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Heart Disease

a continuing education course



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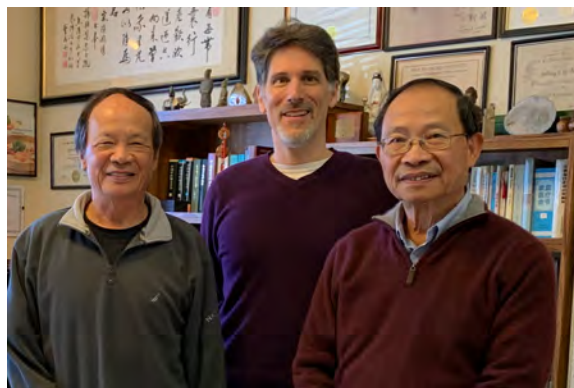
Authors

For many years, the Pang family has practiced and taught Chinese medicine. In this continuing education series, we explore the treatments informed by Ken and Jeffrey Pang's decades of experience combined with generations of Pang family wisdom.

Ken Pang, L.Ac. received his degree in TCM from the Guangzhou University of Chinese Medicine. He practiced as a licensed acupuncturist and herbalist in China, Hong Kong, and California. Retiring after 50 years of clinical practice, Ken Pang, L.Ac. now focuses on publishing the venerated Pang family secrets of TCM at the Healthcare Medicine Institute.

Prof. Jeffrey Pang, L.Ac. received his MD in western medicine and TCM from Sun Yat Sen University of Medical Science in Guangzhou. He practiced as a licensed acupuncturist for ten years in Guangzhou and Hong Kong prior to becoming a licensed acupuncturist in California, where he has maintained a private practice for decades. Since 1984, Prof. Pang has served as the department chair for the theory and herbology departments at Five Branches University. In addition, Prof. Pang is a principle author at the Healthcare Medicine Institute.

Adam White, L.Ac., Dipl.Ac. has served as a faculty member and as the continuing education director for Five Branches University. His publications cover a variety of topics including Chinese medicine dietetics, the treatment of pelvic inflammatory disorder, and herb-drug interactions. He currently works at the Healthcare Medicine Institute and maintains a private practice in California.



Ken Pang, Adam White, Jeffrey Pang (from left to right)

Congestive Heart Failure (CHF)

Biomedicine

This section focuses on the treatment of chronic CHF. According to the National Heart, Lung, and Blood Institute of the U.S. National Institutes of Health, heart failure (also termed congestive heart failure):

... is a condition in which the heart can't pump enough blood to meet the body's needs. In some cases, the heart can't fill with enough blood. In other cases, the heart can't pump blood to the rest of the body with enough force. Some people have both problems.

The term "heart failure" doesn't mean that your heart has stopped or is about to stop working. However, heart failure is a serious condition that requires medical care.

Overview

Heart failure develops over time as the heart's pumping action grows weaker. The condition can affect the right side of the heart only, or it can affect both sides of the heart. Most cases involve both sides of the heart.

Right-side heart failure occurs if the heart can't pump enough blood to the lungs to pick up oxygen. Left-side heart failure occurs if the heart can't pump enough oxygen-rich blood to the rest of the body.

Right-side heart failure may cause fluid to build up in the feet, ankles, legs, liver, abdomen, and the veins in the neck. Right-side and left-side heart failure also may cause shortness of breath and fatigue (tiredness).

The leading causes of heart failure are diseases that damage the heart. Examples include ischemic heart disease, high blood pressure, and diabetes.

Outlook

Heart failure is a very common condition. About 5.7 million people in the United States have heart failure. Both children and adults can have the condition, although the symptoms and treatments differ.

Currently, heart failure has no cure. However, treatments—such as medicines and lifestyle changes—can help people who have the condition live longer and more active lives. Researchers continue to study new ways to treat heart failure and its complications.¹

The NIH (National Institutes of Health) notes in the U.S. National Library of Medicine website:

The weakening of the heart's pumping ability causes

- *Blood and fluid to back up into the lungs*
- *The buildup of fluid in the feet, ankles and legs [edema]*
- *Tiredness and shortness of breath*

Common causes of heart failure are coronary artery disease, high blood pressure and diabetes. It is more common in people who are 65 years old or older, African Americans, people who are overweight, and people who have had a heart attack. Men have a higher rate of heart failure than women.

Your doctor will diagnose heart failure by doing a physical exam and heart tests. Treatment includes treating the underlying cause of your heart failure, medicines, and heart transplantation if other treatments fail.

1. [nhlbi.nih.gov/health-topics/heart-failure](https://www.nlm.nih.gov/health-topics/heart-failure). 7-27-2019.

Diagnostics include listening to heart sounds, lungs sounds indicating fluid buildup, and swelling of the legs, ankles, feet, abdomen, and veins of the neck. Tests include EKG (electrocardiogram), chest X-ray, a BNP hormone (B-type natriuretic peptide) blood test, echocardiography, ultrasound measurements of lung and heart blood flow, Holter monitor of the heart's electrical activity over a 24–48 hour period, stress tests, nuclear heart scans, cardiac catheterization, coronary angiography, cardiac MRI, and thyroid function tests.

CHF Diagnosis

- **Heart yin and yang deficiency**
- **Spleen qi deficiency**

Chronic CHF encompasses a complex of diagnostic considerations and there are variations in differential diagnostics per each individual case. Primary diagnostic considerations are heart yin and yang deficiency and spleen qi deficiency. Additional considerations include:

- Water obstruction due to kidney yang deficiency affecting the heart
- Blood stasis due to qi deficiency
- Phlegm dampness obstructing the lungs

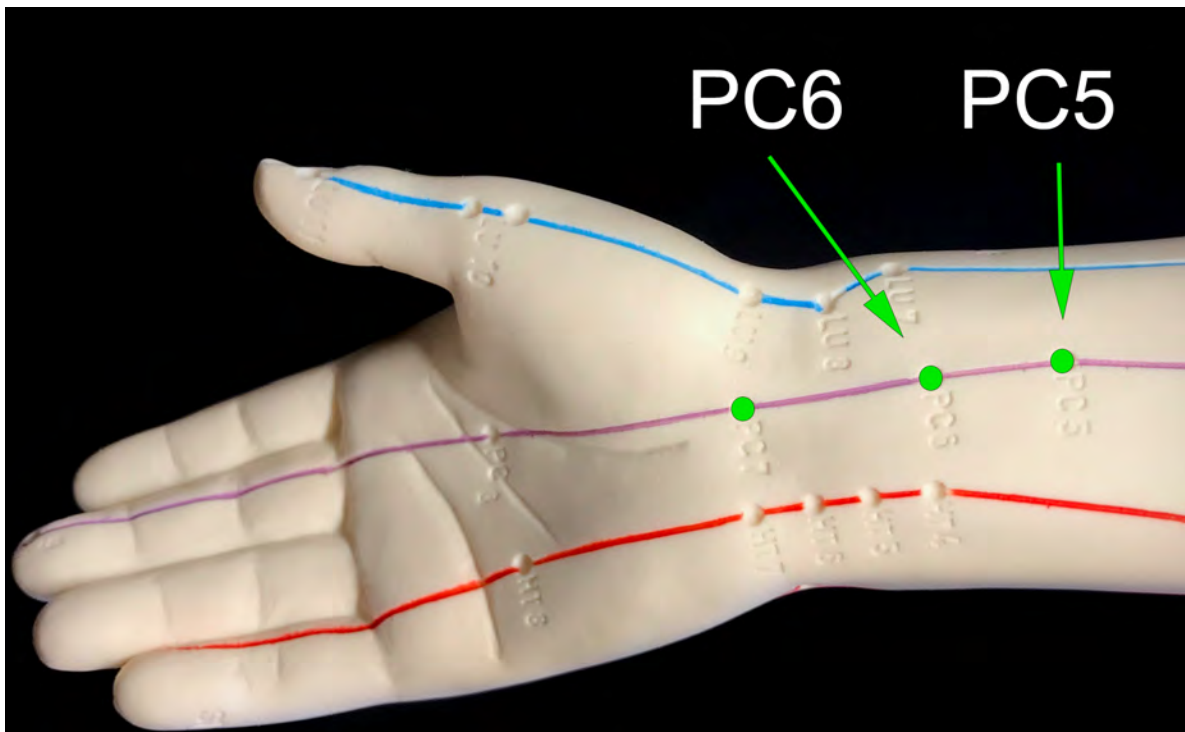
Patients often present with shortness of breath (especially upon exertion), fatigue, cyanosis of the lips or nail beds, palpitations, edema (especially the legs, ankles, feet, and abdomen), abdominal distension, swelling of the veins of the neck, heart murmurs, arrhythmias, chest pain, and pain of the epigastrium. Excess water stagnation may lead to frequent urination and coughing that worsens when lying horizontally. In severe cases, fluid buildup in the lungs (pulmonary edema) may require emergency intervention.

Acupuncture

Pang Family Acupuncture Point Prescription

- **PC6, HT7, ST36, SP9, SP6, BL15.** Needle BL15 using warm needle moxa technique.
- **Auricular points: Shenmen, heart, kidney, spleen.** For auricular points, selection of ear tacks for longer-term retention of needles is appropriate.

Acupoints



Neiguan, PC6 (Inner Pass)

This point is 2 cun above the transverse wrist crease, on the line connecting PC3 and PC7, between the tendons of the palmaris longus and flexor carpi radialis.

PC6 is the luo (connecting) point of the pericardium channel. It is the confluent point of the Yinwei vessel (Yin Linking Vessel). PC6 regulates the heart, calms the spirit, regulates qi, suppresses pain, and harmonizes the stomach. Common indications for use include: nausea, vomiting, hiccups, pain (cardiac, chest, elbow, upper arm, head, neck, stomach), mental illness, seizures due to epilepsy, insomnia, fever, palpitations, irregular menstruation, dysuria, postpartum dizziness.

As a confluent point of the Yinwei vessel, PC6 is paired with SP4, which is the confluent point of the Chong (thoroughfare) vessel. Together, PC6 and SP4 are indicated for the treatment of heart, chest, and stomach disorders.

HT7 (Shenmen)

HT7 is located at the ulnar end of the transverse crease of the wrist, in the depression on the radial side of the tendon of the flexor carpi ulnaris. Use caution when needling this point to avoid the ulnar artery and ulnar nerve. HT7 is a shu stream, earth, son, and source point. HT7 calms the spirit, pacifies the heart, and the clears channels. Common indications for use include insomnia, mental illness, irritability, cognitive impairment, palpitations, epilepsy or seizures, hypochondriac region pain, icteric sclera, five palms heat, and jaundice.

