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## Cases of Cardiac Arrhythmia and Cardiac Failure

by Dr. Jyh-Sheng You

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### FOREWORD

Cardiac arrhythmia indicates irregularities of the frequency, rhythm, originating area of the cardiac impulse, conduction speed,

and the order of excitement. The TCM terms “palpitation (*Xin Ji*)” and “stirring heart palpitation (*Xin Dong Ji*)” are similar to cardiac arrhythmia. A variety of causes may lead to symptoms such



Minister Herb - Zizyphus (*Suan Zao Ren*)



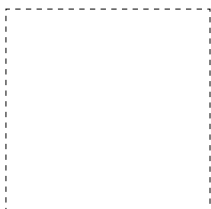
Minister Herb - Platycladus (*Bai Zi Ren*)



Emperor Herb - Raw Rehmannia (*Sheng Di Huang*)



The emperor and two of the minister herbs of Ginseng & Zizyphus Formula (*Tian Wang Bu Xin Dan*) have the ability to nourish the heart and clam the spirit



as irregular heartbeats, feeling flustered and disturbed, and feeling unable to act on one's own. They are usually accompanied by chest tightness, shortness of breath, dizziness, and syncope. "Palpitation (*Xin Ji*)" can be further differentiated into "palpitations due to fright (*Jing Ji*)" and "severe palpitations (*Zheng Chong*)". Palpitations that are caused by fright is termed *Jing Ji* and severe palpitations without any external stimulation is termed *Zheng Chong*.

Congestive cardiac failure is commonly caused by heart disease. It leads to severe cardiac compensatory insufficiency. Through recent clinical observations and experimental studies, most scholars believe cardiac failure is a pattern of deficiency in the root and excess at the exterior. Its pathological basis is heart *Qi* and *Yang* depletion. Its central pathological link is blood vessel stasis and stagnation. Blood stasis, turbid phlegm, and water-rheum are the patterns of exterior excess. Because excessive pathogens such as blood stasis, turbid phlegm, and water-rheum often manifest due to *Zang-Fu* depletion, we should reinforce healthy *Qi* to consolidate the root during treatments. Expelling and purging alone will damage the healthy *Qi*.

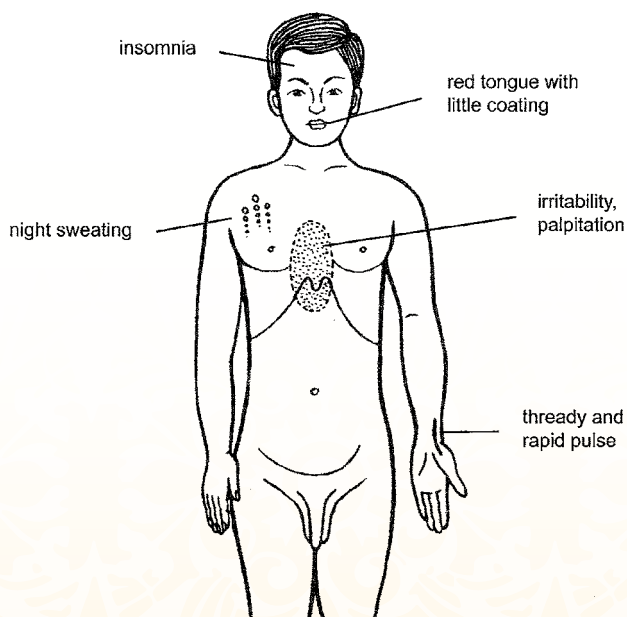
## CASE STUDIES AND TREATMENT PROCESS

### [Case 1] Arrhythmia Case

Mr. Lee, 67-year old male retired farmer. Patient record number 1062XXX. Initial visit date: 07/31/2006

This patient was having on and off symptoms of palpitations for more than 10 years, which became aggravated over the last year.

01/02/2005: He began to have palpitations again (and went to our ER department). His energy level was fine however.



Pattern of Kidney and Heart *Yin* Deficiency with Deficient Fire

April 2006: He went to the National Taiwan University (NTU) ER department due to palpitations, had regular follow-up appointments at the outpatient department, and took medication. He also had follow-up appointments at the outpatient department at Veterans General Hospital, where cauterization was suggested. There, he had cardiac catheterization performed, and there was no sign of narrowing or thrombus.

June 2006: He started to have more frequent palpitations, from once every four weeks to three weeks to every week. He would feel his heartbeats increase when bending, exerting strength, and doing exercises that stress the chest; sometimes he felt irregular heartbeats without any particular reason. He began to pant easily when going up and down the stairs or when doing slightly strenuous exercise. He would feel slightly panicked before the attack, but it was not induced by environmental stimulation such as noises. An attack was accompanied by chest tightness and throat constriction. They were usually aggravated when his health was compromised (such as lower back pain due to sprain, or having diarrhea for few days). Because his symptoms were worsening and more frequent, he was exhausted and weak. He sought treatment at many clinics and eventually came to our TCM department on 07/31/2006.

He had a history of hypertension for more than 10 years. (Although his blood pressure had not been high recently; it usually measured around 126-145/90-95mmHg. He had not been taking blood pressure medication regularly; he had only taken it when his systolic pressure was over 140 mmHg.) He had a history of a gout attack 5-6 years ago in which his blood uric acid level was high. It normalized subsequently and he never had another episode of gout. His height was 168cm, current weight was 77.5 kg (it was previously about 76kg), and BMI was 27.5.

His build was medium and slightly overweight. His facial complexion was withered yellow and pale. His lips, tongue, and nail beds were pale. He had bags under his eyes and dark circles. His tongue was light red and slightly dark with a thin, white coating and a deep vertical center crack. His pulse was deep and choppy.

01/02/2005: EKG (ER): Ventricular Premature Contraction (VPC)

01/03/2005: EKG RESTING sinus bradycardia

01/05/2005-01/10/2005: WRIST ECG RECORDER sinus rhythm with intermittent supraventricular tachycardia (187bpm)

### Diagnosis

Western Medicine: 1. Arrhythmia (VPC) 2. Hypertension

TCM: Severe palpitations (*Zheng Chong*) - *Qi* and *Yin* deficiency failing to nourish the heart.

Treatment Method: Boost *Qi* and nourish *Yin*, calm the mind, and relieve palpitations.

Formula:

Ginseng & Zizyphus Formula ( <i>Tian Wang Bu Xin Dan</i> ) plus Cinnamon & Dragon Bone Combination ( <i>Gui Zhi Jia Long Gu Mu Li Tang</i> )			
Salvia Root ( <i>Dan Shen</i> )	0.6g	Raw Rehmannia ( <i>Sheng Di Huang</i> )	0.4g
Oyster Shell ( <i>Mu Li</i> )	0.5g	Ophiopogon ( <i>Mai Men Dong</i> )	0.4g
Cooked Rehmannia ( <i>Shu Di Huang</i> )	0.5g	Schisandra Fruit ( <i>Wu Wei Zi</i> )	0.4g
Cinnamon Twig ( <i>Gui Zhi</i> )	0.4g	Scrophularia ( <i>Xuan Shen</i> )	0.4g
Dragon Bone ( <i>Long Gu</i> )	0.4g	Polygala ( <i>Yuan Zhi</i> )	0.3g
Acorus ( <i>Shi Chang Pu</i> )	0.4g	Platycodon ( <i>Jie Geng</i> )	0.3g
Fu Shen ( <i>Fu Shen</i> )	0.4g	Coptis Rhizome ( <i>Huang Lian</i> )	0.2g
Platycladus ( <i>Bo Zi Ren</i> )	0.4g		

He came back for follow-up after one week and reported that his symptoms improved after taking the formula for 2-3 days. He did not pant when walking, the palpitations and irregular heartbeats decreased, and he had more energy. He continued with the same formula for one more week and all the symptoms were alleviated.

## [Case 2] Cardiac Failure

Mr. Lee, born in 1969, male, married, and a former Beijing ballet dancer. Patient record number 10236XXX.

The patient went to Banciao Far Eastern Memorial Hospital 2 months ago due to sudden chest tightness, palpitations, and difficulty with breathing while moving. After EKG, chest X-ray, and cardiac ultrasound (Left ventricular ejection fraction 23%) he was diagnosed with primary cardiomyopathy, mitral and tricuspid stenosis, and atrial fibrillation. He declined surgical treatment. He used to take medications such as Digitalis, but he felt that they had limited effect. He came to our hospital seeking TCM and western medicine treatments on 08/14/2003 for difficulty in breathing when he laid down.

His health condition had been pretty good except for occasionally catching a cold. He had no unusual personal or family history. The following were found during a physical examination: Dull complexion, purple lips, red tongue with a white coating, deep thin rapid and irregular pulse; jugular venous slightly distended, heart rate 95/min, irregular heart rhythm 3-4 times/min; rough breathing sounds in both lungs, no dry or moist rales.

08/29/2003 EKG exam: Atrial fibrillation with moderate non-specific ST-T changes.

