

Chinese Herbs for Lymphedema

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Exploring the Principles of Treating Phlegm-Damp Accumulation

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BACKGROUND

The lymphatic system runs throughout the body. Unlike the system of vessels that transports the blood, the lymphatic system lacks independent musculature to pump the lymph through the body. Instead, the lymphatic flow occurs secondarily to the pumping action in nearby blood vessels (primarily the veins) and as a simple result of physical movements of the body. Lymph gains its contents from the blood, and the lymph vessels (which are larger than capillaries but much smaller than the smallest veins) drain the majority of their contents back into the blood stream via the thoracic duct at the base of the neck. There are small, bean-shaped lymph nodes laced along the lymphatic vessels, but the major clusters are in the neck, armpits, abdomen, and groin. During an infection, it is common for the lymph nodes to become enlarged, sometimes noticeably so, as they fill with immune cells and the debris from immune attack.

Lymphedema (also spelled lymphoedema), is a swelling of the subcutaneous tissues by accumulation of lymph fluid (1). The disorder has become a common medical concern as the result of modern treatments for breast cancer: mainly surgery, but also radiation therapy. In many cases of breast cancer, it is standard practice to remove tissues beyond the main tumor mass. In addition to taking some surrounding breast tissue (or all, in the case of mastectomy), several or all of the adjacent lymph nodes in the arm pit are excised. Lymph node removal is undertaken mainly as a means of excising more of the cancer cells when the nodes have been invaded or are suspected to be involved. Sometimes, limited lymph node removal is carried out as a means of determining the extent of the spread of the breast cancer (the still-experimental procedure is called sentinel node biopsy). The node removal (or damage, in the case of radiation therapy affecting the nodes) reduces the efficacy of lymph

movement; lymphedema can result. Rates of occurrence of lymphedema secondary to breast cancer treatment are reported to be on the order of 9% to 20% (2, 3). The risk is higher for more advanced cancers requiring more extensive surgery and/or radiation.

Lymphedema can also occur as the result of injuries as well as from any disease process that damages or obstructs the lymph nodes (e.g., lymphedema has been noted in rare cases with sarcoidosis and Kaposi's sarcoma). In addition, lymphedema of the legs occurs in elderly persons suffering from chronic venous insufficiency, since the pumping of blood through the veins contributes to the movement of lymph (4). Lymphedema is more common in women than in men, and leg edema is more common with aging.

The main symptom of lymphedema is the evident swelling, with only slight pitting, which can increase the volume of the affected limb by up to 50% for the arms; up to about 25% for the legs. Other symptoms, especially in the more severely edematous cases, may include pain, tightness, tension, heaviness of the limb, hardness of the tissues, stiffness of the affected limb, and, in persistent cases, there can be ulceration due to the impaired circulation (5).

Lymphedema is usually treated by a combination of non-invasive physical methods (6). These include manual lymph drainage (in essence, massaging the fluid out of the arms), compressive bandaging (preventing accumulation of fluid by restricting arm volume), and physical exercises (that promote lymph drainage). These methods not only can greatly reduce lymphedema, but, in many cases, the results are lasting (at least, until local trauma or other inducing event triggers another bout of swelling).

In most cases of lymphedema relatively little pharmacological intervention is now used. Outside the U.S., a treatment method based on use of natural compounds known as benzopyrones has been studied. The benzopyrone therapies will be discussed in a later section of this article.

CHINESE MEDICAL THERAPIES

Chinese medicine has some history of treating conditions that are similar to, or may be, lymphedema. Lymph nodes were indirectly recognized, even in ancient times, as areas that easily become lumpy, but lymph was not known in the same sense that it is recognized in modern medicine. The condition of lymphedema fits the traditional category of phlegm-damp accumulation. The fluid swelling would, by itself, lead one to classify the disease as a dampness accumulation (corresponding directly to the Western term edema). The phlegm aspect of the condition is related to the thickness of the fluids

involved. As we know from modern research, lymph is a somewhat milky fluid that replenishes the blood with chyle (emulsified fat), erythrocytes (red blood cells), and leukocytes (white blood cells); it also carries protein debris. A more watery accumulation based on a less-dense fluid, as occurs in cases of pitting edema, would be considered a moisture accumulation but not a phlegm-damp accumulation.