ST36 (Zusanli)

This acupoint is 3 cun below ST35, one finger-breadth from the anterior crest of the tibia, in tibialis anterior. This point is lateral to a notch that is palpable on the tibia. Zusanli (leg three measures) is a He Sea, earth, lower He Sea of the Stomach, and Sea of Nourishment point. ST36 is a Gao Wu command point and a Ma Dan-Yang heavenly star point. ST36 orders the spleen and stomach, regulates qi and blood, and tonifies qi. Common indications for usage include hypertension, gastric pain, vomiting, abdominal distention, diarrhea, constipation, mastitis, breast abscesses, enteritis, gastritis, edema, asthma, general weakness, emaciation, anemia, indigestion, hemiplegia, neurasthenia, and mental disorders.



SP6 (Sanyinjiao)

SP6 is 3 cun directly above the tip of the medial malleolus, on the posterior border of the medial aspect of the tibia. Sanyinjiao is translated as 3 yin junction; this point is the meeting of the 3 lower yin meridians. SP6 strengthens the spleen, transforms dampness, spreads liver qi, and benefits the kidneys. SP6 is an important acupuncture point in obstetrics and gynecology. Indications for use include: dysmenorrhea, irregular menstruation, abnormal uterine bleeding, leukorrhea, prolapse of uterus, infertility, difficult or delayed labor. Other common indications for use include: abdominal pain and distention, diarrhea, nocturnal emissions, enuresis, dysuria, lower limb atrophy, lower limb motor impairment or hemiplegia, vertigo from blood deficiency (xue xu), insomnia.

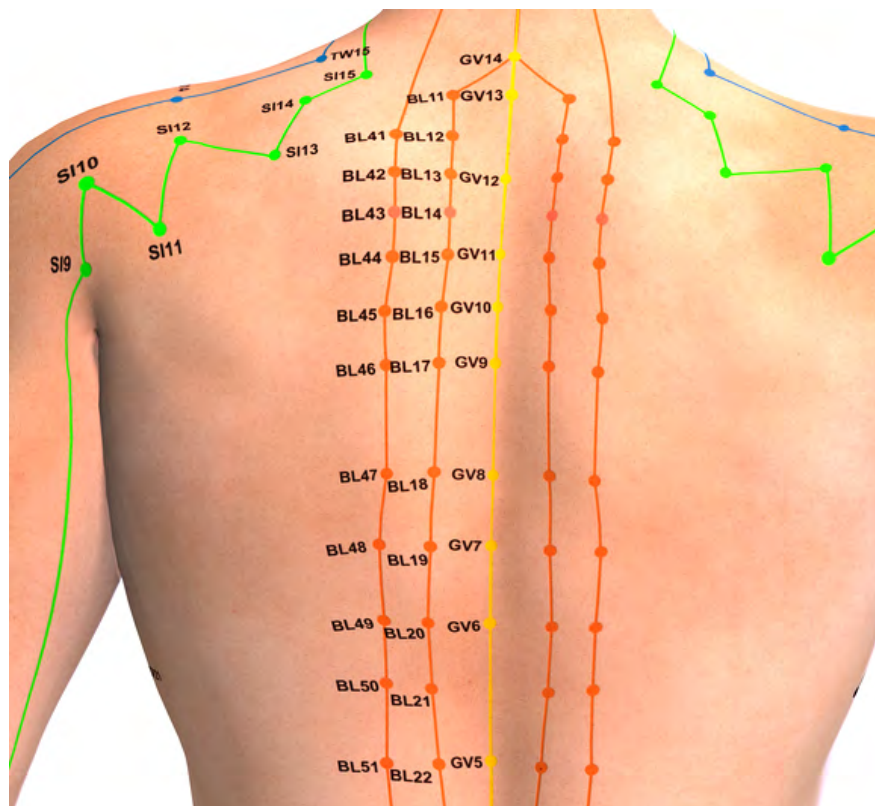
SP9 (Yinlingquan, Yin Mound Spring)

SP9 is located at the lower border of the medial condyle of the tibia, in the depression posterior and inferior to the medial condyle of the tibia. Located on the medial side of the body, this acupoint is level with GB34 (Yanglingquan), which is located on the lateral aspect of the lower leg. Perpendicular insertion between 0.5–1.5 cun is applied.

SP9 is a He-Sea and water point. SP9 transforms damp stagnation and benefits the lower jiao (burner). Indications include abdominal pain and distention, diarrhea, dysentery, edema, enuresis, urinary incontinence or retention, genital pain, dysmenorrhea, irregular menstruation, and knee pain. For swelling of the knee, this acupoint may be combined with GB34.

BL15 (Xinshu)

This point is located 1.5 cun lateral to T-5, at the level of the lower border of the spinous process. Oblique or transverse-oblique insertion towards the spine is indicated. Avoid perpendicular or oblique needling away from the spine to avoid pneumothorax. BL15 is the heart back shu point. BL15 benefits the heart, calms the spirit, and regulates qi and blood. Common indications for use include cardiac or chest pain, cognitive disorders, mental illness, and night sweats.



Alternate Point Selections

Dirty Water Affecting The Heart Due To Kidney Yang Deficiency

When there is water affecting the heart due to kidney yang deficiency as a predominant presentation, the acupuncture formula may be modified. The principle is to warm the kidney yang and remove the dirty water.

Acupuncture Points

- **HT7 (Shenmen)**
- **PC6 (Neiguan)**
- **BL15 (Xinshu)**
- **SP9 (Shuifen)**
- **ST36 (Zusanli)**
- **BL23 (Shenshu)**
- **GV4 (Mingmen)**

This selection includes the addition of BL23 and GV4 to the Pang family point prescription:

BL23 (Shenshu)

This point is located 1.5 cun lateral to L-2, at the level of the lower border of the spinous process. This is the kidney back shu point (Beishu). BL23 regulates kidney qi, benefits the lumbar vertebrae, and benefits the eyes and ears. Common indications for use include irregular menstruation, tinnitus, edema, low back pain, and weak knees.

GV4 (Mingmen)

This point is located below the spinous process of L2. GV4 nourishes yuan (source) qi, strengthens the kidneys, and benefits the lumbar vertebrae. GV4 tonifies kidney and spleen qi and yang. Common indications for usage include lower back pain, leukorrhea, and diarrhea.

Blood Stasis Due To Qi Deficiency

If there is blood stasis due to qi deficiency (qi fails to control blood), additional points to the Pang family point prescription may include the following:

- **CV6 (Qihai)**
- **CV4 (Guanyuan)**
- **SP10 (Xuehai)**
- **BL17 (Geshu)**

CV6 (Qihai)

CV6 is located on the midline of the abdomen, 1.5 cun below the umbilicus. CV6 regulates qi, strengthens the kidneys, tonifies qi and yang, fosters original (source) qi, harmonizes blood, regulates the penetrating (chong) and conception (ren) vessels, and dispels dampness. Traditional indications include hypertension due to deficiency, abdominal pain, irregular menses, dysmenorrhea, leukorrhea, uterine bleeding, urinary disorders, spermatorrhea, nocturnal emission, and impotence.

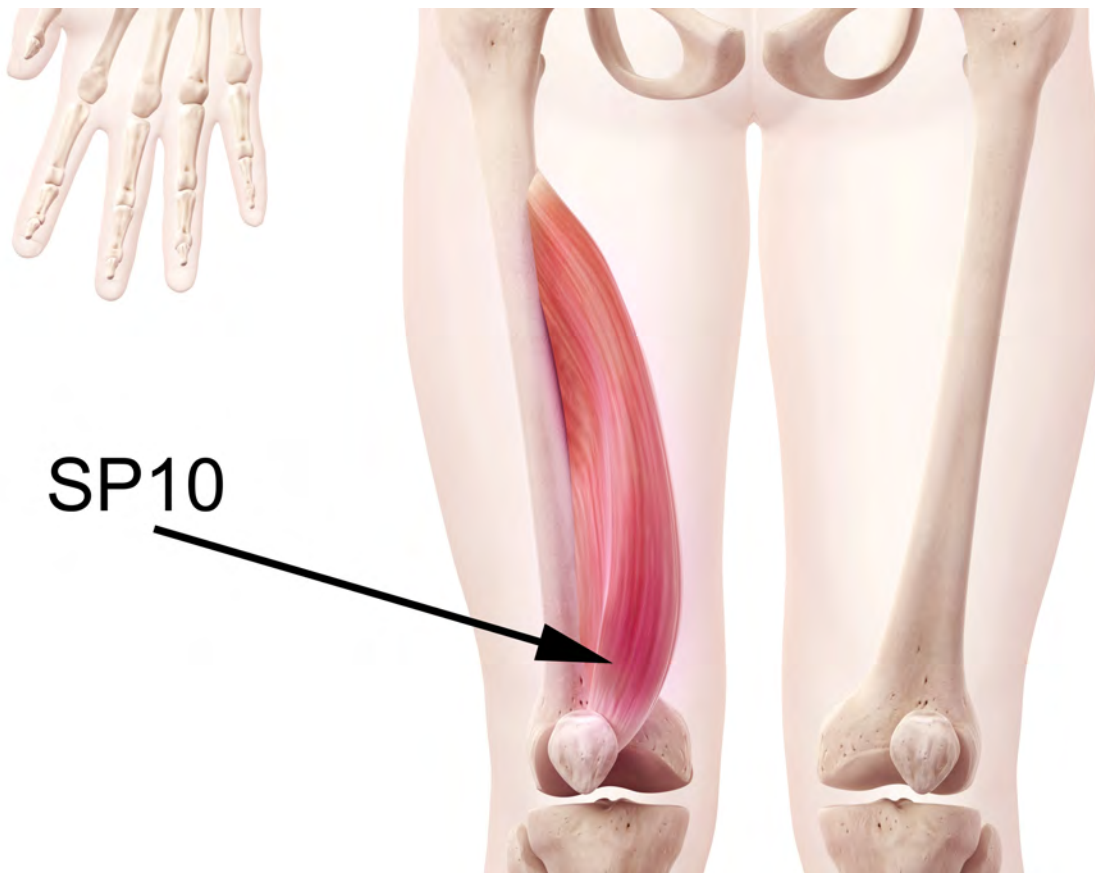
CV4 (Guanyuan)

This point is located on the midline of the abdomen, 3 cun below the umbilicus. CV4 is the front mu point of the small intestine. CV4 nourishes and stabilizes the kidneys, fosters original qi and benefits essence, moves and builds qi, and restores yang. CV4 is the

intersection of the three leg yin channels deeply. Common indications for use include hypertension due to deficiency, abdominal pain, diarrhea, irregular menstruation, dysmenorrhea, leukorrhea, and enuresis.