12/29/2003 Cardiac ultrasound exam: Left ventricular ejection fraction 36%, left ventricular end diastolic diameter: 57 mm, and left ventricular end systolic diameter: 48 mm. Diagnosis: Left ventricular contractive failure with mitral and tricuspid regurgitation.

02/28/2005 Cardiac ultrasound exam: Left ventricular ejection fraction 57.8%, left ventricular end diastolic diameter: 54 mm, left ventricular end systolic diameter: 37 mm. Diagnosis: Adequate ventricular systolic function with normal lateral wall activities. Mild mitral and tricuspid regurgitation, left ventricular enlargement and atrial fibrillation.



Composition of Ginseng, Schizandra, and Ophiopogon Formula (*Sheng Mai San*)

## Diagnosis

Western Medicine: Left ventricular contractive failure with mitral and tricuspid regurgitation, and atrial fibrillation

TCM: Severe palpitations (*Zheng Chong*), panting (deficient panting) - Heart *Qi* and *Ying-Yin* deficiency and inhibited blood flow failing to nourish the heart

He took the herbal formulas along with western medication. The symptoms alleviated after two weeks and he was able to lie down at night. He continued to take the modified herbal formula, cut down on the western medication, and all his symptoms alleviated. His facial complexion became rosy. His lips were not purple. The pulse was deep thin slippery but not irregular. There was no longer distended jugular venous.



Salvia Root (*Dan Shen*)

Treatment Method and Formula:

Formulas	Ginseng, Schizandra, and Ophiopogon Formula ( <i>Sheng Mai San</i> )	2.0g	Boost <i>Qi</i> , warm <i>Yang</i> , nourish the heart, and calm the spirit
	Vitality Combination ( <i>Zhen Wu Tang</i> )	1.5g	
	Baked Licorice Combination ( <i>Zhi Gan Cao Tang</i> )	1.5g	Nourish <i>Yin</i> and protect <i>Yang</i>
Single Herb	Salvia Root ( <i>Dan Shen</i> )	0.5g	Nourish blood, unblock the collaterals, and regulate and harmonize <i>Qi</i> and blood

02/28/2005 Follow-up cardiac ultrasound exam: Left ventricular ejection fraction was 57.8%, showing sufficient ventricular systolic function.

**Diagnosis and Treatment Thoughts**

Arrhythmias are mostly deficient cases. The deficiency can lead to excess, which result in the deficiency-excess complex patterns that we see most of the time clinically. The deficiencies were *Qi*, blood, *Yin* and *Yang* depletion that failed to nourish the heart spirit. I intended to adhere to the treatment principles of boosting *Qi*, nourishing *Yin*, and calming the spirit to relieve palpitations. However, I prescribed Cinnamon & Dragon Bone Combination (*Gui Zhi Jia Long Gu Mu Li Tang*) and Ginseng & Zizyphus Formula (*Tian Wang Bu Xin Dan*) and got remarkable results.

As for cardiac failure, there are two main principles of clinical applications that are followed in order to reinforce healthy *Qi*: boost *Qi* and nourish *Yin*, and warm and supplement heart *Yang*. The representative formula used to boost *Qi* and nourish *Yin* is Ginseng, Schizandra, and Ophiopogon Formula (*Sheng Mai San*). It is used to address the *Qi* and *Yin* deficiency symptoms at the initial stage of cardiac failure. The representative formula to warm and supplement heart *Yang* is Ginseng and Aconite Decoction (*Shen Fu Tang*) or Vitality Combination (*Zhen Wu Tang*). They are used for the heart and kidney yang deficiency symptoms at the late stages of cardiac failure. In order to reinforce healthy *Qi*, Salvia Root (*Dan Shen*), Leonurus (*Yi Mu Cao*), Notoginseng Root (*San Qi*), and

Red Peony (*Chi Shao*) are added if there is blood stagnation. Orange Peel (*Ju Hong*), Pinellia Rhizome (*Ban Xia*), Hoelen (*Fu Ling*), and White Atractylodes (*Bai Zhu*) are added if there is turbid phlegm. Acanthopanax Bark (*Wu Jia Pi*), Alisma (*Ze Xie*), Stephania (*Fen Fang Ji*), and Lepidium (*Ting Li Zi*) are added if there is water-rheum. The patient in this case did not need to undergo a heart transplant but we need to monitor and regulate his overall *Yin*, *Yang*, *Qi*, and blood balance for a long period of time.



**[About the Author]**

Dr. You is currently an associate professor at Chang Gung University and the head of the University’s medical preparatory courses. He is also head physician of TCM Internal Pediatric Medicine in the Chinese Medicine Department at Chang Gung Memorial Hospital, committee member of the Chinese Medicine Examiners in Examination Yuan, committee member of the Chinese Medicine in Department of Health at Executive Yuan “Chinese Medicine Policy Consultant”, and an evaluator with the Chinese Medicine Hospital Evaluation Committee.

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# The Application of TCM Treatment for Peptic Ulcers

by Dr. Jin-Cheng Lin

Retired Chinese Practitioner, Currently Dedicated in the Compiling of TCM Literature



A peptic ulcer indicates benign damage that penetrates deep into the tissues of the digestive tract wall due the erosion of the mucosa of the esophagus, stomach, and duodenum by gastric

acid. It is typically a deep erosion occurring at the area of the lesser curvature and duodenal bulb close to pylorus. Therefore, peptic ulcers include both gastric and duodenal ulcers. The depth, size, and period vary from person to person.

It is well known that drugs such as NSAIDs are risk factors that cause peptic ulcers, especially gastric ulcers. High doses of the drugs, along with alcohol consumption, increase the potential for stomach bleeding. Other important causative factors of peptic ulcers are an improper diet, fatigue, and long-term emotional stress. Helicobacter pylori infection may also lead to peptic ulcers.

The main reasons that western medications fail to treat peptic ulcers are that patients do not take the medication on time, or that the H. pylori become drug resistant. In this case patients need to undergo another treatment session. Anti-H. pylori drugs sometimes have side effects such as dizziness, diarrhea, thickening of the tongue coating, hindered sense of taste, and allergies. Some patients seek help from Chinese Medicine when they are unable to endure those side effects.

## COMPARISON OF MODERN MEDICINE TREATMENTS AND CHINESE MEDICINE TREATMENTS

In terms of Chinese Medicine's theory of physiology, the stomach receives food and drink and holds it until they are completely digested. The spleen governs digestion, transforms nutrients, and transports these nutrients to supply the whole body. If the stomach's functions of descending and emptying are weakened, and spleen's abilities of digestion and transporting nutrients are decreased, the result is liver stagnation, an unhappy state of mind, spleen deficiency, and poor digestion.

After years where the whole body has a physiological *Yin-Yang* dysfunction, the mucosa that protects the stomach suffers severe damage and easily erupts into serious symptoms such as stomach bleeding, hematemesis, black stool, gastric perforation, and pyloric obstruction.

Peptic ulcers belong to the Chinese Medicine categories of "gastric cavity pain, acid swallowing, and epigastric upset."



Composition of Pinellia Combination (*Ban Xia Xie Xin Tang*), formula used for intense stomach heat

No matter if we are treating peptic ulcers with herbal granules or modern medicine, we should differentiate their current stage: active, healing or remission stage. We should clear heat, remove dampness, harmonize the stomach, and relieve pain during active stage. The formula in this stage is Pinellia Combination (*Ban Xia Xie Xin Tang*) plus Notoginseng Root (*San Qi*), Bletilla (*Bai Ji*), and Dandelion (*Pu Gong Ying*). We should emphasize strengthening the spleen and harmonizing the stomach during the remission stage in order to prescribe the formulas according to the patterns.

When experiencing acute peptic ulcer pain, eating some soda crackers or taking *Wu Bei San* with Fritillaria (*Zhe Bei Mu*) and Cuttlefish Bone (*Hai Piao Xiao*), an anti-acid, antispasmodic and gastric acid inhibiting Chinese medicinal formula, can help alleviate the pain. Placing a hot pack on Ren 12 (10 cm above navel) and massaging PC6 on both hands and ST36 3 cun below the knees can usually get immediate results.

In short, the feature of using granulated Chinese herbs is the ability to prescribe according to the patients' individual patterns. We should refer to the four examinations, the clinical manifestations of each pattern, and the patients' needs when prescribing herbs or acupuncture points. Diet, exercise, health preservation, relaxation, and physical and mental balance are things we should also pay attention to in our daily lives.