The Chinese term for phlegm-damp is *tanyin*; *tan* refers to thickened fluids, while *yin* refers to thin fluids. Both the thick and thin fluids of the *tanyin* syndrome are pathological: they represent an abnormal accumulation of fluids. The confluence of the two terms occurs when describing a large volume of somewhat thick fluid and is distinguished from a simple phlegm disorder, which has a lower volume of accumulated material.

In seeking a Chinese herbal therapy for lymphedema of the arms, one looks to both the general treatment of phlegm-damp accumulation and to any historical references to disorders of the arms that correspond most closely to lymphedema. In addition, treatments aimed at the more common problems of lymph node swelling (lymphadenitis), numbness and aching in the arms (corresponding to dampness accumulation), and at swellings, lumps, and pains in the breasts (corresponding to the breast involvement in modern cases) would be potentially useful as reference points for treatment of lymphedema secondary to breast cancer.

Herbal therapies that are suitable for treating these conditions were developed primarily by a single well-known Chinese physician scholar of the Ming Dynasty: Gong Tingxian. The formulas were presented in his book ***Wanbing Huichun (Restoration of Health from Myriad Diseases;*** restoration of health is literally described as return (*hui*) of Spring (*chun*)). In this book, published in 1587 (at about the same time as the ***Bencao Gangmu*** was completed), there is a special section on aching in the arms, but Gong also dealt generally with the problem of phlegm-damp accumulation in several sections of his book. An examination of his formulas that are still in use will reveal the main herbs he relied upon. A further analysis of his formulation methods is presented in Appendix 1, including treatments for other types of diseases.

NOTES ON GONG TINGXIAN AND HIS FORMULAS

Gong Tingxian (1522-1619) was born into a long line of family physicians in what is today called Jiangxi Province. His father, Gong Xin, was a famous doctor, honored with an appointment to the prestigious Imperial Medical Academy. Although Gong Tingxian took his medical studies very seriously as a youth, he apparently did not have the more aggressive, career-oriented attitude that some other family members exhibited. Long before his name became known in medical circles, his

younger brother and one of his nephews had already become medical officials. Early on, he withdrew into a life of solitude in the countryside. It was not until 1593, at the age of 71, that Gong Tingxian suddenly became well known, after curing a case of severe abdominal distention suffered by the favorite concubine of the king of Lu. He was appointed, like his father, as a physician of the Imperial Medical Academy.

Gong was a prolific author, writing into his 90's, and creating 16 works. In his 60's, still in this phase of obscurity and prolonged retreat, he wrote ***Zhongxing Xianfang*** (**Divine Prescriptions from the Apricot Grove**) and ***Wanbing Huichun***. He also wrote ***Gujin Yijian*** (**The Mirror of Ancient and Present Medical Science**), followed up by ***Shou Shi Bao Yuan*** (**Achieving Longevity by Guarding the Source**), a five volume addendum; other works include ***Yunlin Shengou*** (**Divine Rules of the Cloud Forest**; Cloud Forest being one of Gong's Taoist names), and ***Lufu Jinfang*** (**Secret Prescriptions of King Lu's Mansion**).

The formulas of Gong Tingxian are widely used in Japan because he stuck closely to the Han Dynasty tradition, which the Japanese consider the ultimate resource for Chinese herbal medicine. He designed formulas that reflected the work of the ***Shanghan Lun*** and ***Jingui Yaolue*** of the Han Dynasty and the formulas of the ***Hejiju Fang*** of the Song Dynasty, which usually had a formulation style similar to the Han prescriptions. He relied mainly on the same somewhat limited selection of herbs that were used in those texts. Gong's most famous work, ***Wanbing Huichun***, had its formulas made from about 240 different ingredients. His book ***Yaoxing Geguo*** (**Drug Properties in Verse**) published around 1615 A.D., described 400 herbs, having added another 160 items that were in frequent use at the time, though he preferred to stick to certain well-established ingredients. By contrast, the contemporary ***Bencao Gangmu*** described over 1,800 items.