SP10 (Xuehai)

Xuehai is translated as the Sea of Blood. SP10 harmonizes and nourishing qi, cools heat in the blood, invigorates the blood, benefits the skin, and harmonizes menstruation. Common indications for usage include irregular menstruation, amenorrhea, abnormal uterine bleeding, skin disorders (e.g., urticaria, eczema, neurodermatitis, pruritus), and dysuria.



Geshu, BL17 (Diaphragm Shu)

This acupoint is 1.5 cun lateral to T-7, at the level of the lower border of the spinous process. BL17 is the diaphragm back shu (beishu) point and the influential point of blood (Hui meeting point of blood). BL17 regulates blood, transforms congealed blood, cools heat in the blood, expands the chest and diaphragm, and strengthens deficient conditions.

Common indications for usage include chest oppression, night sweating, steaming bone disorder, tidal fever, vomiting, mania, depression, afternoon fevers, night sweats, coughing with blood, epigastric pain, and hiccups.

Heart Yang Deficiency

The basic acupuncture prescription may be modified when heart yang deficiency is the predominant presentation. This syndrome presents with palpitations, cyanosis of the nail beds (blue fingernails), chest pain, and shortness of breath. The tongue is usually dark-purple and the pulse is irregular with missed beats. Dirty water stagnation is usually present in the epigastrium and hypochondrium and there may also be coughing, fatigue, and generalized edema.

The heart qi deficiency manifests in the palpitations and shortness of breath. The heart yang deficiency manifests in chest pain. The heart deficiency cannot promote circulation and therefore there is cyanosis (a bluish discoloration resulting from poor circulation or inadequate oxygenation of the blood) of the nails. The treatment principle is to warm the heart yang:

- **HT7 (Shenmen)**
- **PC6 (Neiguan)**
- **BL15 (Xinshu)**
- **BL23 (Shenshu)**
- **GV4 (Mingmen)**

- **KD3 (Taixi)**

This point prescription introduces the use of KD3 for the treatment of congestive heart failure:

KD3 (Taixi, Supreme Stream)

This acupoint is located between the tip of the medial malleolus and the Achilles tendon, level with the prominence of the medial malleolus. KD3 is a shu stream, earth, and yuan-source point. KD3 benefits the kidneys, cools yin deficiency heat, and strengthens the lower back, lumbar spine, and knees. Traditional indications include irregular menstruation, spermatorrhea, enuresis, toothache, sore throat, tinnitus, deafness, emphysema, asthma, sore throat, and excessive thirst.

A powerful acupoint, KD3 is innervated by the medial crural cutaneous nerve on the course of the tibial nerve and the posterior tibial artery and vein run through KD3. Needling KD3 may elicit a strong deqi sensation, even when using moderate or peaceful needling techniques. It may be advisable to let patients know, in advance of needling, that an electric shooting sensation may occur and that this is a healthy response.



Herbs

Pang family herbal formula ingredients

Ji Lin Shen	(Radix Ginseng, 人参)	24 grams
Fu Ling	(Sclerotum Poriae Cocos, 茯苓)	30 g
Shu Fu Zi	(Radix Aconiti Lateralis Preparata, 熟附子)	6 g
	<i>pre-cook Shu Fu Zi 20 minutes</i>	
Wu Wei Zi	(Fructus Schizandrae Chinensis, 五味子)	9 g
Mai Men Dong	(Tuber Ophiopogonis Japonici, 炒麦门冬)	9 g
Rou Gui Fen	(Cortex Cinnamomi Cassiae powder, 肉桂)	2 g
	<i>put the cinnamon powder in the tea cup with cover</i>	
Gan Jiang	(Rhizoma Zingiberis, 干姜)	9 g
Huang Jing	(Rhizoma Polygonati, 黄精)	12 g
Bai Zhu	(Rhizoma Atractylodis Macrocephalae, 白术)	12 g
Shan Yao	(Radix Dioscoreae Oppositae, 山药)	12 g
Ze Xie	(Rhizoma Alismatis, 泽泻)	12 g
Mu Dan Pi	(Cortex Radicis Moutan, 牡丹皮)	9 g
Shan Zhu Yu	(Fructus Corni Officinalis, 山茱萸)	9 g
Dan Shen	(Radix Salviae Miltiorrhizae, 丹参)	9 g
Huang Qi	(Radix Astragali Membranacei, 黄芪)	12 g
Bai Zi Ren	(Semen Platycladi, 柏子仁)	9 g
Huo Ma Ren	(Semen Cannabis Sativae, 火麻仁)	12 g
Zhi Gan Cao	(Radix Glycyrrhizae, 炙甘草)	9g

Formula Overview

This formula uses a heavy dose of Ren Shen (Ji Lin Shen) and Fu Ling. Ren Shen focuses on benefitting the qi and Fu Ling promotes the water and benefits spleen qi. This addresses key issues including dirty water stagnation and heart qi, yin, and yang deficiency.

Decoction Instructions

Cover the herbs with water plus 2–3 inches of additional water above the herb line in the pot. This is a large amount of herbs, so this formula can be boiled up to three times per bag. Each dose can be decocted and consumed separately. Alternatively, boil each bag three times and then mix the decocted herb tea from all three boilings. This creates a more even dosage. Then, separate the mixture into three doses. Drink one cup per day during periods of relative remission. During more serious states of the disease, drink one cup in the morning and one cup at night.

Individual Herbs

- Ji Lin Shen refers to ginseng (Ren Shen) grown in Jin Lin Province, where high quality ginseng is often produced. The recommendation for Ji Lin Shen is because it is usually milder than Korean ginseng (Gao Li Shen). The specific type of Ji Lin Shen that is recommended is Hong Shen (red ginseng), which is processed by steaming in rice wine and molasses. This process strengthens its properties of tonifying qi and yang and also extends the shelf life of the herb.

Hong Shen is warming and tonifies yuan qi (source qi), spleen and stomach qi, lung qi, and heart qi. This is useful for patients with heart qi deficiency and the herb helps to calm the shen (spirit) for these patients.

- Fu Ling has a neutral to warm temperature and is sweet and bland. Fu Ling enters the heart, spleen, kidney, lungs, bladder, and stomach channels. Fu Ling promotes urination and leaches out dampness and is especially useful for the treatment of fluid stagnation. Fu Ling strengthens the spleen and harmonizes the middle jiao (burner) and is useful for the treatment of spleen deficiency related dampness. Fu Shen, a variety of Fu Ling, is useful for calming the shen (spirit) and heart.

- Shu Fu Zi is an important selection because it stimulates the heart beat, improves blood circulation, and improves water circulation. Shu Fu Zi warms the interior and is hot and toxic. It enters the heart, kidneys, and spleen channels. Shu Fu Zi restores devastated yang, warms ming men fire, and benefits heart, kidney, and spleen yang. Shu Fu Zi disperses cold and dampness and warms the channels to stop pain.

Note that Shu Fu Zi is cooked 20 minutes prior to adding the other herbs. Shu Fu Zi is prepared aconite and has significantly less toxicity than unprepared Fu Zi. The recommended additional cooking time decreases toxicity as well. Use cautiously and only in areas where it is legal. Toxic overdose symptoms present with numbness of the mouth, tongue, lips, or four limbs. In severe cases, there may be nausea, vomiting, and arrhythmias.

Gan Cao (Radix Glycyrrhizae) and Gan Jiang (Rhizoma Zingiberis Officinalis) may be used to alleviate the toxicity. Zhi Gan Cao in the Pang family formula helps to ameliorate adverse effects associated with Shu Fu Zi. One other concern is that Fu Zi may be contraindicated for use when patients are taking various medications.

- Wu Wei Zi is sour, calms heart and liver yang, and lubricates yin.
- Mai Men Dong moistens the lung, stomach, and heart yin.
- Rou Gui warms the interior and expels cold. Rou Gui warms the kidneys, spleen, and heart. Rou Gui fortifies yang and ming men fire. Rou Gui leads the fire back to the source for cases of heat in the upper part of the body and cold in the lower part of the body wherein there is upward floating of yang deficiency (true cold, false heat).
- Gan Jiang (dried ginger) warms the interior, warms the middle jiao (burner), rescues devastated yang, dispels wind-dampness, warms the lungs, and warms the channels and unblocks the pulse.

- Huang Jing tonifies spleen and stomach qi, moistens lung yin, tonifies the kidneys, and strengthens jing (essence).
- Bai Zhu tonifies the spleen, dries dampness, strengthens wei qi and stops sweating, and calms the fetus.
- Shan Yao tonifies the spleen, nourishes stomach yin, tonifies lung qi and yin, astringes jing, and tonifies kidney yin.
- Ze Xie promotes urination and eliminates dampness. Ze Xie drains kidney fire (kidney yin deficiency with fire uprising) and drains damp-heat from the lower jiao (burner).
- Mu Dan Pi clears heat, cools the blood, invigorates the blood and dispels blood stasis, clears liver fire, and drains internal abscesses. Mu Dan Pi clears yin deficiency heat. Topically, Mu Dan Pi drains pus from sores.
- Shan Zhu Yu is sour, slight warming, and enters the liver and kidney channels. This herb stabilizes the kidneys and astringes body fluid and jing (i.e., useful for frequent urination or incontinence, spermatorrhea, excessive sweating). This herb tonifies liver yin and both kidney yin and yang. In addition, this herb stops excessive uterine bleeding and excessive menstrual flow due to deficiency.
- Dan Shen invigorates blood and dispels blood stasis, clears heat due to heart and kidney yin deficiency or ying stage heat, cools the blood (especially for sores and breast abscesses), nourishes blood, and calms the shen (spirit) when disturbed by heart blood deficiency or ying and blood (xue) stage heat.
- Huang Qi (astragalus) tonifies qi and blood, benefits the spleen and lungs, raises spleen and stomach yang qi, tonifies wei qi and stabilizes the exterior (especially for excessive sweating due to ying and wei imbalances), treats chronic ulcerations (allows for

proper production and draining of pus), generates bodily fluids, and relieves pain and numbness due to qi and blood deficiency.