## List of Clinical Applications of Peptic Ulcers

Pattern Types	Symptoms	Formula Suggestion	Acupuncture Points
1. Liver and Stomach <i>Qi</i> Stagnation	Nervous personality, fickle emotions, and (especially) easy to get angry. Epigastric distention and pain, the pain may even radiate to both sides of the chest. Frequent belching and pain due to worries and depression. Occasionally unsmooth bowel movements. Light red sides of the tongue with a thin white coating. Wiry pulse.	Bupleurum & Cyperus Combination ( <i>Chai Hu Shu Gan Tang</i> )	PC6, ST 36, Ren 12, LV 3, GB 40, SP4
2. Intense Stomach Heat	The pathology is damp heat blocking digestion and causing stagnant heat in the liver and stomach. They love to eat spicy, roasted, barbecued, and fried foods or drink alcohol and smoke often, which easily leads to damp heat obstruction in the middle <i>Jiao</i> . Clinical symptoms are epigastric pain with a burning sensation, epigastric upset, thirst without a desire to drink, dry and bitter mouth, yellow urination, and unsmooth bowel movements. The tongue is red with a yellow greasy coating. The pulse is rapid.	Pinellia Combination ( <i>Ban Xia Xie Xin Tang</i> )	PC6, ST36, Ren 12, ST44, ST25, LV3, ST40
	This pattern is formed because of oppressed emotions for a long time causing liver <i>Qi</i> stagnation to transform into heat. Clinical manifestations are urgent epigastric burning pain, sour regurgitation, belching, irritability, dry bitter mouth with a desire to drink, and dry stool. The tongue is red with a yellow dry coating. The pulse is wiry and rapid.	Modified Coptis & Rehmannia Formula ( <i>Qing Wei San Jia Wei</i> )	
3. Stasis Obstruction in the Stomach Collateral	Chronic illness enters the collaterals, <i>Qi</i> stagnation or <i>Qi</i> deficiency, blood stasis, and even bleeding due to stasis. More intense stomach pain; the pain is like pinprick or knife cutting, localized, and refuses pressure. Hematemesis might be seen and the stools are black. The tongue is purplish and dark with stasis spots. The pulse is choppy and rapid.	Pteropus & Bulrush Formula ( <i>Shi Xiao San</i> ) plus Salvia Root ( <i>Dan Shen</i> ), Notoginseng Root ( <i>San Qi</i> ), and Corydalis ( <i>Yan Hu Suo</i> ) to dissolve stasis and relieve pain. Or use Bletilla ( <i>Bai Ji</i> ) and Agrimony ( <i>Xian He Cao</i> ) to warm the center and stop bleeding	PC6, ST36, Ren 12, SP 10, UB21, UB17
4. Stomach <i>Yin</i> Depletion	It is due to long-term stomach heat and constrained fire that consumes stomach <i>Yin</i> . The clinical manifestations are dull stomach pain, burning discomfort, belching as if hungry, decreased appetite, dry mouth and throat with thirst, and dry stool. The tongue is red with a scanty coating. The pulse is rapid.	Glehnia & Rehmannia Combination ( <i>Yi Guan Jian</i> ) plus Peony & Licorice Combination ( <i>Shao Yao Gan Cao Tang</i> )	PC6, ST36, Ren 12, SP6, KD3, UB21, UB20
5. Deficiency-cold of the Spleen and Stomach	These patients usually favor cold and raw foods, which have obstructed the normal digestion and absorption functions of the spleen and stomach. The condition may also be caused by a weak constitution, over exertion, or spleen and stomach function damage due to long-term illness. Cold generates from inside the body, thus the stomach pain is continuous and more intense when the stomach is empty. They may vomit water and the pain is alleviated when eating warm foods. They have fatigue, suffer burnout, and their limbs lack strength, they have decreased appetite, cold extremities, and a tendency to have diarrhea. The tongue is pale with a slippery coating. The pulse is slow and weak.	Astragalus Combination ( <i>Huang Qi Jian Zhong Tang</i> ) plus Vladimiria & Cardamom Combination ( <i>Xiang Sha Liu Jun Zi Tang</i> ) and Ginseng & Ginger Combination ( <i>Li Zhong Tang</i> ). If there is stomach bleeding, add Bletilla ( <i>Bai Ji</i> ) Powder and Notoginseng Root ( <i>San Qi</i> ) to the above formulas.	PC6, ST36, Ren 12, UB 21, UB 20, Ren 6, Ren 4

# Case Study of Acid Regurgitation

by Dr. Li-Chuan Hsu & Dr. Zi-Huei Lin

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## CASE REPORT

### [Patient Information]

Name: Mrs. Su	Patient Record Number: 90XXX
Gender: Female	Marriage Status: Married
Occupation: Housewife	Initial Visit Date: 10/02/2008
Date of Birth: 09/14/1938 (70 years old)	Place of Residence: Beigang Township, Yunlin County
Dates of Visits: 10/02/2008, 10/13/2008, 10/27/2008	

### [Chief Complaint]

Acid regurgitation with a burning sensation for one month. She vomited on 10/01/2008 (one day before her initial visit.)

### [History of Present Illness]

The patient is a 70-year old female. She had been having a poor appetite for one month and an urgency to vomit when she smelled food. She suffered immediate vomiting of ingested foods along with the symptoms of acid reflux. She vomited again on 10/01/2008, therefore she came to our Chinese Medicine department for treatment on 10/02/2008.



### [Past History]

Hypertension (under good control with medication), diabetes (under control with medication), cardiac disease (She had cardiac catheterization and stent implantation surgery at Chia-Yi Christian Hospital on 10/08/1997. She is taking medication), asthma (She is taking medication), and both knees had replacement surgery.

### [Personal History]

Living Environment: Beigang Township	Smoking: None
Alcohol: None	Allergies to Medication: None
Lifestyle: Regular	Working Environment: At home
Personality: Easy to get nervous	Family History: Mother: Hypertension and stroke

### [Examinations (Four Diagnostic Methods of Chinese Medicine)]

#### Inspection Examination

Build: Slightly thin  
Complexion: Dark black  
Nails: Slightly red  
Skin: Lots of stasis spots underneath the skin  
Hair: Thin  
Eyes: Blood vessels can be seen in the white of the eyes; slightly turbid  
Mouth and Lips: Pale lips with stasis color  
Tongue: More pale with a white coating

#### Listening and Smelling Examination

Smell: No special smell when breathing or on the body  
Voice: She panted when talking; her voice was hoarse, low and weak

#### Inquiry Examination

Cold and Hot: Cold extremities  
Sweat: Frequent spontaneous sweating  
Head and Face: Frequent headache  
Urination and BM: She had hard stools usually and had no strength to expel them. She needed to take stool softener to help BM. She had one BM/day when taking stool softener. 2-3 times nighttime urination, yellow color.  
Digestion: Immediate vomiting of ingested foods, poor appetite  
Drinking: She favored hot drinks  
Nose: Normal  
Throat: No discomfort  
Ear: No abnormal hearing  
Mouth and Teeth: No discomfort  
Chest: Occasional chest dull pain when her cardiac disease attacked  
Abdomen: No discomfort  
Trunk: Easy to have sore achy low back  
Limbs: Had surgical removal of bumps at left wrist so she's having unsmooth grabbing. Both knees had replacement surgeries at Chang Gung Hospital  
Emotions: Easy to feel nervous  
Sleep: Hard to fall asleep but slept fine after falling asleep  
Energy: Acceptable

#### Palpation Examination

Pulse: (Left) Cun: faint; Guan: faint, choppy when pressed deep; Chi: faint  
(Right) Cun: faint; Guan: Slightly tight with *Qi* counterflow feeling; Chi: faint  
Palpation: Cold extremities

**[Western Medicine Physical Examination]**

General: Height: 150cm      Weight: 47Kg

Vital Signs:

Temperature: 36.3°C

Heart Rate: 98/min (10/02/2008), 106/min (10/13/2008), 98/min (10/27/2008)

Blood Pressure: 131/68 mmHg (10/02/2008), 137/69 mmHg (10/13/2008), 132/71 mmHg (10/27/2008)

Breath Rate: 21 ~ 24/min

HEENT:

Head: Normal exterior

Eyes: Blood vessels seen in sclera; slightly turbid

Conjunctiva: Slightly turbid exterior

Eyelids: Normal

Eyesight: Normal, had cataract surgery

Ears: Normal exterior, no abnormal secretions

Nose: Normal exterior, no abnormal secretions

Throat: Normal exterior

Neck and Shoulder: Hard to lift right arm

Chest: Normal exterior

Abdomen: Normal

Lower Back: She mentioned she had bone spurs so her back is frequently sore and achy. She did not suffer scoliosis.

Limbs: Both knees have had replacement surgeries. She had surgery on her left wrist. It was hard for her to lift her right arm

**[Overall Review]**

Patient was a 70 year old female with the complaint acid regurgitation for the last month. She had a poor appetite, nauseous when she smelled food, and immediate vomiting of ingested foods. She typically had hard stools and had no strength to push them out. She needed to take stool softener to facilitate bowel movements. Her four diagnostic examinations: dark complexion with stasis spots underneath the skin; lips were pale with slight stasis; pale tongue with a white coating; diminished weak, hoarse voice; she favored hot drinks, had acid reflux with a burning sensation; vomited food immediately after ingesting them, and had a poor appetite; cold extremities, urinates 2-3 times during the night; overall her pulses were faint while the left *Guan* was choppy when pressed deep and the right *Guan* was slightly tight.

