dosing of these strong herbs nebulous; therefore, I use them raw and in small, safe amounts.

Case Study

A 56-year-old female sought treatment for severe migrating pain that had persisted for the past ten months. The pain began in her right elbow as a sharp electrical-shock sensation. As a nurse, she first sought biomedical treatment. She received a cortisone injection in the elbow and it improved. However, shortly thereafter, her right shoulder started to hurt. She received a cortisone injection in this shoulder, but it did not help. She undertook a course

of physical therapy, but the symptoms only worsened. The painful area gradually expanded to include a burning sensation in the left shoulder and upper arm, jaw pain, a “creepy crawly” sensation around her upper back and posterior neck, burning sensations throughout her back, burning and heaviness in her legs, and numbness in her feet. She said she felt like she had muscle spasms all over her body. She received a course of prednisolone and had additional cortisone injections, but these did not provide any benefit. An MRI showed narrowing of the spinal canal at C4, but no spinal cord impingement. She had previously received numerous acupuncture treatments, which had not helped, and had started seeing a chiropractor. The chiropractor told her there was nothing wrong with her spine, but that her muscles were tight and inflamed.

She also suffered from an irritable bladder, which she said always felt full. She had frequent voiding of small amounts of urine. Her urinalyses showed no bacteria. She reported occasional migraines when under stress. She occasionally saw floaters. Before menopause she had very heavy periods, for which she had a uterine ablation. She complained of flatulence, especially after eating vegetables. Her mood was upbeat, but she was frustrated by her pain and worried that it would impair her ability to work and garden. All other systems were normal. Her energy level was good and her sleep was good (except when disturbed by the pain). Her blood sugar, blood pressure, thyroid and blood lipids were normal. Her erythrocyte sedimentation rate was average. Her white blood cell count was normal. Her tongue was red, slightly toothmarked, with no coating, and had a raw look like a tenderised piece of meat. Her pulses were slippery and slightly thin overall. The Kidney pulses were thinner, weak at the superficial level and slippery at the deep level.

I interpreted the slipperiness of her pulses as more of a heat sign than dampness, though I believed dampness was also a part of her diagnosis, given the slightly toothmarked appearance of her tongue. Wind-damp accumulation can produce numbness and dampness in the lower jiao and can produce a sensation of fullness in the bladder. The tongue appearance, the slightly thin pulses, and her symptom picture seemed to indicate deficiency of Liver and Kidney yin. The somewhat weak Kidney pulses were another sign of moderate Kidney depletion. I believed the “creepy crawly” sensations to be due to internal wind caused by Liver yin deficiency heat. The migrating quality of the pain revealed an obvious wind component to the disease, and since all pain is caused by stagnation, qi and blood stagnation were also part of her diagnosis. I had not seen this kind of pain pattern previously, but having successfully treated other conditions of widespread inflammation as latent heat with an infective origin, I considered this a possibility as well.

This patient came for herbal treatment only. She wanted the herbs to be in a form she could easily carry with her

and which would not require extensive preparation. I used a combination of raw herb powder and granules. The company that I bought the raw herb powders from does not disclose actual concentration of their granules. In my experience, they act at about three times the potency of bulk herbs by weight (3:1), and I treat them this way when adding them to raw powders. The amount of bulk herb I believe each granule dose approximately represents is indicated in brackets [] below. The choice of which form of herb to use was based primarily on how high a dose I wanted to give of each herb. The doses given for each herb are meant to convey the ratios between the various herbs I chose as I was constructing the formulas, and do not indicate actual daily doses.

Formula 1:

- sheng di huang, *Rehmannia glutinosa* (root-tuber) granule 7g [21g]
- huang bai, *Phellodendron chinensis* (bark) raw 15g
- zhi mu, *Anemarrhena asphodeloides* (rhizome) raw 10g
- zhi zi, *Gardenia jasminoides* (fruit) raw 9g
- ban lan gen, *Isatis tinctoria* (root) granule 7g [21g]
- ge gen, *Pueraria lobata* (root) granule 7g [21g]
- chi shao, *Paeonia veitchii* (root) raw 9g
- dan shen, *Salvia miltiorrhiza* (root and rhizome) raw 12g
- yi yi ren, *Coix lacryma-jobi* (seed) granule 10g [30g]
- bai ji li, *Tribulus terrestris* (fruit) raw 11g
- jiao gu lan, *Gynostemma pentaphyllum* (rhizome) granule 5g [15g]
- hong jing tian, *Rhodiola crenulata* (root and rhizome) granule 5g [15g]
- gan cao, *Glycyrrhiza uralensis* (root and rhizome) raw 5g
- ji nei jin, *Gallus gallus domesticus* raw 12g