- Bai Zi Ren nourishes the heart, calms the spirit, moistens the intestines, and astringes yin deficiency sweating.
- Huo Ma Ren (cannabis seeds) are sweet, neutral, and enter the large intestine, spleen, and stomach channels. This herb moistens the intestines (treats large intestine yin or blood deficiency constipation), clears heat and mildly promotes the healing of sores (either internally or topically when mixed with other herbs), and moistens dryness (treats dry hair and promotes hair growth).
- Zhi Gan Cao (honey fried licorice root) harmonizes herbs within formulas and moderates their functions, tonifies spleen qi and heart qi, benefits heart yang, moistens the lungs, alleviates spasms of the legs and abdomen, clears heat and fire toxins (for the treatment of sores and carbuncles), and is antidote (externally and internally) for many toxic substances.

CHF Case History

Mrs. J.

Age 63

First office visit: April 2011

Complaints

- Cyanosis of the nail beds (blue fingernails)
- Recent development of shortness of breath and palpitations upon exertion
- Fatigue
- Cannot walk more than 50 meters without resting

- Pronounced edema of both legs
- The patient stated that she had a “heart valve” problem, but did not provide any details.

Pulse: small, rapid, knotted

Tongue: pale, purple, teethmarks

Note: A knotted pulse (jie mai) is slow and interrupted at irregular intervals (irregularly irregular). This indicates qi and blood stagnation due to obstruction and involvement of the heart.

Treatment

Pang’s herbal formula and acupuncture prescription.

After three acupuncture treatments over a three week period and three weeks of drinking the herbal decoction, the edema reduced by two-thirds. She continued weekly acupuncture treatments and daily consumption of the herbal formula for an additional two months. During the two-month extended treatment period, she consumed an herbal drink made from 9 grams of raw herbal powder (3 grams San Qi, 3 grams Ling Zhi). She was advised to avoid eating salty and greasy foods.

Results

Edema significantly reduced. Patient now able to walk in excess of 200 meters without any fatigue or need for rest.

Heart Failure Research #1

Researchers from the University of California—Los Angeles (UCLA) Department of Medicine conclude that for heart failure patients, “Acute acupuncture attenuates sympathoexcitation during mental stress in advanced HF [heart failure] patients.”² They conclude that for heart failure patients:

The major findings of our study are: that (1) sympathetic activation during mental stress is virtually eliminated after acupuncture at Li4, P6, and Liv3; (2) this sympathomodulatory effect of acupuncture is not a placebo effect and is not due to accommodation to mental stress testing because during control studies consisting of non-acupoint acupuncture and no-needle acupuncture, sympathetic activation was not attenuated....³

In their research entitled *Acupuncture inhibits sympathetic activation during mental stress in advanced heart failure patients*, they note:

Advanced heart failure is characterized by neurohumoral activation, including activation of the sympathetic nervous system. Patients with the greatest sympathetic activation have the poorest survival.⁴ Pharmacologic therapies that have targeted this neurohumoral activation have markedly improved survival in patients with heart failure.^{5,6,7} Although few investigations in humans have studied whether

2. Middlekauff, Holly R., Kakit Hui, Jun Liang Yu, Michele A. Hamilton, Gregg C. Fonarow, Jaime Moriguchi, W. Robb MacLellan, and Antoine Hage. "Acupuncture inhibits sympathetic activation during mental stress in advanced heart failure patients." *Journal of cardiac failure* 8, no. 6 (2002): 399-406.

3. Middlekauff, Holly R., Kakit Hui, Jun Liang Yu, Michele A. Hamilton, Gregg C. Fonarow, Jaime Moriguchi, W. Robb MacLellan, and Antoine Hage. "Acupuncture inhibits sympathetic activation during mental stress in advanced heart failure patients." *Journal of cardiac failure* 8, no. 6 (2002): 399-406.

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6. The SOLVD Investigators: Effect of enalapril on survival in patients with reduced left ventricular ejection fraction and congestive heart failure. *N Engl J Med* 1991;325: 293 - 302.

7. Packer M, Coats AJS, Fowler MB, Mohacsi P, Katus HA, Krum H, Castaigne A, Roecher KB: Effect of carvedilol on survival in severe chronic heart failure. *N Eng J Med* 2001;344:1651 - 1658.

acupuncture modulates the autonomic nervous system, evidence in animals supports the concept that acupuncture has sympatholytic and depressor effects.⁸

The acupuncture treatment used in the UCLA study was as follows:

The skin was cleaned with alcohol. Acupuncture needles (4 cm, 0.25 mm diameter, Natural, Suzhou Guso Acupuncture and Moxibustion Appliance Co., Ltd., China) were inserted into right Li4 (Hegu, large intestine 4), right Liv3 (Taichong, liver 3), and left P6 (Neiguan, pericardium 6) points, and manually stimulated for approximately 15 seconds to achieve the De Qi sensation of heaviness, fullness, or soreness. Needles were left in place while volunteers rested for 15 minutes, and then needles were removed. These points were chosen because they associated with stress reduction⁹ or have been used in the treatment of heart failure.^{10,11}

The UCLA researchers note:

Bursts of sympathetic nerve activity are entrained by the heart rhythm, and a maximum of 1 burst is present per heart beat. Whereas in resting healthy humans, a burst of sympathetic activity may typically follow about one fourth of the heart beats, in heart failure patients, it is not uncommon to find a burst of sympathetic activity following almost every heart beat.¹²

8. Middlekauff, Holly R., Kakit Hui, Jun Liang Yu, Michele A. Hamilton, Gregg C. Fonarow, Jaime Moriguchi, W. Robb MacLellan, and Antoine Hage. "Acupuncture inhibits sympathetic activation during mental stress in advanced heart failure patients." *Journal of cardiac failure* 8, no. 6 (2002): 399-406.

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10. Dingjiu H: Effect of acupuncture on left ventricular size and function assessed by echocardiography in patients with stable dilated cardiomyopathy. *J Trad Chin Med* 1985;5:243-245.

11. Shaomei Y, Shiqian X, Yuhu H, Chengju L, Fengru L: Observations on the effects of acupuncture at Neiguan point on the left ventricle functions in 106 normal persons and 100 patients with heart disease. *J Trad Chin Med* 1985;5:249-252.

12. Holaday JW: Cardiovascular effects of endogenous opiate systems. *Annu Rev Pharmacol Toxicol* 1983;23:541-594.

The researchers conclude that acupuncture exerts a sympathomodulatory effect for patients with advanced heart failure.¹³ This indicates that acupuncture may provide important health benefits to heart failure patients.

Heart Failure Research #2

Acupuncture increases the effectiveness of medications for the treatment of congestive heart failure (CHF), with results confirmed by color doppler echocardiography, changes in blood urea nitrogen and creatinine levels, and exercise tolerance tests. Affiliated Hospital of Yanbian University (Yanji, China) researchers compared two groups: control and acupuncture.

One group received standard pharmacologic medications and Sheng Mai San herbal injections and the other received the same treatment regimen plus the addition of acupuncture treatments. The group that did not receive acupuncture had an 86.7% total effective rate. The group receiving acupuncture had a 93.3% total effective rate. [1] Based on the findings, the researchers conclude that the addition of acupuncture to treatment protocols is worthy of clinical promotion.

A total of 60 patients with stage 2–4 CHF were recruited for the study after admission to the hospital. The acupuncture group was comprised of 18 male and 12 female patients with a mean age of 72.5 years. The control group was comprised of 17 male and 13 female patients with a mean age of 71.9 years. There were no statistically significant differences in baseline characteristics between the two groups.

Medicine

Both groups were treated with a combination of medications and Chinese herbal medicine. Patients were prescribed digitalis, diuretics,

13. Middlekauff, Holly R., Kakit Hui, Jun Liang Yu, Michele A. Hamilton, Gregg C. Fonarow, Jaime Moriguchi, W. Robb MacLellan, and Antoine Hage. "Acupuncture inhibits sympathetic activation during mental stress in advanced heart failure patients." *Journal of cardiac failure* 8, no. 6 (2002): 399-406.

and vasodilators dependent upon individual needs. All patients in both groups received Sheng Mai intravenous fluid, comprised of Sheng Mai San in a dextrose solution. Treatment was administered once daily, with 14 days constituting one course of care. Patients assigned to the acupuncture observation group were also treated with acupuncture administered at the following acupoints:

- **Neiguan (PC6)**
- **Gongsun (SP4)**
- **Shenmen (HT7)**
- **Zusanli (ST36)**
- **Sanyinjiao (SP6)**
- **Auricular: Heart, Sympathetic, Shenmen**
- **For patients with a diagnosis of phlegm obstruction: Fenglong (ST40)**
- **For patients with blood stasis: Xuehai (SP10)**
- **For patients with qi stagnation: Taichong (LV3)**

Following standard insertion, needles were stimulated using a balanced reinforcing-reducing method and were retained for 20 minutes. Treatment was conducted once daily or twice a day for severe cases. Auricular points were treated with embedded needles which were changed daily, utilizing alternate ears. One course of treatment lasted 10–14 days.

Results

Outcome measures for the study included cardiac and renal function, as well as the treatment total effective rate for each group. Cardiac function was assessed by color doppler echocardiography, including EF (ejection fraction) and FS (fractional shortening). These measures indicate how effectively the ventricles are pumping blood with each contraction, with higher scores indicative of better cardiac function.

Mean pre-treatment EF scores were 38.9 in the control group and 39.3 in the acupuncture group. Following treatment, scores increased to 40.3 and 48.6 respectively. Although both groups saw improvements, these were significantly greater in the acupuncture group ($p < 0.01$).

Mean pre-treatment FS scores were 21.8 in the control group and 21.6 in the acupuncture group. Following treatment, scores increased to 24.7 and 27.3 respectively. Patients in the acupuncture group experienced significantly greater improvements ($p < 0.05$).

Renal function was assessed by measuring BUN (blood urea nitrogen) and creatinine. The levels of these markers tend to be higher in the blood of CHF patients due to reduced renal function. Potassium and sodium levels were also taken into consideration.

Mean pre-treatment BUN levels were 8.12 in the control group and 8.37 in the acupuncture group. Following treatment, these figures decreased to 7.38 and 7.35 respectively. The intergroup difference was modest but statistically significant, with greater improvements in the acupuncture group ($p < 0.05$).

Mean pre-treatment creatine levels were 175.67 in the control group and 163.3 in the acupuncture group. Following treatment, scores decreased to 152.39 and 121.86 respectively. Significantly greater improvements were seen in the acupuncture group ($p < 0.01$). No statistically significant differences were found between pre and post-treatment potassium or sodium levels in either group.

The treatment total effective rate was calculated using a 6 minute walking test for exercise tolerance and overall improvement in symptoms. For patients whose CHF improved by two or more stages, the treatment was classified as markedly effective. For patients whose CHF improved by one stage, the treatment was classified as effective. For patients showing no change or a deterioration in condition, the treatment was classified as ineffective.