**[Diagnosis]**

Western Medicine: GERD (gastroesophageal reflux disease)

Chinese Medicine: Acid regurgitation. Pattern: Deficient cold, insufficient *Yang*.

Treatment Principle: Warm the center and dissipate cold, as the main focus. Assist to warm the *Yang*. Direct *Qi* downward and arrest vomiting.

Formula: Cardamon & Fennel Formula (*An Zhong San*) 6g, Aconite, Ginger & Licorice Combination (*Si Ni Tang*) 3g and

Pinellia Rhizome

Prepared with Ginger (*Jiang Ban Xia*) 1.5g.

This was a day's dosage, which was to be taken three times each day after meals. Seven days of the formula were prescribed.



Corydalis (*Yan Hu Suo*) – The emperor herb of Cardamon & Fennel Formula (*An Zhong San*)

**[Follow-Ups]**

2<sup>nd</sup> Visit: 10/13/2008

The acid reflux and burning sensation were about 50% improved. She had stopped vomiting but still had a poor appetite. Her stools were still too hard to expel. Stool softeners were still needed.

Formula: Cardamon & Fennel Formula (*An Zhong San*) 6g, Aconite, Ginger & Licorice Combination (*Si Ni Tang*) 3g, Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*) 1.5g and Rhubarb (*Da Huang*) 0.3g. Rhubarb (*Da Huang*) was added to promote bowel movements. Three times each day after meals. Fourteen days of the formula were prescribed.

3<sup>rd</sup> Visit: 10/27/2008

The acid reflux and burning sensation were about 80% improved. She had stopped vomiting and her appetite increased. Her stools were still too hard to expel. Stool softeners were still needed.

Formula: Cardamon & Fennel Formula (*An Zhong San*) 6g, Aconite, Ginger & Licorice Combination (*Si Ni Tang*) 3g, Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*) 1.5g, Rhubarb (*Da Huang*) 0.3g. Continue to take three times a day, after meals. Fourteen days of the formula were prescribed.



Aconite (*Fu Zi*) – The emperor herb of Aconite, Ginger & Licorice Combination (*Si Ni Tang*)

**DISCUSSION****[Pulse]**

This patient's overall pulse was faint, and her right *Guan* pulse was faint and tight. *Bin-Hu's Teachings on Pulse Diagnosis (Bin Hu Mai Xue)* mentions, "When *Qi* and blood are weak, the pulse would also be weak." The *Treatise on Cold Damage (Shang Han Lun)* also mentions, "When there is *Qi* debilitation, the pulse would be faint." And "If the radial (*cun kou*) pulse is weak, it is called *Yang* insufficient." So we know that this patient had a *Yang* insufficiency pattern. Her pulse also had a tight shape. As *Treatise on Cold Damage (Shang Han Lun)* mentions, "The *fu yang* (anterior tibial) pulse is faint and tight, tight indicates cold, and faint indicates deficiency. When there is contention between faint and tight, it causes shortness of breath." This patient panted when she talked, so we know her pulse matched the pattern. As for the choppy left *Guan* pulse, *Treatise on Cold Damage (Shang Han Lun)* mentions, "When the pa-



tient's pulse is faint and choppy, it is caused by the doctor's treatment." This patient had taken many kinds of medication and the side effects seemed to accumulate and could not be clean out from the body through circulation and metabolism, thus choppy pulse was observed.

### [Pattern Analysis]

This patient's chief complaint was acid regurgitation with a burning sensation. She had immediate vomiting of ingested foods and a poor appetite; her lips were pale and her tongue was pale with a white coating; her facial complexion was dark black with stasis spots underneath the skin. According to Chinese Medicine, her pattern was the deficient cold type. Her favoring hot drinks indicated cold in the middle *jiao*. Her low, weak, and hoarse voice indicated *Qi* insufficiency. Her overall pulse being faint indicated her *Qi* was weak and *Yang* was insufficient. According to Chinese Medicine internal medicine differentiation and treatment theory, "The symptoms of acid regurgitation due to cold pattern are on and off vomiting, chest and stomach distension and oppression, belching with a stinky rotten smell, prefer to spit out phlegm, prefer hot drinks, cold extremities, fatigue and a lack of strength, loose thin stools, light red tongue with a thin white coating, and a deep slow pulse." The *Treatise on Cold Damage (Shang Han Lun)* mentions, "When in Lesser *Yin* disease there is immediate vomiting of ingested food and drink, seething in the heart with a desire to vomit, yet an inability to vomit. But at the beginning the extremities are cold, and the pulse is string-like and slow (*yin* pulse), this indicates repletion in the chest (upper *jiao*). One cannot precipitate, but should use vomiting. If there is cold-rheum above the diaphragm and dry retching, one cannot use vomiting, but should use warming. *Si Ni Tang* is appropriate." and "When the pulses are deep, choppy, slow, wiry and faint, they are called *yin* pulses." *Zheng Qin-An* said, "Immediate vomiting of ingested food can be differentiated into cold counterflow and hot counterflow." In this case the patient's extremities were cold and pulse was wiry and slow, which were the signs of cold rheum counterflow rather than hot counterflow. Since it belonged to cold counterflow, Pinellia Rhizome (*Ban Xia*) could be added. The treatment principle should be warm the center to direct counterflow downward, thus vomiting and purgative methods could not be used. Using *Si Ni* type formulas was correct all the way through. This patient had immediate vomiting of ingested foods, seething in the heart with desire to vomit, and the pulse was a *yin* pulse; therefore, it was a cold counterflow pattern.

Also, according to *Essentials from the Golden Cabinet (Jin Gui Yao Lue)* • Chapter 17 *The Pulses, Conformations, and Treatment of Vomiting, Retching, and Diarrhea*, "*Si Ni Tang* relieves vomiting with a weak pulse, frequent urination, and slight generalized fever in a person with chills. The condition is difficult to cure." *Quintessence of Essentials from the Golden Cabinet (Jin Gui Yao Lue Jing Yi)* explained, "Vomiting with a weak pulse indicates the *Qi* has been deficient; frequent urination indicates kidney deficiency failing to contain; the inner exuberant *Yin* cold causes cold extremities; the *Yang* is expelled to the exterior, thus there is a slight, generalized fe-

ver." This patient urinated during the night 2-3 times, so it was kidney *Qi* deficiency failing to contain which caused the frequent nighttime urination.

To sum up, this is an acid regurgitation case in a deficiency cold pattern.

### [Formula]

Cardamon & Fennel Formula (*An Zhong San*):

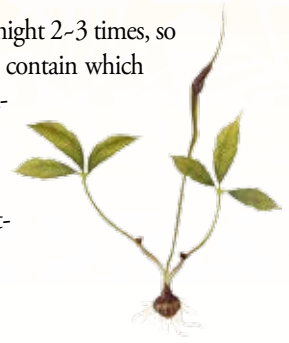
Cinnamon Twigs (*Gui Zhi*) warms the channels and unblock *Yang*; Fennel (*Xiao Hui Xiang*) warms and opens the stomach, rectifies *Qi* and harmonizes the center; Galanga (*Gao Liang Jiang*) warms and dissipates the cold pathogens in spleen and stomach; Corydalis (*Yan Hu Suo*) invigorates blood and moves *Qi*; Oyster Shell (*Mu Li*) controls acid; Cardamom (*Suo Sha Ren*) awakens the spleen, warms the center and moves *Qi*.

Aconite, Ginger & Licorice Combination (*Si Ni Tang*):

*Zheng Qin-An* said, "*Si Ni Tang* is the main formula to restore *Yang*. This formula was listed as cold entering Lesser *Yin*. The symptoms are blue dark color nails, abdominal pain and diarrhea, great dripping sweat, a heavy body with aversion to cold, faint and feeble pulse, and counterflow cold of the four limbs. All of these were caused by the accumulation of *Yin Qi*. If one does not use a *Si Ni* formula to restore *Yang*, the last ray of sunlight will be extinguished. Here *Zhang Zong-jing* used restoring *Yang* to dispel *Yin*, which was not easy. Since this formula could restore *Yang*, it could be taken people with diseases caused by deficiency of *Yang* with exuberance of *Yin*. *Zhang Zong-jing* did not point out individually, but it is fine for all *Yang* deficient people to be treated with this method. Ancient people said, "There is nothing warmer than *Fu Zi*", so we know that Aconite (*Fu Zi*) is a ball of raging fire. People's bodies are all dependent on the ball of true fire. If the true fire dies out, people will have true *Yin* diseases. When used as the chief herb, Aconite (*Fu Zi*) can supplement the congenital exhausted fire. Dried Ginger (*Gan Jiang*) is used as assistant for its acrid-warm and dissipating properties to be the precursor that leads directly to the root. Additionally, use Licorice (*Gan Cao*)'s sweet to moderate the healthy *Qi*. Here to moderate means to lodge. Thus the true fire is lodged and hidden to secure the root of life, and things can be regenerated."