Dose

7g, three times daily, mixed in hot water

Analysis

The first portion of the formula consists of heat clearing herbs: sheng di huang, huang bai, zhi mu, zhi zi, and ban lan gen to address the burning pain. Of these, sheng di huang and zhi mu also nourish yin. Ban lan gen was included to also address any underlying infection. Ge gen was used to release the muscle layer and relieve pain, particularly of the upper body. Chi shao and dan shen were included to cool and move the blood to alleviate pain. Yi yi ren was used to drain dampness, resolve wind-dampness, and strengthen the Spleen. Bai ji li was included to extinguish wind; it also has a tropism in Ayurvedic medicine for the urinary tract and is said to cool and soothe this region⁷. Jiao gu lan was included as a general qi tonic and adaptogen, capable of improving resistance to physical stress (such

as chronic pain)⁸. Hong jing tian was included as another general, cooling tonic and adaptogen. It is used to improve resistance to a variety of stressors and improve mood⁹. Gan cao was used as a harmonising herb, to support the Spleen, and bio-medically speaking, to tonify the adrenal glands and prolong the half-life of cortisol. Ji nei jin was included to enhance the digestibility of the formula and mildly strengthen the Spleen.

Results

After one week on this formula, the patient reported a slight reduction of the crawling sensation on her neck, but her other symptoms were unimproved. She reported more lower back pain, more jaw pain and more bladder urgency.

Formula 2:

- he huan pi, *Albizia julibrissin* (bark) granule 7g [21g]
- sheng di huang, *Rehmannia glutinosa* (root-tuber) granule 7g [21g]
- huang lian, *Coptis chinensis* (rhizome) raw 10g
- huang bai, *Phellodendron chinensis* (bark) raw 12g
- ci wu jia, *Eleutherococcus senticosus* (root and rhizome) granule 7g [21g]
- jiao gu lan, *Gynostemma pentaphyllum* granule 5g [15g]
- chuan xiong, *Ligusticum chuanxiong* (root) raw 15g
- xi xin, *Asarum heteropoides* (herb) raw 4g
- xu duan, *Dipsacus asperoides* (root) raw 12g
- di long, *Lumbricus* raw 10g
- qiang huo, *Notopterygium incisum* (root and rhizome) raw 9g
- du huo, *Angelica pubescens* (root) raw 9g
- qin jiao, *Gentiana macrophylla* (root) raw 12g
- bai shao *Paeonia lactiflora* (root) raw 10g

Dose

7g, three times daily, mixed in hot water

Analysis

The patient grew more frustrated when the first formula did not help significantly. In this second formula, I decided to support her shen with he huan pi. I chose to focus more on the wind-damp component here also, by adding qiang huo, du huo, and qin jiao. While the first two of these herbs are somewhat warming, qin jiao is cooling and can clear deficiency heat. I continued to support the yin with sheng di and now bai shao. Bai shao is useful for muscle spasms and can astringe Liver yin. For the heat-clearing component, I chose huang lian and huang bai (as well as the previously mentioned herbs). I replaced bai ji li with di long, a stronger wind-extinguishing herb that also opens the channels and collaterals and clears heat. For the tonification component of the formula, I kept jiao gu lan and added ci wu jia and xu duan. According to Bensky, et

al, ci wu jia tonifies the Spleen, Kidneys, and Heart, calms the shen, mobilises the Blood, and unblocks the collaterals. It can be used for any pain due to blood stasis¹⁰. Xu duan nourishes the Liver and Kidneys, promotes blood circulation, and alleviates pain, especially of the lower back. Xi xin was added as an analgesic herb, to clear wind and eliminate pain. Chuan xiong was included to move blood to alleviate pain.

Results

After taking this formula for two weeks, the patient reported a dramatic improvement in the crawling sensation on her back. Her jaw felt much better, and she had not had any headaches. The urinary urgency was slightly improved, but still problematic. Her lower back was still sore, her calves felt painful and heavy, and her whole left lower extremity felt painful and tingly. Her left arm felt like it was “always on fire.”

Formula 3

- yan hu suo, *Corydalis yanhusuo* (tuber) raw 75g
- di long, *Lumbricus* raw 20g
- quan xie, *Buthus martensi*, raw 4g
- xi xin, *Asarum heteropoides* (herb) raw 6g
- huang lian, *Coptis chinensis* (rhizome) raw 5g
- huang qin, *Scutellaria baicalensis* (root) raw 5g
- da huang, *Rheum palmatum* (root and rhizome) raw 5g
- ci wu jia, *Eleutherococcus senticosus* (root and rhizome) granule 7g [21g]
- xu duan, *Dipsacus asperoides* (root) raw 8g
- du huo, *Angelica pubescens* (root) raw 7.5g
- qiang huo, *Notopterygium incisum* (root and rhizome) raw 7.5g
- sheng di huang, *Rehmannia glutinosa* (root-tuber) granule 3 [9g]
- gan cao, *Glycyrrhiza uralensis* (root and rhizome) raw 5g