In the control group, there were 26 effective and 4 ineffective cases, giving a total effective rate of 86.7%. In the acupuncture observation group, there were 28 effective and 2 ineffective cases, giving an effective rate of 93.3%. The intergroup difference was considered statistically significant by the research team ($p < 0.01$).

The results of the study indicates that acupuncture provides a useful adjunct to the treatment of congestive heart failure. It has the potential to improve cardiac and renal function, while enhancing patients' tolerance for exercise.

About Sheng Mai Intravenous Injection

Sheng Mai injection (SMI) is a form of Shengmai San, a traditional Chinese herbal formula. Sheng Mai injection "is widely used in various cardiovascular diseases, and at least three systematic reviews to date have been conducted to evaluate the effectiveness of SMI on heart failure, fatality rate of acute myocardial infarction, and hypotension after acute myocardial infarction." [2] Research indicates that this injection form of the herbal formula improves cardiac function, alleviates myocardial hypertrophy, improves contractility, and protects myocardial cells. [3]

References:

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3. Xu, S. H., and S. Y. Liu. "Progress on pharmacological effect of shengmai injection." *Chinese Pharmaceutical Affairs* 24, no. 4 (2010): 405-407.

Heart Theory

Let's take a moment to review basic heart theory in Chinese medicine because we just reviewed CHF. The following is a review of deficient and excess conditions with a focus on deficient conditions and their stages of progression.

Heart Syndromes

Heart Deficiency Syndromes

- Heart Qi Deficiency
- Heart Yang Deficiency
- Heart Yang Collapse
- Heart Blood (xue) Deficiency
- Heart Yin Deficiency

Heart Excess Syndromes

- Uprising Heart Fire
- Heart Blood Stagnation (including chest bi pain)
- Heart and Shen (spirit) Disturbed:
 - Phlegm Fire Confuses the Heart
 - Phlegm Misting the Heart
 - Shen Disturbance
 - Stroke

Now, let's look at heart deficiency syndromes in the context of a progression of illness in three stages. Patients often begin with heart qi deficiency, then later progress to heart yang deficiency, and eventually heart yang collapse.

3 Stages of Heart Deficiency

(in progression of severity)

Stage 1) Heart Qi Deficiency (shortness of breath)

Stage 2) Heart Yang Deficiency (pain of blood stagnation)

Stage 3) Heart Yang Collapse

Major symptoms of the above three deficiency syndromes:

- Palpitations
- Heart strength is not felt significantly
- Shortness of breath (puffing and never feeling as though there is enough oxygen)
- Tired
- Fatigue after movement

Heart Deficiency Syndromes

We will start with a more detailed review of the three stage progression listed above and then we will also review heart blood and yin deficiency.

Stage I) Heart Qi Deficiency

Tongue: puffy, tender, pale (deficiency tongue)

Pulse: deficient, pressing may make the heart pulse disappear, missed beats

Traditional Indications

Shortness of breath, palpitations, cardiac region pain, insomnia, face loses shen (spirit), poor memory, low vitality, tired, excessive or uncontrolled sweating

Key Indicator: shortness of breath and palpitations are aggravated by exertion

Pale: face, whole body, tongue (later, paleness becomes purple due to yang deficiency)

Classifications

- Any heart disease (atherosclerosis, valve disorders, hypertension, pulmonary heart disease, etc.)
- Psychosomatic (including fast heart beats, palpitations, chronic depression, neurasthenia)

Treatment

Tonify heart qi

Common Elements of Treatments

- Ren Shen (Chinese white ginseng), Huang Qi
- HT7, PC6, Ear Shenmen & Heart

Stage II) Heart Yang Deficiency

Tongue: wet, swollen, red & purple, pale

Pulse: deficient, slow, knotted, choppy, or sometimes intermittent (shows on EKG)

Traditional Indications

- Palpitations (may be severe), shortness of breath, cyanosis of the nails, chest pain, missed heart beats
- Chest pain (or uncomfortable) and angina
- Blood stasis due to yang deficiency: face and tongue are red, purple, or pale
- Heart qi deficiency syndrome symptoms, cold sweats, four limbs and body cold

- Heart affects spleen: cold feces

Classifications

- Heart qi deficiency disorders; however, usually not due to psychosomatic causes
- Low blood pressure, coronary heart disease, pulmonary emphysema or heart disease, hypertension, heart failure, cirrhosis of the liver
- Physical and organic changes of the heart, often wherein digitalis is employed in the treatment regimen

Treatment

Tonify heart yang, Warm the interior

Common Elements of Treatments

- Fu Zi (stimulate the heart beat), Gan Jiang, Sheng Jiang (ginger), Gui Zhi
- Acupuncture: similar to heart qi deficiency treatment

Stage III) Heart Yang Collapse

Tongue: pale and purple

Pulse: very irregular, deep, weak, scattered, no root, thready, fading

Traditional Indications

Qi unable to hold the sweat: profuse cold water sweating, even when not physically active

Breathing: uneven, weak, stops and starts (shock)

Shock: uncontrolled bowels and urine

Face loses shen (spirit) and eyes appear as in shock

Cold four limbs, chills

Pale: lips, face, tongue

Classifications

Potential for shock

Hospitalize and do not cause pain as it may cause shock

Treatment

PC6 (Neiguan) and distal points are inappropriate as the pain may cause shock.

Heart Blood Deficiency (xue xu)

Tongue: pale

Pulse: small, deficient/weak (especially in the heart position)

Traditional Indications

Anemia/deficiency: dizziness, pale face and tongue, fatigue, tired

Shen (spirit): forgetful, dream disturbed sleep, insomnia,
palpitations

If combined with yin deficiency: mental restlessness

Classifications

Anemia, amenorrhea, dysmenorrhea, low or high blood pressure

Treatment

- Tonify heart blood, sedate shen (spirit), nourish blood to benefit sleeping and thinking
- Common uses include acupoint HT7 and auricular point Shenmen

Heart Yin Deficiency

Tongue: fresh red, not much coating, red tip

Pulse: small, rapid

Traditional Indications

Rapid heart beat

Night sweating, thirsty, dry mouth, red cheeks, mental restlessness, palpitations

Shen (spirit): forgetful, insomnia, dream disturbed sleep

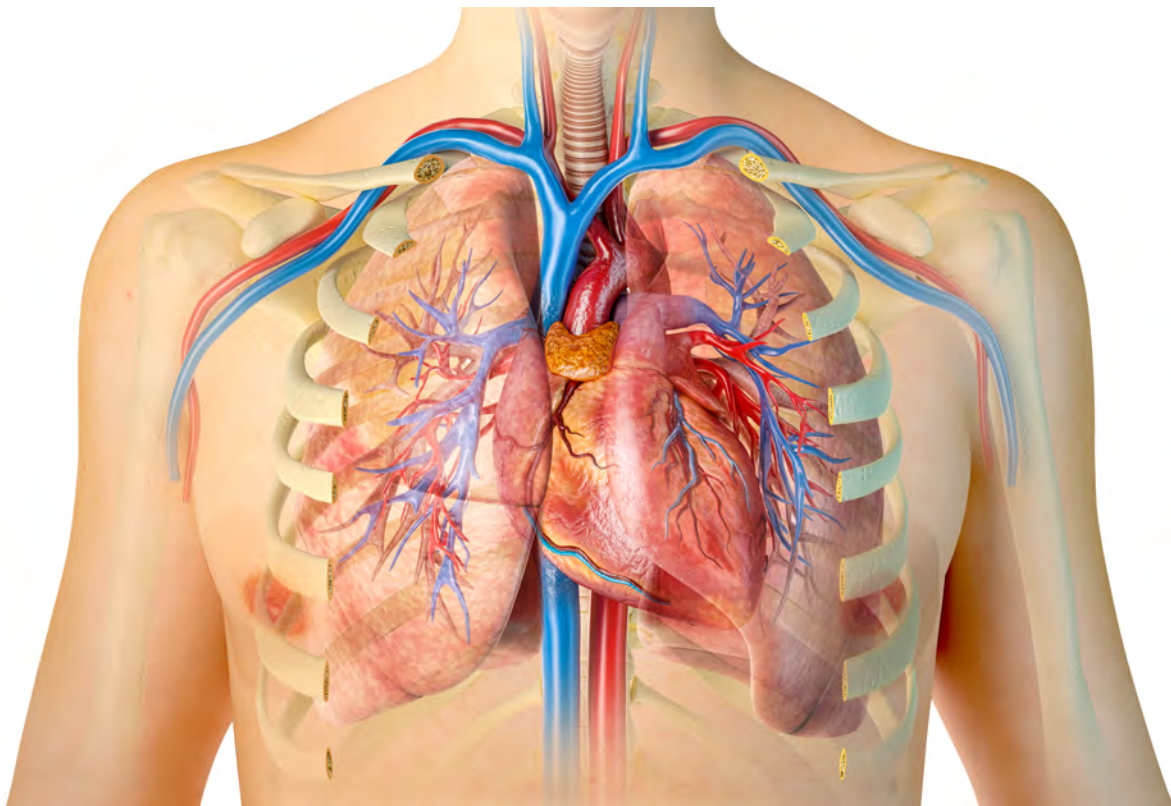
Classifications

High blood pressure, rapid heart beat due to SA to NA node excess signals, menopause complications, tuberculosis, hyperglycemia, estrogen imbalances, hyperthyroidism

Treatment

Tonify Heart Yin, Cool the Blood

Common herbs: Sheng Di Huang, Xuan Shen



Bradycardia

A heart rate that is slower than 60 beats per minute is termed bradycardia. Note: a resting heart rate slower than 60 beats per minute is normal in some people, especially for healthy adults and athletes.

This section covers acupuncture and herbal medicine for patients with a chronic heart beat rate of less than 45 beats per minute, dizziness, and low energy.

Diagnosis

Heart qi and yang deficiency

Pang family herbal formula

Ji Lin Shen	(Radix Ginseng, 人参)	9 grams
Huang Qi	(Radix Astragali Membranacei, 黄芪)	25 g
Ma Huang	(Herba Ephedrae, 麻黄)	3 g
Xi Xin	(Herba Asari Cum Radice, 细辛)	2 g
	<i>(use this herb where legal and appropriate)</i>	
Shu Fu Zi	(Radix Aconiti Lateralis Preparata, 附子)	6 g
	(cook for 20 minutes first)	
	<i>(use this herb where legal and appropriate)</i>	
Gan Jiang	(dried Rhizoma Zingiberis, 干姜)	9 g
Zhi Ke	(Fructus Citri Aurantii, 枳壳)	9 g
Zhi Gan Cao	(Radix Glycyrrhizae, 炙甘草)	9 g
Rou Gui Fen	(Cortex Cinnamomi Cassiae powder, 肉桂)	3 g
	(add directly to tea cup after pouring herb decoction and cover)	

Decoction Instructions

Cover the herbs with water plus 2–3 inches of additional water above the herb line in the pot. This is a large amount of herbs, so this formula can be boiled up to three times per bag. Each dose can be decocted and consumed separately. Alternatively, boil each bag three times and then mix the decocted herb tea from all three boilings. This creates a more even dosage. Then, separate the mixture into three doses. Drink one cup per day during periods of relative remission. During more serious states of the disease, drink one cup in the morning and one cup at night.