Pinellia Rhizome (*Ban Xia*):

Acrid and neutral. It is a specialized herb that stops vomiting, and also treats chest distension, cough and dyspnea, and directs *Qi* downward. *Commentary on the Classic of Materia Medica (Ben Jing Shu Zheng)* mentions, "When there is *Qi* counterflow, the *Yang* ascends and is unable to descend. Pinellia Rhizome (*Ban Xia*) is grown after the three *Yang* solar terms and is harvested in the mid summer when *Yin* just starts to grow, thus it favors *Yin Qi* and reaches initial *Yang*. It reaches the initial *Yang*, so it does not moisten - even it is



Pinellia Rhizome (*Ban Xia*)

*Yin*; it favors *Yin Qi*, so it still enters *Yin* even though it is drying. With this character of alternating *Yin* and *Yang*, it has lubricating and drying abilities, and of course it can enter *Yin* from *Yang* and treat the pathogens that occupy the *Yang* sites. Thus, Pinellia Rhizome (*Ban Xia*) is not only descending, it makes *Yang* enter *Yin*, when *Yin* is harmonized there will be no rheum retention.”

General speaking, vomiting is caused by *Qi* counterflow, and *Qi* counterflow is caused by mutual agitation of water and *Qi*. It is the indication of Pinellia Rhizome (*Ban Xia*). The *Yellow Emperor’s Inner Classic: Basic Questions (Huang Di Nei Jing Su Wen)* mentions, “The Lesser *Yin* symptoms such as vomiting, coughing, abnormal rising of *Qi*, and panting, are caused by *Yin Qi* being underneath with *Yang Qi* above, and the floating *Yang Qi* doesn’t have anything to comply with.” When the *Yang Qi* is floating and not descending, symptoms like vomiting and retching will attack.



Rhubarb (*Da Huang*)

This patient’s right *guan* pulse had a feeling of *Qi* counterflow, and she was having acid regurgitation symptoms. Pinellia Rhizome (*Ban Xia*) was added to help descend *Qi*.

Rhubarb (*Da Huang*):

Bitter and cold. It purges static blood, blood blockage, cold, and heat; it breaks concretions and conglomerations, accumulations and gatherings, and rheum and food retention to clear up the stomach and intestines; it eliminates stagnation, purges, promotes digestion, regulates the center, and transforms food to harmonize the five *zang* organs. Rhubarb (*Da Huang*) is called the “general” for it can exercise the orders and innovate; it can expel fire that has attached to blood, fluids, urine, tears and spittle; it can also unblock the blood and penetrate fire into earth to free and regulate all the pathways

and collaterals, and purge all the retention in the stomach and intestines. *Materia Medica (Ben Jing)* mentions its functions: “It clears up the stomach and intestines, eliminates stagnation, purges, promotes digestion, regulates the center, and transforms food to harmonize the five *zang* organs.”

This patient’s left *guan* pulse was faint and choppy (had tendency), according to *Treatise on Cold Damage (Shang Han Lun)*, “When the radial (*cun kou*) pulse is faint and choppy, faint pulse means *Wei Qi* is not moving, and choppy pulse means *Ying Qi* is incompetent.” Also the patient was having a hard time with bowel movements and had to take stool softeners, so I made a bold judgment that there was slight heat accumulation in the blood level. Rhubarb (*Da Huang*) was added to promote the bowel movements.

### HEALTH EDUCATION

Proper rest; diet should be light - hard, sticky, and greasy foods, sour spicy foods, fine wines, and stimulating and fried foods should all be avoided. If the appetite decreases due to frequent acid regurgitation, one should eat less but more often; rice, soups and porridges are suitable for nourishing stomach *Qi*.

Patients with spleen and stomach deficient cold can add ginger to their rice porridge when cooking to diffuse and promote spleen *Yang*, and to harmonize stomach *Qi*.



## Commonly Used Formulas for Symptoms Related to Digestive Systems

Symptoms	Code	Formulas	Pin-Yin Name
Gastric ulcer	0601	Cardamon & Fennel Formula	<i>An Zhong San</i>
Spleen deficiency, diarrhea, and chronic gastroenteritis	1122	Ginseng & Atractylodes Formula	<i>Shen Ling Bai Zhu San</i>
Spleen-stomach <i>Yang</i> deficiency	0813	Aconite, Ginseng & Ginger Combination	<i>Fu Zi Li Zhong Tang</i>
Heat in the chest and chill in the stomach	1202	Coptis Combination	<i>Huang Lian Tang</i>
Disharmony of stomach <i>Qi</i> .	0516	Pinellia Combination	<i>Ban Xia Xie Xin Tang</i>
<i>Qi</i> deficiency with profuse phlegm	0407	Six Major Herb Combination	<i>Liu Jun Zi Tang</i>
Tonify <i>Qi</i> and fortify the spleen	0508	Four Major Herb Combination	<i>Si Jun Zi Tang</i>

# Herbal Medicinal Safety and Professional Procurement

Sun Ten Herb Sourcing Team

Chinese herbal medicinals are mainly produced in Mainland China. More than 90% of the herbal medicinals used in Taiwan are from Mainland China. Governments of various countries have started to set up management organizations and establish management criteria, among which safety, quality and effectiveness are the common evaluation standards.



Sun Ten GAP Cultivation Site of White Peony (*Bai Shao*)

The curative effects of Chinese herbal medicinals are affirmed by over two thousand years of traditional medical practice. Through modern scientific research on medicinal efficacies and clinical trials, we can reassure their curative effects and dosages. Currently, the quality of the Chinese herbal

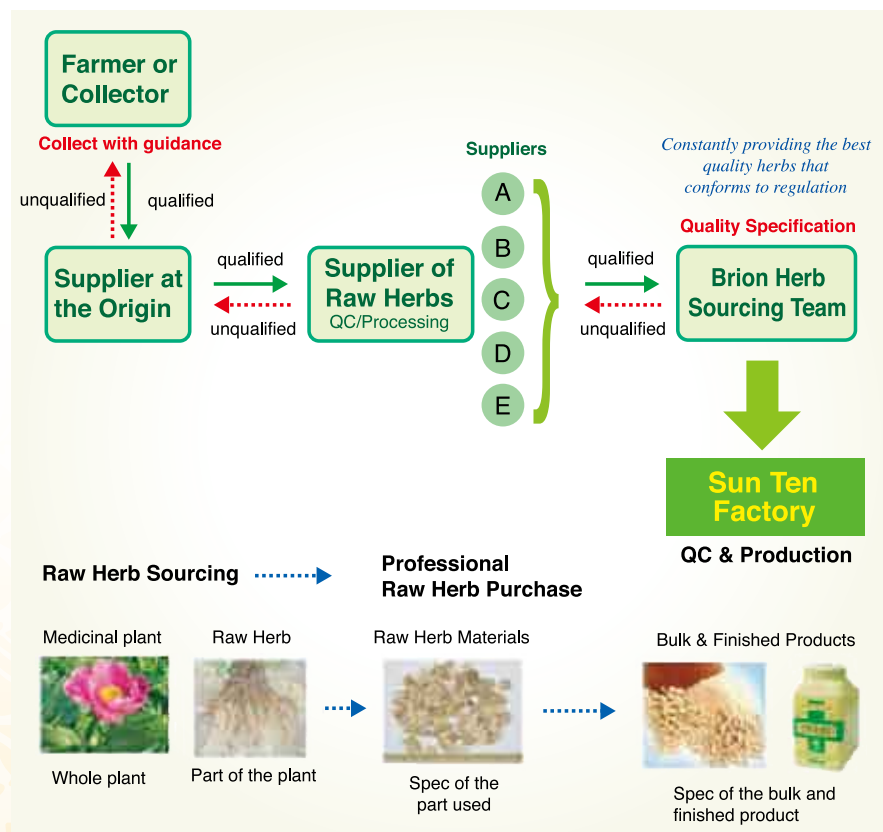
medicinals used by various countries are mainly evaluated in terms of dryness, foreign bodies, impurities, extraction ratios, contents of marker constituents, and fingerprints. Traditional Chinese herbal medicinals are well recognized from their long-term curative effects and safety in clinical practice. However, due to environmental changes (natural and artificial) and commercialization, the safety of Chinese herbal

medicinals need to re-examined. Through modern scientific testing and verification, they can continue to provide healing benefits to the public. A summary of recent safety issues regarding Chinese herbal medicinals include: the use of correct medicinal species, trace amounts of toxins contaminating medicinals, toxic metals, pesticide residues, improper processing (such as sulfur fumigation), improper additives (such as chemicals used to increase medicinal weight), microbial contaminations, aflatoxin, and improper usage.