Gong's approach to medicine during the Ming Dynasty was remarkable for his lack of interest in the prevailing theories and new systems of categorization that had come into vogue (7). Instead, he retained the fundamental concept that incorrect living left the person open to adverse influences. He relied mainly on the ideas about pathological influence prevalent during the Han Dynasty period: demons and wind (see *Demons as a cause of disease* and *Drawing a concept: feng (wind)*). Therefore, while disease prevention was to be based on proper lifestyle, the treatment of disease was aimed at dispelling the pathogenic factors and resolving the consequences of their harmful actions (8).

He designed numerous formulas for treating wind ailments, relying heavily on the botanically-related herbs angelica (*baizhi*), siler (*fangfeng*), and chiang-huo (*jianghuo*), all of which are in the same plant

family (Umbelliferae) and have similar active constituents (see: *Analysis of prescriptions for arthritis*). The main effect of wind and other evil influences on the body, as understood by Gong, was a binding up of the flow of qi and moisture. Therefore, he selected herbs to disperse the qi and fluid stagnation, such as magnolia bark, citrus, red atractylodes, saussurea, cyperus, and cardamon (aromatic herbs that penetrate damp congestion), and herbs used generally to dry and drain out accumulated dampness and phlegm, especially hoelen, atractylodes, pinellia, ginger, bamboo, and arisaema.

Unlike the Japanese, Chinese doctors after the Ming Dynasty have not taken interest in Gong's formulas to any great extent, so most discussions about the clinical application of the formulas comes from Japanese sources. Information about traditional and modern applications of the formulas can be found in **Commonly Used Herb Formulas with Illustrations** (9), which reflects the Kanpo medicine system used in Japan and Taiwan.

To help clearly illustrate the selection of herbs used for phlegm-damp syndromes, several of Gong Tingxian's formulas are presented in Table 1 in a format intended to illustrate their common ingredients. These formulas treat stagnation of qi, moisture, and phlegm. One can see that his favored herbs were hoelen, atractylodes, pinellia, arisaema, citrus (of various types, including chih-shih, chih-ko, and blue citrus), licorice, ginger, magnolia bark, saussurea, cardamon, and cyperus. Table 2 describes the formula indications in relation to lymphedema of the arms, including disorders involving the chest area and breasts.

Table 1: Sample Formulas for Resolving Phlegm-Damp Accumulations by Gong Tingxian. Common names for the formulas are presented at the top; the pinyin transliteration of the traditional names are given in Table 2. Herbs are laid out in rows of similar ingredients, a blank means the herb is not included in the formula. Herbs that have similar botanical origins and active constituents are included in a single box, such as pinellia and arisaema (both warming, phlegm-resolving herbs from the same family), citrus species (citrus, blue citrus, chih-shih, and chih-ko), and cardamon varieties (cardamon, tsou-tou-kou, and cluster). In many of the formulas, atractylodes refers to a combination of white atractylodes (*baizhi*) and red atractylodes (*cangzhu*), but this is not specified here. The last box is reserved for other ingredients, with up to a maximum of four specified items (if additional items are present, they are listed as "others"). Hoelen and Alisma Combination is the representative formula, containing all of the key herbs listed except pinellia and arisaema.

Hoelen and Alisma Combination	Pinellia and Arisaema Combination	Tang-kuei and Pinellia Combination	Atractylodes and Cardamon Combination	Magnolia and Hoelen Combination
hoelen	hoelen	hoelen	hoelen	hoelen
atractylodes	atractylodes		atractylodes	atractylodes
	pinellia & arisaema	pinellia		
citrus & chih-shih	citrus	citrus & blue citrus	citrus	citrus
licorice	licorice	licorice	licorice	licorice
ginger, fresh	ginger, fresh	ginger, fresh		ginger, fresh
magnolia bark		magnolia bark	magnolia bark	magnolia bark
saussurea			saussurea	
cardamon			cardamon	
cyperus		cyperus		
alisma, polyporus, areca peel, juncus	chiang-huo, bamboo sap, sinapis, scute	tang-kuei, peony, bupleurum, gardenia, others	morus bark, perilla seed, aquilaria	polyporus, alisma, cinnamon twig, jujube