Dose

7g, three times daily, mixed in hot water

Analysis

In this formula, I wanted to stay with the same general theme as the previous one, since it appeared to benefit her, but I hoped to enhance the results by being more systematic with its structure. This formula, by weight, is about 50% blood moving (yan hu suo), about 20% wind resolving (di long, quan xie, xi xin), about 10% heat clearing (huang lian, huang qin, da huang), about 10% tonifying (ci wu jia, xu duan), and about 10% wind-damp expelling (du huo, qiang huo). Gan cao was added again to harmonise these disparate natured herbs, reduce the toxicity of some of the herbs (xi xin, quan xie), support the adrenal glands, and control inflammation. Glycyrrhetic

acid (GA) and glycyrrhizin (GL) have been shown to possess anti-inflammatory activity while simultaneously potentiating the action of hydrocortisone and cortisol. GA and GL also inhibit the metabolism of corticosteroids, thereby enhancing the effect of cortisol and ACTH and indirectly reducing the demand on the adrenal glands to suppress chronic inflammation¹¹. The addition of quan xie and yan hu suo was to intensify the analgesic nature of the formula. My intention with da huang was to both clear heat and also promote blood circulation and additionally to clear heat and dampness from the lower jiao for her bladder irritation.

Results

She felt even more relief from this formula than the previous one. She had less pain overall and less burning, but these symptoms were not completely eliminated. Her calves were still sore and heavy and she had sciatica-like pain in her left lower extremity. Her neck also felt tense. She took this formula for five weeks. For two of these weeks, I decided to try giving her 25g yan hu suo granules rather than 75g raw herb (to see if the granules were indeed about three times the potency of raw herbs by weight). During this time I had her reduce her daily dose of the formula to 14g to maintain even doses of all other ingredients. (The actual dose comparison of yan hu suo was about 10g raw herb daily versus about 3.3g granules daily.) For these two weeks, she felt the formula was noticeably less effective and insisted I give her the raw herb again. As soon as she resumed the formula with raw yan hu suo, she felt an improvement again.

Formula 4

- yan hu suo, *Corydalis yanhusuo* (tuber) raw 75g
- di long, *Lumbricus*, raw 20g
- quan xie, *Buthus martensi*, raw 4g
- xi xin, *Asarum heteropoides* (herb) raw 6g
- han lian cao, *Ecliptae prostrata* (herb) granule 6g [18g]
- ci wu jia, *Eleutherococcus senticosus* (root and rhizome granule) 7g [21g]
- mu gua, *Chaenomeles speciosa* (fruit) raw 9g
- ji xue teng, *Spatholobus suberectus* (stem) granule 5g [15g]
- xi xian cao, *Siegesbeckia pubescens* (herb) granule 5g [21g]
- qiang huo, *Notopterygium incisum* (root and rhizome) raw 8g
- huai niu xi, *Achyranthis bidentatae* (root) granule 6g [18g]
- ge gen, *Pueraria lobata* (root) granule 5g [15g]
- gan cao, *Glycyrrhiza uralensis* (root and rhizome) raw 5g

Dose

7g, three times daily, mixed in hot water

Analysis

In an effort to address the leg pain and heaviness, I added mu gua to clear wind-dampness from the calves and niu xi to strengthen the Liver and Kidneys and promote blood circulation in the legs. I reintroduced ge gen to release the muscle layer, particularly for her neck and arms. I added ji xue teng to promote blood circulation in the limbs. I decided to see what would happen if I removed the strong heat-clearing component of the formula. I removed the yellow herbs and replaced sheng di with the slightly milder but similar han lian cao. I also removed du huo and introduced the cooler xi xian cao to eliminate wind-dampness, remove obstructions from the channels and collaterals, calm the shen and pacify the Liver. I maintained ci wu jia as the primary tonic herb. Modern research confirms it is an excellent adaptogen. It acts as a general stabiliser for the user and it increases resistance to a variety of stressors. It is also a COX-2 inhibitor with anti-inflammatory and neuro-protective effects¹².

Results

This formula was the most effective so far. She stayed on it for four months. She had much less pain and virtually no "creepy crawly" sensations. Her calves occasionally felt heavy, but usually felt normal. Her urinary frequency and urgency were much better. However, in the last month, the burning sensation in her left arm had become increasingly severe and it occasionally spread into her neck. She continued to receive treatments from a chiropractor, who informed her that there was still no evidence of nerve impingement.