The procurement of traditional medicinals is done through dealers. Most of the dealers differentiate the quality of the medicinals by traditional identification techniques, such as their appearances, colors, smells, and tastes. However, this method cannot properly address the above-mentioned safety issues anymore. The main objective of the pharmaceutical GMP is traceability. Once Sun Ten Pharmaceutical developed foreign investment in Mainland China, we started close long-term cooperation with medicinal suppliers. This was done to obtain the medicinals from their places of origin and manage and control their processing procedures such as cleaning, processing, cutting, packaging, storage, and transportation in order to ensure medicinal quality and safety. Over the decades, we have accumulated abundant experience and provided good support to encourage the stability of medicinal quality.

Sun Ten Pharmaceutical has marketed products all over the world - on five continents and more than twenty countries. Due to the increasing requirements of medicinal quality and safety by various countries, and the requirements of submitting scientific examination and related documents, Sun Ten Pharmaceutical established "Herb Sourcing Team" in 2008. They are independent from the management group and operate directly under the General Manager in order to foster professionalism and independence, as well as, to have the full support from both the R&D and factory QC departments and obtain the best quality medicinals that are stable, controllable, and meet regulatory compliance.

## Transparency of Quality Control from the Origin to the Finished Products



professionalism and independence, as well as, to have the full support from both the R&D and factory QC departments and obtain the best quality medicinals that are stable, controllable, and meet regulatory compliance.

The goal of establishing the Herb Sourcing Team is "professional medicinal procurement." Therefore, the first requirement is for the team to have considerable capabilities and experiences. Current members of the team include Master and Ph.D. graduates with specialties in botany, chemistry, Chinese medicine, and

other professional fields. They have engaged in medicinal identification, origin inspection, component analysis, quality research, and procurement practices for more than five years (up to 30 years). The medicinal identification techniques they utilize, in addition to the traditional differentiation (color, smell, flavor), also include the appearance of morphological traits, tissue microscopic identifications, fingerprints, and medicinal origin investigation. They have outsourced cooperation available for DNA molecular identification when necessary.

An important condition of “professional medicinal procurement” is high-quality suppliers. Sun Ten Pharmaceutical has effectively established long-term good relations with several major

medicinal suppliers in northeast, north, central, and southern China to have direct access to quality medicinals from their authentic medicinal origins. The medicinal suppliers we cooperate with all have more than 20 years of procurement, processing, and marketing experience. They are familiar with the export specifications and requirements for Taiwan, Hong Kong, Japan, and Europe. They have close relationships with the medicinal origins and are familiar with the resources. They can assure us that their factories are GMP compliance and have passed China’s GMP for prepared medicinal certification. Both parties have joined force to promote medicinal safety and quality through close cooperation and resource sharing over the recent years.

## Dr. Pu-Tao Chang on Health Preservation - Pinellia Rhizome (*Ban Xia*)

by Dr. Pu-Tao Chang

Rong Xing Traditional Chinese Medicine Clinic

Indications: Treat the gastrointestinal and respiratory systems.

Caution: Dry mouth; avoid prescribing it to those with a dry mouth.

Why is this herb called “*Ban Xia*”? In one year there are 24 solar terms. In the first half of the year there are 12: Start of Spring, Rain Water, Awakening of Insects, Vernal Equinox, Clear and Bright, Grain Rain, Start of Summer, Grain Full, Grain in Ear, Summer Solstice, Minor Heat, and Major Heat; and another 12 in the second half of the year: Start of Autumn, Limit of Heat, White Dew, Autumnal Equinox, Cold Dew, Frost Descent, Start of Winter, Minor Snow, Major Snow, Winter Solstice, Minor Cold, and Major Cold. There are four solar terms between Start of Summer and Summer Solstice, which is approximately two months. Within these two months, it is the best time to harvest this medicinal. Pinellia Rhizome (*Ban Xia*), harvested during this period contains the highest amount of effective medicinal constituents. Its most abundant components are alkaloids, which make it effective to dissolve phlegm.

Of the formulas that contain Pinellia Rhizome (*Ban Xia*), the most famous one is Citrus & Pinellia Combination (*Er Chen Tang*). It is composed of Pinellia Rhizome (*Ban Xia*), Citrus Peel (*Chen Pi*), Hoelen (*Fu Ling*), and Licorice (*Gan Cao*). “*Er Chen*” refers to Citrus Peel (*Chen Pi*) and Pinellia Rhizome (*Ban Xia*) because these two herbs are stored for a long period of time before their use. The composition of the alkaloids and essential oils evaporation considerably over time during storage, which reduces their irritating side effects. Citrus & Pinellia Combination (*Er Chen Tang*) is especially



Pinellia Rhizome (*Ban Xia*) Plant

good to dissolve wet phlegm. In a presence of dry phlegm, lung-moistening herbs such as Fritillaria (*Zhe Bei Mu*), Aster (*Zi Wan*), Glehnia Root (*Bei Sha Shen*), Benincasa (*Dong Gua Zi*), and Mulberry (*Sang Bai Pi*) can be added. How is wet phlegm differentiated from dry phlegm? Using a stethoscope one can hear a “rattling” sound from the wet phlegm patient’s pulmonary lobe area on the chest. Dry phlegm can be observed from continual dry coughing in which the phlegm can never be expectorated.

Citrus & Pinellia Combination (*Er Chen Tang*) with Ginseng (*Ren Shen*) and White Atractylodes (*Bai Zhu*) added is called Six Major Herb Combination (*Liu Jun Zi Tang*). Vomiting during pregnancy is certainly a result of the vomiting center of the medulla oblongata of the brain being stimulated. Pinellia Rhizome (*Ban Xia*) is a very good choice as it contains alkaloids that can inhibit the vomiting center of the medulla oblongata to stop the vomiting reaction.

There is another famous formula created by Doctor Zhang Zhong-Jing over 1800 years ago, composed of seven herbs including Pinellia Rhizome (*Ban Xia*), called Minor Bupleurum Combination (*Xiao Chai Hu Tang*). Pinellia Rhizome (*Ban Xia*) is used within the formula to direct counter-flow downward and stop vomiting. Many people who have a cold and cough will start cough-



Pinellia Rhizome (*Ban Xia*)

## Products Containing Pinellia Rhizome (*Ban Xia*)

Code	Chinese Name	Pin-Yin Name	English Name
0201	二朮湯	<i>Er Zhu Tang</i>	Atractylodes & Arisaema Combination
0202	二陳湯	<i>Er Chen Tang</i>	Citrus & Pinellia Combination
0305	小青龍湯	<i>Xiao Qing Long Tang</i>	Minor Blue Dragon Combination
0307	小柴胡湯	<i>Xiao Chai Hu Tang</i>	Minor Bupleurum Combination
0312	大柴胡湯	<i>Da Chai Hu Tang</i>	Major Bupleurum Combination
0318	小柴胡湯去參	<i>Xiao Chai Hu Tang Qu Ren Shen</i>	Minor Bupleurum Combination Minus Ginseng
0319	大柴胡湯去大黃	<i>Da Chai Hu Tang Qu Da Huang</i>	Major Bupleurum Combination Minus Rhubarb
0405	五積散	<i>Wu Ji San</i>	Dang Gui & Magnolia Formula
0407	六君子湯	<i>Liu Jun Zi Tang</i>	Six Major Herb Combination
0504	平肝流氣飲	<i>Ping Gan Liu Qi Yin</i>	Dang Gui & Pinellia Combination
0514	半瀉六君子湯	<i>Ban Xie Liu Jun Zi Tang</i>	Pinellia & Ginseng Six Combination
0516	半夏瀉心湯	<i>Ban Xia Xie Xin Tang</i>	Pinellia Combination
0517	半夏白朮天麻湯	<i>Ban Xia Bai Zhu Tian Ma Tang</i>	Pinellia & Gastrodia Combination
0518	加味八仙湯	<i>Jia Wei Ba Xian Tang</i>	Saposhnikovia & Qiang Huo Combination
0603	竹葉石膏湯	<i>Zhu Ye Shi Gao Tang</i>	Bamboo Leaves & Gypsum Combination
0802	定喘湯	<i>Ding Chuan Tang</i>	Ma Huang & Ginkgo Combination
0803	金沸草散	<i>Jin Fei Cao San</i>	Schizonepeta & Pinellia Formula
0810	治濁固本丸	<i>Zhi Zhuo Gu Ben Wan</i>	Hoelen & Polyporus Formula
0903	柴胡加龍骨牡蠣湯	<i>Chai Hu Jia Long Gu Mu Li Tang</i>	Bupleurum & Mu Li Combination
0905	柴胡桂枝湯	<i>Chai Hu Gui Zhi Tang</i>	Bupleurum & Cinnamon Combination
0907	柴陷湯	<i>Chai Xian Tang</i>	Bupleurum & Scute Combination
0915	香砂六君子湯	<i>Xiang Sha Liu Jun Zi Tang</i>	Vladimiriae & Cardamom Combination
0917	苓甘薑味辛夏仁湯	<i>Ling Gan Jiang Wei Xin Xia Ren Tang</i>	Hoelen & Schisandra Combination
0919	保和丸	<i>Bao He Wan</i>	Citrus & Crataegus Formula
0920	柴苓湯	<i>Chai Ling Tang</i>	Bupleurum & Hoelen Combination
1104	麥門冬湯	<i>Mai Men Dong Tang</i>	Ophiopogon Combination
1121	參蘇飲	<i>Shen Su Yin</i>	Ginseng & Perilla Combination
1123	旋覆代赭石湯	<i>Xuan Fu Dai Zhe Shi Tang</i>	Inula & Hematite Combination
1202	黃連湯	<i>Huang Lian Tang</i>	Coptis Combination
1209	鈎藤散	<i>Gou Teng San</i>	Gambir Formula
1301	溫膽湯	<i>Wen Dan Tang</i>	Hoelen & Bamboo Combination
1302	溫經湯	<i>Wen Jing Tang</i>	Dang Gui & Evodia Combination
1403	寧嗽丸	<i>Ning Sou Wan</i>	Fritillaria & Platycodon Formula
1406	養心湯	<i>Yang Xin Tang</i>	Astragalus & Zizyphus Combination
2002	藿香正氣散	<i>Huo Xiang Zheng Qi San</i>	Pogostemon Formula
2003	蘇子降氣湯	<i>Su Zi Jiang Qi Tang</i>	Perilla Combination
5535	半夏	<i>Ban Xia</i>	Rhizoma Pinelliae preparatum