Cyperus and Cluster Combination	Bamboo and Ginseng Combination	Siler and Chiang-huo Combination	Trichosanthes and Chih-shih Combination	Chih-shih and Cardamon Combination
hoelen	hoelen	hoelen	hoelen	hoelen
atractylodes		atractylodes		
	pinellia	pinellia		pinellia
citrus	citrus & chih-shih	citrus	citrus & chih-shih	citrus & chih-shih
licorice	licorice	licorice	licorice	licorice
ginger, fresh	ginger, dried	ginger, fresh	ginger, fresh	
magnolia bark				magnolia bark
saussurea			saussurea	saussurea
cardamon and cluster			cardamon	cardamon and tsao-tou-kou
cyperus	cyperus			cyperus
jujube, ginseng	bamboo, coptis, bupleurum	tang-kuei, bupleurum, jujube, Chiang-huo, others	scute, tang-kuei, platycodon, bamboo, others	fennel, corydalis

Table 2. Indications for the Formulas Relevant to Lymphedema Secondary to Breast Cancer

Formula (Common Name/Pinyin)	Relevant Indications
Hoelen and Alisma Combination <i>Fenxiao Tang</i>	edema
Pinellia and Arisaema Combination <i>Qingshi Huatan Tang</i>	swollen lymph glands
Tang-kuei and Pinellia Combination <i>Pinggan Liuqi Yin</i>	fibrocystic breasts
Atractylodes and Cardamon Combination <i>Chuan Sijunzi Tang</i>	phlegm accumulation in weak individuals
Magnolia and Hoelen Combination <i>Weiling Tang</i>	edema
Cyperus and Cluster Combination <i>Xiangsha Yangwei Tang</i>	dampness accumulation occurring after an illness
Bamboo and Ginseng Combination <i>Zhuru Wendan Tang</i>	phlegm accumulation
Siler and Chiang-huo Combination <i>Jiawei Baxian Tang</i>	numbness and paralysis of limbs
Trichosanthes and Chih-shih Combination <i>Gualou Zhishi Tang</i>	phlegm accumulation
Chih-shih and Cardamon Combination <i>Zhisuo Erchen Tang</i>	stagnant water and phlegm in the chest

The famous 20th-Century Japanese doctor Keisetsu Otsuka developed a new formula based on the prescriptions in the arm-ache category of **Wanbing Huichun**. He called it *Erzhu Tang*, referring to the combined use of white and red atractylodes (*baizhu* and *cangzhu*; *er* = two) that was often used by Gong for dampness accumulations. The formula also included pinellia and arisaema for resolving phlegm. The common name assigned to the formula is Atractylodes and Arisaema Combination. It is derived from the best-known standard phlegm-damp formula, *Erchen Tang* (Citrus and Pinellia Combination, with citrus, pinellia, hoelen, ginger, licorice). To this base formula are added: red and white atractylodes and cyperus for aromatically dispersing fluid accumulation; chiang-huo and clematis for dispelling wind-damp from the arms; and scute for drying dampness.

The formula is similar to Gong's original Pinellia and Arisaema Combination (*Qingshi Huatan Tang*; Clear Moisture and Resolve Phlegm Decoction), which includes angelica in addition to the related chiang-huo, and has bamboo and sinapis in place of clematis and cyperus. Otsuka's formula has become a key prescription for treating shoulder bursitis, which is understood to be a phlegm-damp accumulation in the shoulder, for which the inducing factor is wind (from the traditional perspective; the modern view is that a traumatic pressure to the bursa causes the inflammatory condition with fluid swelling). The general description of the formula's use is "aching in the arms due to the presence of phlegm and stagnant water."

BENZOPYRONES

Benzopyrones are a type of flavonoid; one of the main benzopyrones that has been of interest in relation to lymphedema is coumarin. This compound should not be confused with the powerful blood thinner coumadin, which is a derivative of coumarin; coumarin does not have the anticoagulant properties (see note following Table 3). The story of benzopyrones has been developed primarily by one individual: J.R. Casley-Smith. He has been publishing articles about lymphedema and its treatment for more than 40 years (10). He described the use of benzopyrones, coumarin and troxerutin, for this purpose in 1974 (11). In fact, there are 58 published articles (including published letters, editorials, and conference reports) on lymphedema by Casley-Smith. Most of the articles are either about, or include mention of, the benzopyrone treatments.