Individual Herbs

- Ji Lin Shen refers to ginseng (Ren Shen) grown in Jin Lin Province, where high quality ginseng is often produced. The recommendation for Ji Lin Shen is because it is usually milder than Korean ginseng (Gao Li Shen). The specific type of Ji Lin Shen that is recommended is Hong Shen (red ginseng), which is processed by steaming in rice wine and molasses. This process strengthens its properties of tonifying qi and yang and also extends the shelf life of the herb.

Hong Shen is warming and tonifies yuan qi (source qi), spleen and stomach qi, lung qi, and heart qi. This is useful for patients with heart qi deficiency and the herb helps to calm the shen (spirit) for these patients.

- Huang Qi tonifies qi and blood. It benefits spleen qi and raises the yang qi of the spleen and stomach. This herb strengthens wei qi and stabilizes the exterior, especially for cases of excessive sweating due to deficiency. Huang Qi promotes urination and eliminates edema. This herb promotes the discharge of pus, benefits flesh, and expels toxins, especially for chronic ulcerations. Huang Qi promotes the generation of body fluids and alleviates pain and numbness due to qi and blood deficiency.



Huang Qi

- Ma Huang warms and dispels cold pathogens, induces sweating and releases the exterior, stops wheezing and coughing, promotes urination, and reduces edema. This herb is often combined with Fu Zi for the treatment of edema due to yang deficiency. Care must be used, especially if patients are taking cardiovascular or anticonvulsant medications.
- Xi Xin is acrid, warming, and slightly toxic. Care must be used to limit the dosage and it should only be used where legal. Xi Xin releases the exterior, expels wind-cold, clears the nose, warms the lungs and transforms phlegm, heals oral ulcerations, and alleviates toothaches.
- Shu Fu Zi is acrid, very hot, and toxic. Do not combine this herb with Zhe Bei Mu, Tian Hua Fen, Gua Lou, Bai Ji, Zhi Ban Xia, Bai Wei, or Bai Lian. This herb is contraindicated during pregnancy. This herb is often incompatible with patients taking cardiovascular

medications and only use where legal.

Shu Fu Zi (prepared aconite root) is specifically prepared to reduce toxicity. It restores devastated yang due to yang collapse, especially for patients with diarrhea, chills, cold extremities, and a faint pulse. This herb warms the ming men fire and benefits the heart, kidney, and spleen yang. This herb warms the channels, stops pain, disperses cold, and alleviates dampness.

- Gan Jiang warms the middle jiao (burner) and expels the cold. This herb dispels wind-dampness affecting the lower jiao. This herb rescues devastated yang due to yang collapse and warms the interior to expel cold. This herb warms the lungs and transforms phlegm. Gan Jiang warms the channels and unblocks the pulse.
- Zhi Ke moves qi, reduces distention, and eliminates food stagnation. Applications include the treatment of abdominal distention, indigestion, and prolapse of the uterus.
- Zhi Gan Cao is sweet, warm, and enters all 12 primary channels, especially the spleen and lung channels. It moderates and harmonizes the characteristics of other herbs, tonifies the spleen qi, moistens the lungs, stops coughing, clears heat and detoxifies fire poisons, and soothes spasms. It is used for cases of deficient qi or blood patterns with an irregular or intermittent pulse or palpitations. Zhi Gan Cao is an antidote for certain toxic substance exposures, both internally and topically.
- Rou Gui is acrid, sweet, hot, and enters the kidney, spleen, liver, and bladder channels. Rou Gui warms the kidneys, fortifies yang, warms the middle, disperses cold, warms the channels, promotes menstruation, alleviates pain, leads the fire back to its source, and generates qi and blood.

Acupuncture

GV20 (Baihui)

GV20 is 7 cun above the posterior hairline, on the midpoint of the line connecting the apex of the auricles. GV20 is located at the vertex at the midpoint of the head. GV20 may be measured 8 cun posterior to the glabella or 6 cun superior to the occipital protuberance. GV20 is a Sea of Marrow point. GV20 calms the spirit, clears the senses, extinguishes liver wind, and stabilizes ascending yang. GV20 is indicated for treating hypertension, headaches, dizziness, tinnitus, nasal congestion, shock or coma, mental disorders, poor memory, palpitations, and prolapsed rectum or uterus.

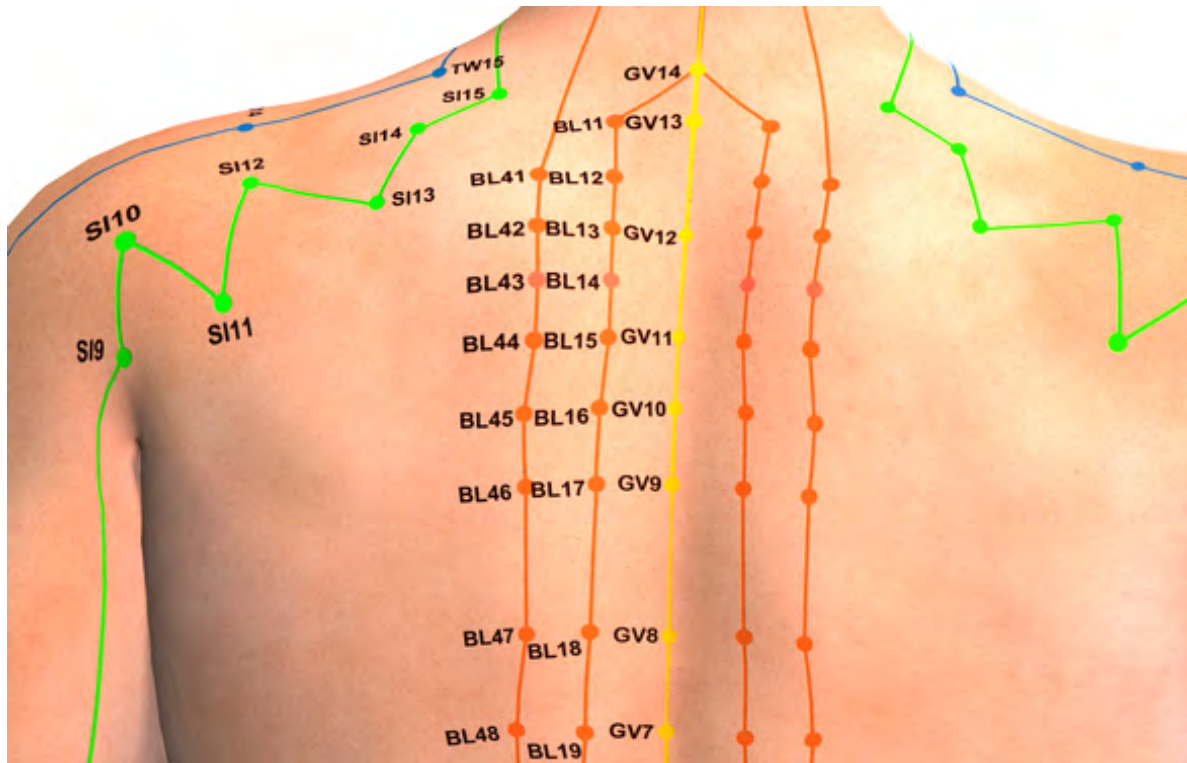
HT7 (Shenmen)

HT7 is located at the ulnar end of the transverse crease of the wrist, in the depression on the radial side of the tendon of the flexor carpi ulnaris. Use caution when needling this point to avoid the ulnar artery and ulnar nerve. HT7 is a shu-stream, earth, son, and source point.

HT7 calms the spirit, pacifies the heart, and the clears channels. Common indications for use include insomnia, mental illness, irritability, cognitive impairment, palpitations, epilepsy or seizures, hypochondriac region pain, icteric sclera, five palms heat, and jaundice.

BL15 (Xinshu)

This point is located 1.5 cun lateral to T-5, at the level of the lower border of the spinous process. Oblique or transverse-oblique insertion towards the spine is indicated. Avoid perpendicular or oblique needling away from the spine to avoid pneumothorax. BL15 is the heart back shu point. BL15 benefits the heart, calms the spirit, and regulates qi and blood. Common indications for use include cardiac or chest pain, cognitive disorders, mental illness, and night sweats.



PC5 (Jianshi)

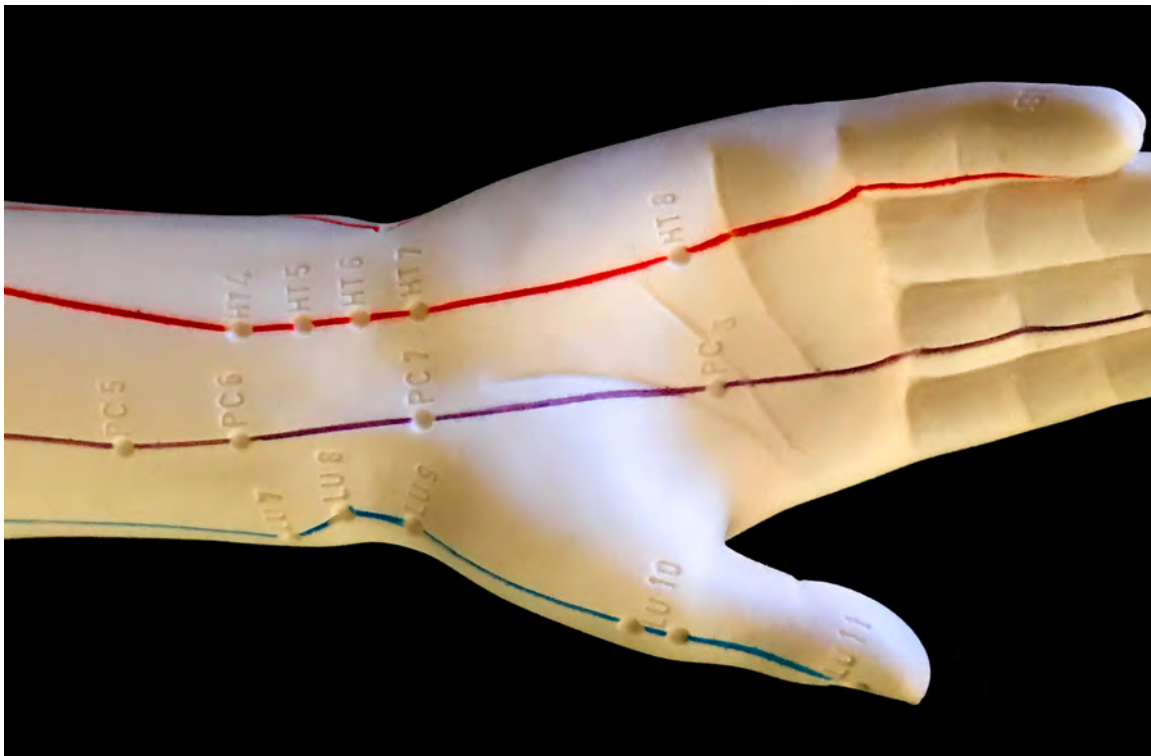
This acupoint is located 3 cun proximal to the transverse wrist crease, on a line connecting PC3 to PC7, between the tendons of the palmaris longus and flexor carpi radialis.