ing as soon as they start to talk; also, the cough stops when they stop talking. This cough, caused by ascending counter-flow *Qi*, is the indication of Pinellia Rhizome (*Ban Xia*). Pinellia Rhizome (*Ban Xia*) is used to direct the counter-flow *Qi* downward. When the *Qi* stops counter-flowing upwards, coughing will naturally stop as will asthma and vomiting.

Pinellia Rhizome (*Ban Xia*) is toxic. Ancient physicians observed clinically that when Pinellia Rhizome (*Ban Xia*) was combined with Aconitum (*Fu Zi*), it resulted in an rejection phenomenon, just like Licorice (*Gan Cao*) with plants of the Euphorbiaceae family such as Gansui Root (*Gan Sui*), Euphorbia (*Da Ji*), and Genkwa Flower (*Yuan Hua*). Therefore there are incompatibilities such as the “eighteen antagonisms” and “nineteen mutual inhibitions.” In addition, Pinellia Rhizome (*Ban Xia*) was listed as being contraindicated dur-

ing pregnancy in the 《Pouch of Pearls, Verse on Medicinal Properties (*Zhen Zhu Nang Yao Xing Fu*)》. However, if it is used in a formula composed with a principle of monarch, minister, assistant, and guide, there would not be rejection side effects. 《The Yellow Emperor's Inner Classic (*Huang Di Nei Jing*)》 explained, “When there is a hardening, there will be no harm (to the woman) and (the fetus) will not be harmed either.” Hardening indicates pregnancy or sickness, and there will be no harm using herbs such as Pinellia Rhizome (*Ban Xia*) and Arisaema (*Tian Nan Xing*). It means we don't need to worry about the very little side effects. When used properly, even if some rejection activities occur, the effects of treatment can still be achieved. For example, in Zhang Zhong-Jing's 《Essentials from the Golden Cabinet (*Jin Gui Yao Lue*) · Cold Sputum》 we could find Radix Kansui (*Gan Sui*) and Licorice (*Gan Cao*) used

together in Pinellia & Kansui Decoction (*Ban Xia Gan Sui Tang*). I believe there would not be any obvious side effects if we could be bold, exercise caution, and able to fully grasp the properties and indications of the herbs.

《Essentials of Materia Medica (*Ben Cao Bei Yao*)》 mentioned Pinellia Rhizome prepared with Ginger (*Jiang Ban Xia*) as the divine medicinal to stop vomiting. In fact, this sentence was not from Dr. Wang Ang or Dr. Li Dong-Yuan, but rather appeared in Zhang Zhong-Jing's 《Essentials from the Golden Cabinet (*Jin Gui Yao Lue*) · Treatment of Sputum, Rheum and Cough》 where he discusses the implications of Minor Pinellia Decoction (*Xiao Ban Xia Tang*). Minor Pinellia Decoction (*Xiao Ban Xia Tang*) only contains two herbs: Pinellia Rhizome (*Ban Xia*) and Fresh Ginger (*Sheng Jiang*). If Hoelen (*Fu Ling*) is added, it is called Minor Pinellia &

Hoelen Combination (*Xiao Ban Xia Jia Fu Ling Tang*). These two formulas are both used to treat vomiting. Pinellia Rhizome (*Ban Xia*) is certainly used in formulas such as Minor Bupleurum Combination (*Xiao Chai Hu Tang*), Vladimiria & Cardamom Combination (*Xiang Sha Liu Jun Zi Tang*), Six Major Herb Combination (*Liu Jun Zi Tang*), Citrus & Pinellia Combination (*Er Chen Tang*), and Hoelen & Bamboo Combination (*Wen Dan Tang*). If Pinellia Rhizome (*Ban Xia*) could not be used, Fresh Ginger (*Sheng Jiang*) or Dried Ginger (*Gan Jiang*) should be added. There is one formula in 《Essentials from the Golden Cabinet (*Jin Gui Yao Lue*) · Treatment of Pregnancy Problems》 called Ginger, Ginseng, & Pinellia Pill (*Gan Jiang Ren Shen Ban Xia Wan*), in which Pinellia Rhizome (*Ban Xia*) and Dried Ginger (*Gan Jiang*) are used together to treat vomiting.

## Pharmacology and Applications of Pinellia Rhizome (*Ban Xia*) and its Processed Forms

by Brion Research Institute of Taiwan



Processing of Pinellia Rhizome with Ginger (*Jiang Ban Xia*)

Pinellia Rhizome (*Ban Xia*) is the dry tuber of Arceae plant *Pinellia ternata* (Thunb.) Breit. It is acrid, warm, and toxic and functions to dry dampness and dissolve phlegm, direct counterflow

downward to arrest vomiting, and disperse *pi* and dissipate masses. It is a commonly used medicinal clinically. The toxicity of Pinellia Rhizome (*Ban Xia*) was recorded in ancient literature. The major clinical manifestation of its toxicity is a strong irritation to the mucosal cells of the organism. If it is taken raw, it can cause symptoms such as glossopharyngeal and oral numbness, swelling, pain, drooling, trismus, abdominal pain, vomiting, and choking. Therefore, ancient physicians put great attention on the processing of Pinellia Rhizome (*Ban Xia*) used to reduce its toxicity before it was applied clinically. Since the Han Dynasty, the processing methods used are in the order of: soup wash, ginger processing, boiling, slow fire, yeast processing, alum processing, ginger alum processing, ginger radish processing, ginger licorice processing, wine ginger processing, gleditsia alum ginger processing, *Fa Ban Xia* preparation, and gin-

ger halitum processing; there are more than 70 kinds of processing methods. They are complicated and have various specifications and standards, which have different influences on the medicinal effects.

Traditional medicine considers that Pinellia Rhizome prepared with Alum (*Qing Ban Xia*) is good to dry dampness and dissolve phlegm, especially cold phlegm. Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*) is good to direct counterflow downward and arrest vomiting, thus can be used to treat wet phlegm; Prepared Pinellia Rhizome (*Fa Ban Xia*) strengthens the spleen, regulates the *Qi*, and treats wind phlegm and dizziness; Raw Pinellia Rhizome (*Sheng Ban Xia*) is for external use only to treat abscess, swelling and phlegm node.

### TOXICITY TEST <sup>[1]</sup>

1. Acute toxicity test: Raw Pinellia Rhizome (*Sheng Ban Xia*) suspension given to mice orally: LD<sub>50</sub> 42.7±1.2g/kg, Prepared Pinellia Rhizome (*Zhi Ban Xia*) 80g/kg, no toxic reactions were observed.



2. Sub acute and accumulation of toxicity tests: Prepared Pinellia Rhizome (*Zhi Ban Xia*) had no ef-

Left: Raw Pinellia Rhizome (*Sheng Ban Xia*); Right: Pinellia Rhizome prepared with Ginger (*Jiang Ban Xia*)

ffects on mice weight; raw Pinellia Rhizome (*Sheng Ban Xia*) group had significant weight-gain inhibit effects. Death was seen in both groups. As the dosage increased and the administration time extended, the effects had also enhanced, which caused an increase of kidney compensation.

## PHARMACOLOGICAL EFFECTS<sup>[2,3]</sup>

### 1. Effects on Peritoneal Irritation in Mice

The results showed that the group of processed Pinellia Rhizome: Prepared with Alum (*Qing Ban Xia*), Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*), Pinellia Rhizome (*Fa Ban Xia*), Cooked Pinellia Rhizome (*Shu Ban Xia*) had a very significant irritation on peritoneal mucous membrane of mice when compared with the Corn Starch in the control group. However, when compared with the raw Pinellia Rhizome (*Sheng Ban Xia*) group, the irritation was significantly reduced. There were no significant differences between the four types of processed *Ban Xia*. Raw Pinellia Rhizome (*Sheng Ban Xia*) powder suspension caused a very strong irritation when injected intraperitoneally, and there was a very significant difference compared to Corn Starch control group.