According to Casley-Smith, benzopyrones function by inducing macrophages, increasing both their number and their activity. These macrophages then lyse the proteins in the lymphatic fluid. The resulting smaller proteins can then be resorbed, with concurrent reduction in water volume of the affected area. Further, the benzopyrenes may aid in the movement of the collected lymphatic material by other mechanisms of cellular stimulation. The claim is that the benzopyrones begin acting within about 24 hours of ingestion but that the process of resolving lymphedema by their use can take several months. In one study using a mixture of flavonoids different than those relied on by Casley-Smith but, presumably, with the same action, improvements were said to be observed starting from the third month of treatment (12). The usual treatment time in clinical trials for lymphedema using benzopyrones is six months. While Casley-Smith indicates that the benzopyrones do not remove the cause of protein-rich edemas for which it is effective, the improvement is said to be very useful. Even topical application of the benzopyrones is said to be of benefit and combined topical and internal treatment is reported to yield the best results (13).

Coumarin, the benzopyrone claimed to be highly effective in relatively low dosage (about 400-800 mg/day), is commonly found in sweet clover (*Melilotus officinalis*) and tonka beans (*Dipteryx odorata*) which are the main natural sources for the lymphedema-resolving drug products that are available in several countries (but not the U.S.). Other flavonoids have been claimed to be effective, including diosmin, which is derived from citrus and is made into a drug product in Europe for vein problems that include edema. Aesculin, a related compound from horse-chestnut, has been recommended for treatment of venous insufficiency and is considered a potential treatment for lymphedema, especially of the legs. It is not known, at this time, what range of flavonoids are effective.

The degree of effectiveness of benzopyrones for lymphedema is not well-established; Casley-Smith describes the action as slow but safe, with the ability to change a gradually worsening condition into a

gradually improving one. There is some research activity regarding the benzopyrones outside of the Casley-Smith facility of Australia, especially in Italy.

Benzopyrone treatment has not been approved in the U.S. and a study that might have led to its use here yielded a negative result. The study was conducted at the Mayo Clinic and tracked 140 women taking either placebo or 200 mg of coumarin twice daily (total: 400 mg, the usual recommended dosage that is reported effective in other studies). No significant difference was noted, and a potential negative effect was observed: 6% of the women showed some evidence of liver toxicity (14).

Casley-Smith has relayed Australian data that suggests a 3% incidence of liver toxicity from use of coumarin, and also mentions some cases of nausea or diarrhea from the treatment. In a study he published in the *New England Journal of Medicine* (5), benefits of the treatment were described in terms of reduction in volume of the affected limb. The lymphedema in arms was 46% above normal volume before treatment and reduced to 26% above normal volume after six months; in legs, the change was from 25% above normal to 17% above normal. In other words, the lymphedema was only partly reduced and required prolonged therapy. Therefore, while benzopyrones may have an effect on lymphedema, the search for other natural substances that might be of benefit should continue.

Coumarin occurs widely in the plant kingdom, but is usually present only in trace quantities. It is not found in significant amounts in herbal medicines, but other closely related compounds are found. It is interesting to note that the formulas of Gong Tingxian depicted in Table 1 always include one or more of the benzopyrone-containing herbs (see Table 3). Other herbs in the formula may contain active constituents different than the benzopyrones that could have an effect on edema.

Table 3: Commonly Used Chinese Herbs with Benzopyrones. Not all the varieties of benzopyrones are listed here, as these herbs contain many variants of the ones listed. These benzopyrones are similar to coumarin, which is the main item recommended by Casley-Smith. Other non-benzopyrone flavonoids found in formulas by Gong Tingxian include those from scute and morus bark.