PC5 is a jing river and metal point. It is the meeting point for the three upper yin meridians. PC5 calms the spirit, harmonizes the stomach, and eliminates phlegm. Indications include cardiac or chest region pain, seizures (including epilepsy), stomachache, malaria, and mental disorders, febrile disorders (including tidal fevers and rheumatic heart disease).

PC6 (Neiguan)

This point is 2 cun above the transverse wrist crease, on the line connecting PC3 and PC7, between the tendons of the palmaris longus and flexor carpi radialis. PC6 is the luo (connecting) point of the pericardium channel. It is the confluent point of the Yinwei vessel (Yin Linking Vessel). PC6 regulates the heart, calms the spirit, regulates qi, suppresses pain, and harmonizes the stomach.

Common indications for use include: nausea, vomiting, hiccups, pain (cardiac, chest, elbow, upper arm, head, neck, stomach), mental illness, seizures due to epilepsy, insomnia, fever, palpitations, irregular menstruation, dysuria, postpartum dizziness. As a confluent point of the Yinwei vessel, this point is paired with the confluent point of the Chong (Thoroughfare) vessel (SP4). Together, PC6 and SP4 are indicated for the treatment of heart, chest, and stomach disorders.



ST36 (Zusanli)

This acupoint is 3 cun below ST35, one finger-breadth from the anterior crest of the tibia, in tibialis anterior. This point is lateral to a notch that is palpable on the tibia.

Zusanli (leg three measures) is a He Sea, earth, lower He Sea of the Stomach, and Sea of Nourishment point. ST36 is a Gao Wu command point and a Ma Dan-Yang heavenly star point. ST36 orders the spleen and stomach, regulates qi and blood, and tonifies qi. Common indications for usage include gastric pain, vomiting, abdominal distention, diarrhea, constipation, mastitis, breast abscesses, enteritis, gastritis, edema, asthma, general weakness, emaciation, anemia, indigestion, hemiplegia, neurasthenia, and mental disorders.



Auricular points: Shenmen, Heart, Sympathetic, Adrenal Gland, Subcortex. These acupoints can be needled during the course of a treatment or retained press tack needles are applicable.

PC5 – PC6 Research

University of California School of Medicine researchers demonstrate that electroacupuncture applied to PC5–PC6 produces “point-specific effects on cardiovascular reflex responses.”¹⁴ The researchers add that sympathetic cardiovascular rostral ventral lateral medulla neurons that respond to both visceral (reflex) and electroacupuncture nerve stimulation “manifest graded responses during stimulation of specific acupoints.”¹⁵

The researchers conclude that electroacupuncture “demonstrates a range of cardiovascular responses” and the levels of “visceral reflex pressor responses are influenced by the anatomic location of somatic nerves beneath the acupoints.”¹⁶ They identified specific responses; “deep nerves exerting strong influence and superficial cutaneous nerves demonstrating little or no attenuation of cardiovascular reflex responses.”¹⁷ The results were published in the *American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*.

The researchers note after testing multiple acupoints, including PC5 and PC6:

Electroacupuncture (EA) at P5–P6 acupoints overlying the median nerve reduces premotor sympathetic cardiovascular neuronal activity in the rostral ventral lateral medulla (rVLM) and visceral reflex pressor responses.... the present study demonstrates a range of cardiovascular responses to EA that result from stimulating different acupoints, thereby documenting point-specific responses. The levels of EA-related modulation of visceral reflex pressor responses are influenced by the anatomic location of somatic nerves beneath the acupoints, with deep nerves

14. Tjen-A-Looi SC, Li P, Longhurst JC (2004) Medullary substrate and differential cardiovascular responses during stimulation of specific acupoints. *Am J Physiol Regul Integr Comp Physiol* 287: R852-R862.

15. Ibid.

16. Ibid.

17. Ibid.

exerting strong influence and superficial cutaneous nerves demonstrating little or no attenuation of cardiovascular reflex responses. Brief stimulation (30 s) at acupoints or their underlying neural pathways as well as prolonged stimulation (30 min, EA) evoked a graded rVLM neuronal-evoked activity and inhibition of sympathoexcitatory activity. This study thus demonstrates the importance of specific cardiovascular reflex responses to selective acupuncture point stimulation during EA and suggests that differential input into the rVLM can, depending on the acupoints stimulated, inhibit cardiovascular and sympathoexcitatory medullary neuronal activity as one mechanism in the central nervous system that underlies this effect.¹⁸

In another investigation, the researchers from the University of California (Irvine) mapped the mechanisms by which acupuncture regulates blood pressure by measuring electroacupuncture from PC5 to PC6. The study demonstrates that acupuncture stimulates chemical reactions in the brain that modulates the nervous system. This gives acupuncture the ability to control both the heart rate and blood pressure. The researchers conclude that electroacupuncture normalizes “elevated and depressed blood pressure” and regulates both the blood pressure and heart rate through GABA receptor mechanisms that modulate the sympathetic nervous system and vagal excitation.¹⁹ The researchers note the following:

Electroacupuncture (EA) at P5–6 reduces sympathoexcitatory blood pressure (BP) reflex responses. Gamma-aminobutyric acid (GABA) receptors in the rostral ventral lateral medulla (rVLM) contribute to modulation of sympathoexcitatory visceral reflexes during EA. Gastric distension (GD) in hypercapnic acidotic (HA) rats, by activating both sympathetic and vagal afferents, decreases

18. Tjen-A-Looi SC, Li P, Longhurst JC (2004) Medullary substrate and differential cardiovascular responses during stimulation of specific acupoints. *Am J Physiol Regul Integr Comp Physiol* 287: R852-R862.

19. Tjen-A-Looi, Stephanie CheeYee, Peng Li, An-Fu Hsiao, and John C. Longhurst. "Central processing by electroacupuncture of cardiovascular reflex vasodepression." (2012): 702-2.

BP and heart rate (HR) through a GABAA mechanism in the rVLM. This study investigated the hypothesis that EA modulates GD-induced hemodynamic depressor responses through actions in nuclei that process both sympathetic and parasympathetic outflow.²⁰

They add:

Thus, EA through GABAA receptor mechanisms modulates reflex sympathoinhibition and vagal excitation leading to cardiovascular depression through actions in the rVLM, cVLM and NAmb. These data indicate that EA can normalize elevated and depressed blood pressure.²¹



20. Tjen-A-Looi, Stephanie CheeYee, Peng Li, An-Fu Hsiao, and John C. Longhurst. "Central processing by electroacupuncture of cardiovascular reflex vasodepression." (2012): 702-2.

21. Tjen-A-Looi, Stephanie CheeYee, Peng Li, An-Fu Hsiao, and John C. Longhurst. "Central processing by electroacupuncture of cardiovascular reflex vasodepression." (2012): 702-2.

Tachycardia

Definition

Tachycardia is a heart rhythm disorder (arrhythmia) wherein the heart beats faster than normal while at rest.²²

Tachycardia, conventionally defined as an atrial and/or ventricular rate of >100 beats per minute (bpm) has an arbitrary and debated definition. Nevertheless, tachycardia can be of importance, since it can cause myocardial ischemia, hypotension, low cardiac output, peripheral hypoperfusion, severe symptoms (chest pain, weakness, syncope, lightheadedness), cardiomyopathy, cardiac arrest and death.

Tachycardias can be broadly classified as: sinus tachycardia (appropriate physiologically and inappropriate); postural orthostatic tachycardia syndrome (POTS); supraventricular tachycardia (atrial tachycardia, AV nodal reentrant tachycardia and AV reentrant tachycardia); atrial flutter with rapid ventricular response; atrial fibrillation with rapid ventricular response; junctional tachycardia; or ventricular tachycardia.²³

Hyperactive Heart Yang Tachycardia

A common presentation of tachycardia is due to hyperactivity of heart yang. Common presentations of heart yang pathologically floating upwards include tachycardia, palpitations, insomnia, and mental restlessness. Yin fails to nourish the heart due to yin and blood

22. [mayoclinic.org/diseases-conditions/tachycardia/symptoms-causes/syc-20355127](https://www.mayoclinic.org/diseases-conditions/tachycardia/symptoms-causes/syc-20355127). 9-17-2019.

23. Gopinathannair, Rakesh, and Brian Olshansky. "Management of tachycardia." *F1000prime reports* 7 (2015).

deficiency. Yin deficiency heat disturbs the chest and often results in mental restlessness. This presentation often results from excess stimulation and output from the sympathetic nervous system (SNS).

Diagnosis

Heart yang floating upwards

Treatment

Anchor the yang, Tonify qi

Pang family herbal formula

This herbal formula tonifies qi and anchors the floating yang. The herbs Ku Shen and Bai Zi Ren have a special function to slow the heart rate.