### 2. Antiemetic Effects

The experimental results measured from the decoctions of Pinellia Rhizome (*Ban Xia*) and its processed variants showed they provided protection against emetic  $\text{CuSO}_4$ ; Decoctions of Pinellia Rhizome (*Ban Xia*) and its processed variants can significantly reduce the amount of animals vomiting, but did not reduce the number of vomiting animals; the antiemetic rates were 52% and 50%, in which processed forms had weaker effects than raw ones.

### 3. Effects on Phlegm Dispelling

The excretion of phenol red in mice was the method used to observe the phlegm dispelling effects of Pinellia Rhizome (*Ban Xia*). Alcohol extracts of both raw and processed Pinellia Rhizome (*Ban Xia*), as well as, Rodent Tuber (*Shui Ban Xia*) were prepared into solutions for the experiment. The results showed the alcohol extracts of processed Pinellia Rhizome (*Ban Xia*) and Rodent Tuber (*Shui Ban Xia*) had certain phlegm dispelling effects, and there were very significant differences statistically between the processed and the control groups. Raw Pinellia Rhizome (*Ban Xia*) and Rodent Tuber (*Shui Ban Xia*) did not show a significant phlegm dispelling effect, which did not match the reported results using the capillary drainage method. It might be related to the differing animal models.

### 4. Effects on Cough Relieving in Mice

Compared with the Corn Starch control group, Pinellia Rhi-

zome Prepared with Alum (*Qing Ban Xia*), Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*), Pinellia Rhizome (*Fa Ban Xia*), and Cooked Pinellia Rhizome (*Shu Ban Xia*) group can significantly extend the cough incubation period and very significantly reduced the number of coughs. Compared with the raw Pinellia Rhizome (*Sheng Ban Xia*) group, there were no significant differences in induced cough incubation period, but the number of coughs was significantly reduced. There were no significant differences between the four kinds of processed products. Compared with Corn Starch control group, the raw Pinellia Rhizome (*Sheng Ban Xia*) group can also extend the cough incubation period significantly, and reduce the number of coughs significantly.

Ammonia fumigation in mice was the method used to observe the cough relieving effects of raw and processed Pinellia Rhizome (*Ban Xia*). The results showed both raw and processed Pinellia Rhizome (*Ban Xia*) suspensions had significant cough relieving effects. The cough rates were 60% and 53.3%.

### 5. Effects on Gastric Secretory Functions in Rats

The results showed that, when compared with the Corn Starch control group, Pinellia Rhizome Prepared with Alum (*Qing Ban Xia*), the Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*), Pinellia Rhizome (*Fa Ban Xia*), and Cooked Pinellia Rhizome (*Shu Ban Xia*) group had very little effects on the amount of gastric secretion, pepsin activity, and gastric acidity. There were no significant differences between the four kinds of processed products. When comparing the processed vs. raw Pinellia Rhizome (*Sheng Ban Xia*) groups, and raw Pinellia Rhizome (*Sheng Ban Xia*) vs. Corn Starch control group, there were very little effects on the amount of gastric secretion and gastric acidity. However, the effects on the level of PGE2 in the gastric juices and pepsin activity were significant. Pinellia Rhizome Prepared with Alum (*Qing Ban Xia*), Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*), Pinellia Rhizome (*Fa Ban Xia*), and Cooked Pinellia Rhizome (*Shu Ban Xia*) can all be antagonistic to raw Pinellia Rhizome (*Sheng Ban Xia*)'s inhibition effects of PGE2 and pepsin in the gastric juice and reduce gastric acid. Among them, Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*) was slightly stronger.



## CLINICAL APPLICATIONS<sup>[4]</sup>

From pharmacological efficacy experimentation, toxicology, and clinical efficacy we observed: raw Pinellia Rhizome (*Sheng Ban Xia*)

strongly irritated the intraperitoneal region when administrated to mice. It caused a large degree of gastric mucosal injuries and lowered the level of PGE2 in the gastric juice, which destructed this endogenous gastric mucosal protective medium. This matched with the clinical toxic side effects of vomiting, diarrhea, abdominal burning when taking raw Pinellia Rhizome (*Sheng Ban Xia*). After processing, the irritation to the intraperitoneal region by the raw Pinellia Rhizome (*Sheng Ban Xia*) administrated to mice was significantly reduced. The cough caused by concentrated ammonia was significantly inhibited, the level of PGE2 content and pepsin activity in gastric juice were significantly enhanced, and the gastric emptying movement and the moving rate of intestinal contents in the mice were both significantly inhibited. These showed that the processing significantly reduced the toxicity and irritation of Pinellia Rhizome (*Ban Xia*), thereby reaching the purpose of processing. "Dispel toxicity while preserving the medicinal nature; reduce toxicity and increase the medicinal effect." However, the experimental results also showed that there were no significant differences between the four kinds of processed products, Pinellia Rhizome Prepared with Alum (*Qing Ban Xia*), Pinellia Rhizome Prepared with Ginger (*Jiang Ban Xia*), Prepared Pinellia Rhizome (*Fa Ban Xia*), and Cooked Pinellia Rhizome (*Shu Ban Xia*), when it came to toxic side effects and clinical efficacy.

Among the ingredients used in processing, the main functions of Fresh Ginger (*Sheng Jiang*) are to release the exterior and dissipate cold, warm the center and arrest vomiting, and dissolve phlegm and relieve cough. The main functions of alumen are to stanch bleeding and stop diarrhea, and dispel wind phlegm. The main functions of

lime are to dry dampness, kill worms, stanch bleeding, and relieve pain. The main functions of Licorice (*Gan Cao*) are to harmonize the center and relax tension, moisten the lung, and detoxify and harmonize all herbs. The main functions of Pinellia Rhizome (*Ban Xia*) are to dry dampness and dissolve phlegm, direct counterflow downward to arrest vomiting, disperse *pi* and dissipate masses, among which "dissolving phlegm" is the most important function. The four ingredients used in processing all have collaborative functions. *Wu-Hao* et al. researched animal irritation caused by and the toxicity of raw Pinellia Rhizome (*Sheng Ban Xia*), ginger soaked *Ban Xia*, ginger and alumen processed *Ban Xia*, alumen processed *Ban Xia*, and ginger juice cooked *Ban Xia*. The results showed that ginger juice cooked *Ban Xia* can significantly reduce the irritation of rabbit corneas and mice abdominal cavities caused by raw Pinellia Rhizome (*Sheng Ban Xia*), and very significantly increased the LD<sub>50</sub> in mice when injected intraperitoneally. There were no significant effects on toxicity and irritation when comparing ginger soaked *Ban Xia* and raw Pinellia Rhizome (*Sheng Ban Xia*), which indicated that the key to detoxification was the "cooking." The assistant ingredient, Fresh Ginger (*Sheng Jiang*), was mainly used to strengthen Pinellia Rhizome's (*Ban Xia*) functions of directing counterflow downward to arrest vomiting, dissolving phlegm, and relieving cough. It cannot significantly eliminate Pinellia Rhizome's (*Ban Xia*) toxicity. Therefore, the key to remove Pinellia Rhizome's (*Ban Xia*) toxicity is to reduce its toxicity and irritating constituents by heating. Assistant ingredients such as Fresh Ginger (*Sheng Jiang*), alumen, lime, and Licorice (*Gan Cao*) are used for their collaborative functions, not entirely for their detoxification functions.

References available upon request

## Herb Focus Sustainability of Herb Supply Chain

Sun Ten Pharmaceutical Co., Ltd. was pleased to bring 30 Swiss clients, including senior practitioners, acupuncturists and natural therapists, to visit cultivation site, Bozhou Chinese Herbs Trading Center, and raw herb processing plant again this April.

Bozhou is the largest raw herb marketplace in China and the annual transaction is USD 1.5 billion. It covers 75% of China's white peony production. Since farmers bring their own herbs trade at market, the quality of herbs varies and is difficult to control.

Therefore, the professional raw herb sourcing team of Brion Research Institute constantly controls the herb supply chain from the cultivation site to herbal sourcing companies in China to determinate the quality and safety of herb.

Below are some of the feedbacks from the participants:

**"I am amazed to see how the process from raw herb to granule finished product and how Taiwan healthcare system makes TCM the safe prescription and dispensing by applying QR (Quick Response) code system in most clinics and hospitals."** said one senior European practitioner.

**"The TCM contracted lecture is excellent!"** said Dr. Schaller Silvio, who has practiced TCM in Zurich.

These practitioners are now more aware on the issues and challenges related to the reinforcement of quality herb sourcing through channels in China.