Formula 5

- yan hu suo, *Corydalis yanhusuo* (tuber) raw 75g
- huai niu xi, *Achyranthis bidentatae* (root) granule 10g [30g]
- ji xue teng, *Spatholobus suberectus* (stem) granule 10g [30g]
- di long, *Lumbricus* raw 20g
- quan xie, *Buthus martensi*, raw 6g
- xi xin, *Asarum heteropoides* (herb) raw 6g
- zhi huang qi, *Astragalus membranaceus* (root) prepared raw 15g
- qiang huo, *Notopterygium incisum* (root and rhizome) raw 12g
- bai jie zi, *Brassica alba* (seed) raw 12g
- mu gua, *Chaenomeles speciosa* (fruit) raw 12g
- shi gao, *Gypsum fibrosum*, raw 24g
- bai shao, *Paeonia lactiflora* (root) granule 6g [18g]
- gan cao, *Glycyrrhiza uralensis* (root and rhizome) raw 6g
- gui zhi, *Cinnamomum cassia* (twig) raw 8g

- sang ji sheng, *Taxillus chinensis* (stem) granule 10g [30g]
- ge gen, *Pueraria lobata* (root) granule 10g [30g]

Dose

7g, three times daily, mixed in hot water

Analysis

This formula retains the high dose of yan hu suo for her pain, as well as the other blood movers, ji xue teng and huai niu xi, both in increased doses. On palpation, the muscles of her upper back and shoulders felt tight to me, so I included the formula Shao Yao Gan Cao Tang (Peony and Licorice Decoction) with raw gan cao instead of zhi gan cao to soften spasms and cramps. I added gui zhi to activate yang and open the channels, especially of the arms. I combined it with shi gao to cool gui zhi's warming effect and address the burning sensation. I switched from han lian cao to sang ji sheng to nourish the yin while also expelling wind-damp. Finally, I added bai jie zi to promote qi circulation and remove phlegm from the channels. The three main factors in causing an acute disorder to become chronic are the development of deficiency, the development of blood stasis, and the development of phlegm¹³. Having addressed the first two factors, I wanted to see if the addition of an opening, phlegm-resolving herb would enhance this formula's effect. This herb is also anti-inflammatory and analgesic¹⁴. Huang qi, gui zhi, and bai shao are all contained within the formula Huang Qi Gui Zhi Wu Wu Tang (Astragalus and Cinnamon Twig Five-Substance Decoction), used to warm and harmonise the channels, nourish qi and blood, and unblock painful obstruction to treat pain, numbness, and paraesthesia. It also contains the key pair of herbs in Gui Zhi Tang (Cinnamon Twig Decoction) – gui zhi and bai shao – to harmonise the ying and wei. Bai shao, gui zhi, gan cao, ji xue teng, sang ji sheng and mu gua are all contained within the formula Gui Zhi Shao Yao Zhi Mu Tang (Cinnamon Twig, Peony and Anemarrhena Decoction), used for painful obstruction in the limbs and joints.

Results

The patient says she loves this formula. She has been taking it for three months and she is virtually symptom-free. She reports her pain, burning and numbness only return fleetingly and are mild. Her urination is almost back to normal. Since her initial visit, the patient's tongue has gradually become somewhat less red and less raw looking. Her pulses have felt essentially the same throughout her treatment. I feel this woman's prognosis is moderately good. I am encouraged by her response to this final formula. However, given the changing nature of her condition, with its tendency to improve with herbs for a while but then to worsen, I am curious about whether

she will relapse. Although her condition did not appear to respond best to anti-infective herbs (possibly disproving the initial latent heat hypothesis), I continue to wonder if there is an infectious agent, as she still has no biomedical diagnosis. With no obvious improvement in her pulse picture, I feel the underlying deficiency remains an issue, as does the dampness. Her residing in a climate that is damp for much of the year (Portland, Oregon) is likely to play a role in the persistence of wind-dampness. Though it is an unusual and perhaps drastic recommendation for most patients to hear, I am increasingly advising those with chronic dampness to consider leaving Portland and moving to a drier place. This may turn out to be an apt recommendation for this woman. My plan is to continue her on the formula she has been using, gradually putting more emphasis on tonifying the Liver and Kidneys and less on relieving pain.

Conclusion

While we do not yet know if a cure for this patient's condition – that is, no need for any further treatment – is attainable by treatment with Chinese herbs, this case study demonstrates the great value this therapy has to offer. Where no other medical intervention was able to improve her condition, medicinal herbs have made a remarkable difference in her symptoms. Furthermore, they have minimal toxicity and no noticeable side effects. Though a few of the herbs in her formulas possess some degree of toxicity (quan xie, xi xin), these are given in doses far below safe limits¹⁵. While her busy family life and nursing career would have made it difficult for her to cook bulk herbs as a decoction, she was able to carry her powdered herbs in her purse and prepare them anywhere she could procure a cup of hot water. She has been able to continue working, to spend time in her garden, and most importantly, to feel productive, active and purposeful in her life. ■

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