Herbs	Benzopyrones
citrus varieties, including citrus, blue citrus, chih-shih, chih-ko	7-hydroxycoumarin, 7-geranyloxy coumarin, auroptenol, crenulatin, 7-demethylsuberosin, suberosin
licorice	7-hydroxycoumarin, 7-methoxycoumarin, glycyrin (not to be confused with glycerin)
Angelica species; including angelica, Chiang-huo, tu-huo, tang-kuei	7-hydroxycoumarin, scopoletin, osthenol, ostholumbelliprenin, angelol, angelin

Note on coumadin: Coumadin, also known as warfarin, is a powerful anticoagulant that was discovered in improperly cured leaves and flowering tops of sweet clover (*Melilotus officinalis*). The compound, known by the chemical name dicoumarol, is now prepared synthetically. Because the base molecule for coumadin and related drugs is coumarin, they are sometimes known as coumarin drugs. However, no anticoagulant properties have been attributed to coumarin itself.

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APPENDIX: The Formulation Strategies of Gong Tingxian.

The basis of the formulation style pursued by Gong Tingxian can be traced rather directly from the ***Shanghan Lun*** and ***Jingui Yaolue*** by Zhang Zhongjing (at the end of the Han Dynasty) and from the Song Dynasty Compendium ***Hejiju Fang (Taiping Huimin Hejiju Fang)***. During the Song Dynasty, the Han Dynasty books by Zhang (originally a single volume, split into two), were revived, and the ***Hejiju Fang*** was ordered by the Emperor; it contained many prescriptions using the same basic herbs and similar formulation styles. Certain formulas formed the basis of Gong's work, such as Citrus and Pinellia Combination (mentioned above), as well as Tang-kuei Four Combination, Four Major Herbs Combination, Pinellia and Citrus Combination, and Bamboo and Hoelen Combination. The relationships of the formulas can be illustrated as follows.

Table 4 (a & b): Derivatives of Tang-kuei Four Combination (*Siwu Tang*). Tang-kuei Four Combination was first described in the ***Hejiju Fang***. There are two groups of formulas presented here. The first group of formulas (Table 4a) mainly includes additional herbs for clearing deficiency heat (e.g., anemarrhena, phellodendron) and getting rid of dampness (e.g., citrus, hoelen, atractylodes). The second group of formulas (Table 4b) is derived from Tang-kuei Four Combination plus Coptis and Scute Combination (***Huanglian Jiedu Tang***, a formula of Ge Hong of the Qin Dynasty); the eight herb formula was put together by Gong Tingxian. Those base formulas are then modified by adding herbs that dispel wind (e.g., mentha, angelica or chiang-huo, and siler) and resolve inflammation and abscess (e.g., forsythia, platycodon, and licorice).

Table 4a:

Tang-kuei Four Combination (Siwu Tang)	Phellodendron Combination (Ziyin Jianghuo Tang)	Scute Combination (Zishen Tonger Tang)	Tang-kuei and Rehmannia Combination (Buyin Tang)	Clematis and Stephania Combination (Shujing Huoxue Tang)
tang-kuei	tang-kuei	tang-kuei	tang-kuei	tang-kuei
cnidium		cnidium	cnidium	cnidium
rehmannia	rehmannia, raw	rehmannia, raw	rehmannia, raw	rehmannia, raw
peony	peony	peony	peony	peony
	licorice		licorice	licorice
	anemarrhena	anemarrhena	anemarrhena	
	phellodendron	phellodendron	phellodendron	
	citrus		citrus	citrus
			hoelen	hoelen
	atractylodes			atractylodes
	ophiopogon, asparagus	cyperus, bupleurum, scute, angelica	eucommia, fennel, psoralea, ginseng, achyranthes	ginger, chiang-huo, clematis, siler, stephania, gentiana, persica, angelica, achyranthes

Table 4a:

Tang-kuei and Gardenia Combination (Wen Qing Yin)	Gardenia and Vitex Combination (Xigan Mingmu Tang)	Chrysanthemum Combination (Zi Shen Mingmu Tang)	Schizonepeta and Forsythia Combination (Jingjie Lianqiao Tang)	Gardenia and Mentha Combination (Qingliang Yin)
tang-kuei	tang-kuei	tang-kuei	tang-kuei	tang-kuei
cnidium	cnidium	cnidium	cnidium	
rehmannia	rehmannia	rehmannia		rehmannia
peony	peony	peony	peony	
coptis	coptis	coptis	coptis	coptis
scute	scute	scute	scute	scute
phellodendron	phellodendron		phellodendron	
gardenia	gardenia	gardenia	gardenia	gardenia
	mentha		mentha	mentha
	chiang-huo	angelica	angelica	angelica
	siler		siler	siler
	forsythia		forsythia	forsythia
	platycodon	platycodon		platycodon
	licorice	licorice	licorice	licorice
	gypsum, schizonepeta, tribulus, cassia	chrysanthemum, ginseng, juncus, tea, vitex	schizonepeta, chih-ko, bupleurum	chih-ko, juncus, tea

Table 5: Derivatives of Four Major Herbs Combination (Si Junzi Tang). Four Major Herbs Combination is a formula of the *Hejiju Fang*. Like the base formula, the new formulas derived from it tonify the spleen. Ginseng and Zanthoxylum Combination treats intestinal parasites and Lotus and Citrus Combination treats weakened digestion and diarrhea; both Gleditsia Combination and Astragalus and Platycodon Formula treat skin infections and abscesses.

Four Major Herbs Combination (<i>Si Junzi Tang</i>)	Ginseng and Zanthoxylum Combination (<i>Lizhong Anhui Tang</i>)	Lotus and Citrus Combination (<i>Qipi Tang</i>)	Gleditsia Combination (<i>Tuoli Xiaodu Yin</i>)	Astragalus and Platycodon Formula (<i>Qianjin Neituo San</i>)
ginseng	ginseng	ginseng	ginseng	ginseng
licorice	licorice	licorice	licorice	licorice
hoelen	hoelen	hoelen	hoelen	
atractylodes	atractylodes	atractylodes	atractylodes	
			astragalus	astragalus
			tang-kuei	tang-kuei
			cnidium	cnidium
			angelica	angelica
			platycodon	platycodon
	zanthoxylum, mume	crataegus, citrus, lotus seed, dioscorea, alisma	lonicera, gleditsia, peony	siler, magnolia bark, cinnamon twig

Table 6: Derivatives of Bamboo and Hoelen Combination (*Wendan Tang*). Bamboo and Hoelen Combination was first presented in a Song Dynasty text by Chen Wuci. Most of these formulas were listed also in Table 1. Bamboo and Hoelen Combination is, in turn, a derivative of *Erchen Tang* (Citrus and Pinellia Combination) of the *Hejiju Fang*, comprised of pinellia, citrus, hoelen, licorice, and ginger, which are here listed first. Gong's main alterations are adding more herbs for resolving dampness and phlegm (e.g., atractylodes and platycodon) and adding herbs for clearing heat (e.g., bupleurum and scute). He has not included zizyphus, an ingredient of *Wendan Tang*, in his formulas; it is a moist herb that might contribute to building up fluids.

Bamboo and Hoelen Combination (Wendan Tang)	Pinellia and Arisaema Combination (Qingshi Huatan Tang)	Bamboo and Ginseng Combination (Zhuru Wendan Tang)	Bupleurum and Pinellia Combination (Cingfu Tang)	Trichosanthes and Chih-shih Combination (Gualou Zhishi Tang)
pinellia	pinellia	pinellia	pinellia	
citrus	citrus	citrus		citrus
hoelen	hoelen	hoelen	hoelen	hoelen
licorice	licorice	licorice	licorice	licorice
ginger	ginger	ginger	ginger	ginger
chih-shih		chih-shih		chih-shih
bamboo	bamboo	bamboo		bamboo
coptis	coptis	coptis	coptis	
	atractylodes		atractylodes	
		platycodon		platycodon
	scute		scute	scute
		bupleurum	bupleurum	
zizyphus	arisaema, angelica, sinapis, chiang-huo	ginseng, cyperus	alisma, scirpus, zedoaria, crataegus, ginseng, polyporus, jujube	gardenia, tang-kuei, saussurea, trichosanthes seed, fritillaria, cardamon

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