Dang Shen	(Radix Codonopsis Pilosulae, 党参)	12 grams
Gan Jiang	(Dried Rhizoma Zingiberis, 干姜)	2 g
Mai Men Dong	(Ophiopogon Root Tuber, 麦门冬)	12 g
Rou Gui Fen	(Cortex Cinnamomi Cassiae powder, 肉桂)	1 g
	<i>put the cinnamon powder in the tea cup with cover</i>	
Sheng Di Huang	(Rehmannia Root, 地黄)	12 g
Ku Shen	(Radix Sophorae Flavescens, 苦参)	12 g
Huo Ma Ren	(Semen Cannabis Sativae, 火麻仁)	15 g
(Si Chuan) Huang Lian	(Rhizoma Coptidis, 黄连)	4 g
Fu Ling	(Sclerotum Poriae Cocos, 茯苓)	30 g
Bai Zi Ren	(Semen Platycladi, 柏子仁)	12 g
Long Gu	(Os Draconis, 龙骨)	30 g
Zhi Gan Cao	(Radix Glycyrrhizae, 炙甘草)	10g

Decoction Instructions

Cover the herbs with water plus 2–3 inches of additional water above the herb line in the pot. This is a large amount of herbs, so this formula can be boiled up to three times per bag. Each dose can be decocted and consumed separately. Alternatively, boil each bag three times and then mix the decocted herb tea from all three boilings. This creates a more even dosage. Then, separate the mixture into three doses. Drink one cup per day during periods of relative remission. During more serious states of the disease, drink one cup in the morning and one cup at night.

Individual Herbs

Dang Shen

Dang Shen is sweet, neutral, and enters the lung and spleen channels. This herb tonifies the middle jiao (burner) and tonifies lung and spleen qi. Dang Shen nourishes blood and promotes the generation of bodily fluids.

Gan Jiang

Gan Jiang is spicy, hot, and enters the heart, lung, spleen, and stomach channels. Gan Jiang warms the middle jiao, expels cold, dispels wind-dampness affecting the lower jiao (burner), rescues devastated yang, warms the lungs, transforms phlegm, warms the channels, and stops bleeding due to deficiency and cold.

Mai Men Dong

Mai Men Dong is sweet, slightly bitter, cool, and enters the spleen, stomach, heart, and lung channels. This herb moistens the lungs, nourishes lung yin, stops coughing, nourishes stomach yin and generates fluids, and moistens the intestines. Mai Men Dong clears the heart and eliminates irritability, especially in cases of ying stage heat and yin deficiency with fever and irritability that worsens at night.

Rou Gui Fen

Rou Gui warms the interior and expels cold. Rou Gui warms the kidneys, spleen, and heart. Rou Gui fortifies yang and ming men fire. Rou Gui leads the fire back to the source for cases of heat in the upper part of the body and cold in the lower part of the body wherein there is upward floating of yang deficiency (true cold, false heat).

Sheng Di Huang

Sheng Di Huang is sweet, bitter, and cold and enters the heart, kidney, and liver channels. This herb clears heat and cools the blood, nourishes yin, generates fluids, and cools heart fire. Indications for use include ying stage heat with fever, blood level heat, heart yin deficiency with heat, heart fire, and mouth sores.

Ku Shen

Ku Shen is bitter, cold and enters the bladder, heart, liver, large intestine, and small intestine channels. This herb eliminates heat, dries dampness, stops wind and itching, kills parasites, and promotes urination. Indications for use include damp skin toxins, urinary tract infections, jaundice, leukorrhea, and dysentary.

Huo Ma Ren

Huo Ma Ren (cannabis seeds) are sweet, neutral, and enter the large intestine, spleen, and stomach channels. This herb moistens the intestines (treats large intestine yin or blood deficiency constipation), clears heat and mildly promotes the healing of sores (either internally or topically when mixed with other herbs), and moistens dryness (treats dry hair and promotes hair growth).

Huang Lian

Huang Lian is bitter, cold, and enters the heart, large intestine, liver, and stomach channels. This herb drains fire, alleviates toxicity, drains dampness and clears heat, calms heart fire, clears heat and stops bleeding. Huang Lian is used topically for heat in the eyes, tongue, or mouth.

Fu Ling

Fu Ling has a neutral to warm temperature and is sweet and bland. Fu Ling enters the heart, spleen, kidney, lungs, bladder, and stomach channels. Fu Ling promotes urination and leaches out dampness and is especially useful for the treatment of fluid stagnation. Fu Ling strengthens the spleen and harmonizes the middle jiao (burner) and is useful for the treatment of spleen deficiency related dampness. Fu Shen, a variety of Fu Ling, is useful for calming the shen (spirit) and heart.

Bai Zi Ren

This herb is sweet, neutral, and enters the heart, kidney, and large intestine channels. Bai Zi Ren nourishes the heart, calms the spirit, moistens the intestines, and astringes yin deficiency sweating. Indications for use include insomnia, poor memory, anxiety, palpitations, and constipation.

Long Gu

Long Gu is sweet, astringent, and neutral. This herb enters the heart, kidney, and liver channels. Long Gu calms the heart and shen (spirit), subdues liver yang rising, and preserves body fluids and prevents leakage. Indications for use include palpitations, insomnia, anxiety, moodiness, irritability, poor memory, dizziness, vertigo, blurry vision, spontaneous sweating, night sweats, leukorrhea, abnormal uterine bleeding, spermatorrhea, premature ejaculation, and diarrhea.

Zhi Gan Cao

Zhi Gan Cao (honey fried licorice root) harmonizes herbs within formulas and moderates their functions, tonifies spleen qi and heart qi, benefits heart yang, moistens the lungs, alleviates spasms of the legs and abdomen, clears heat and fire toxins (for the treatment of sores and carbuncles), and is antidote (externally and internally) for many toxic substances.

Acupuncture

Point Selection: HT7, PC6, ST36, SP6, LV3, GV20, Yintang

Apply mild stimulation, every 10 minutes, for 1 hour.

Auricular points: Shenmen, Heart, Sympathetic, Liver

Individual Points

HT7 (Shenmen)

HT7 is located at the ulnar end of the transverse crease of the wrist, in the depression on the radial side of the tendon of the flexor carpi ulnaris. Use caution when needling this point to avoid the ulnar artery and ulnar nerve. HT7 is a shu stream, earth, son, and source point. HT7 calms the spirit, pacifies the heart, and the clears channels. Common indications for use include insomnia, mental illness, irritability, cognitive impairment, palpitations, epilepsy or seizures, hypochondriac region pain, icteric sclera, five palms heat, and jaundice.

Neiguan, PC6 (Inner Pass)

This point is 2 cun above the transverse wrist crease, on the line connecting PC3 and PC7, between the tendons of the palmaris longus and flexor carpi radialis.

PC6 is the luo (connecting) point of the pericardium channel. It is the confluent point of the Yinwei vessel (Yin Linking Vessel). PC6 regulates the heart, calms the spirit, regulates qi, suppresses pain, and harmonizes the stomach. Common indications for use include: nausea, vomiting, hiccups, pain (cardiac, chest, elbow, upper arm, head, neck, stomach), mental illness, seizures due to epilepsy, insomnia, fever, palpitations, irregular menstruation, dysuria, postpartum dizziness.

As a confluent point of the Yinwei vessel, PC6 is paired with SP4, which is the confluent point of the Chong (thoroughfare) vessel. Together, PC6

and SP4 are indicated for the treatment of heart, chest, and stomach disorders.

ST36 (Zusanli)

This acupoint is 3 cun below ST35, one finger-breadth from the anterior crest of the tibia, in tibialis anterior. This point is lateral to a notch that is palpable on the tibia. Zusanli (leg three measures) is a He Sea, earth, lower He Sea of the Stomach, and Sea of Nourishment point. ST36 is a Gao Wu command point and a Ma Dan-Yang heavenly star point. ST36 orders the spleen and stomach, regulates qi and blood, and tonifies qi. Common indications for usage include hypertension, gastric pain, vomiting, abdominal distention, diarrhea, constipation, mastitis, breast abscesses, enteritis, gastritis, edema, asthma, general weakness, emaciation, anemia, indigestion, hemiplegia, neurasthenia, and mental disorders.

SP6 (Sanyinjiao)

SP6 is 3 cun directly above the tip of the medial malleolus, on the posterior border of the medial aspect of the tibia. Sanyinjiao is translated as 3 yin junction; this point is the meeting of the 3 lower yin meridians. SP6 strengthens the spleen, transforms dampness, spreads liver qi, and benefits the kidneys. SP6 is an important acupuncture point in obstetrics and gynecology. Indications for use include: dysmenorrhea, irregular menstruation, abnormal uterine bleeding, leukorrhea, prolapse of uterus, infertility, difficult or delayed labor. Other common indications for use include: abdominal pain and distention, diarrhea, nocturnal emissions, enuresis, dysuria, lower limb atrophy, lower limb motor impairment or hemiplegia, vertigo from blood deficiency (xue xu), insomnia.

LV3 (Taichong)

This point is located on the dorsum of the foot in the depression distal to the junction of the first and second metatarsal bones. LV3 is a shu stream, earth, and source point. LV3 pacifies the liver, regulates blood, and opens the channels. Common indications for use include: headache, vertigo, insomnia, irregular menstruation, abnormal uterine bleeding, extremity and joint pain, eye pain, rib pain, retention of urine or enuresis.

GV20 (Baihui)

GV20 is 7 cun above the posterior hairline, on the midpoint of the line connecting the apex of the auricles. GV20 is located at the vertex at the midpoint of the head. GV20 may be measured 8 cun posterior to the glabella or 6 cun superior to the occipital protuberance. GV20 is a Sea of Marrow point. GV20 calms the spirit, clears the senses, extinguishes liver wind, and stabilizes ascending yang. GV20 is indicated for treating hypertension, headaches, dizziness, tinnitus, nasal congestion, shock or coma, mental disorders, poor memory, palpitations, and prolapsed rectum or uterus.

Yintang (MHN-3)

Yintang is located at the glabella, at the midpoint between the medial extremities of the eyebrows. This point calms the wind and shen (spirit), benefits the nose and face, activates the channels, and alleviates pain. Indications include hypertension, headaches, anxiety, irritability, mental restlessness, dizziness, infantile convulsions, nasal congestion, rhinitis, epistaxis, eye disorders, and facial pain.

Tachycardia Case History

Male, Age 23

First office visit on the first week of May in 1983:

The patient presented with a resting heart rate of 105 beats/minute that has lasted for five weeks. The patient also has palpitations. He notes that he smokes tobacco, drinks alcohol excessively, and indulges in occasional drug use. His pulse was flooding and rapid on the right and small, wiry, and rapid on the left. The tongue was pale, tender with teethmarks, and had no coating.

Treatment: tachycardia treatment with acupuncture and herbs as described in this section on tachycardia.

After several treatments and by the first week of June, the heart beat reduced to 90 beats/minute. An additional three weeks of treatment was administered and the heart rate reduced to 75 beats/minute. Upon follow-up, no recurrence of tachycardia occurred.

Coronary Heart Disease

Definition

Coronary heart disease is caused by the buildup of plaque, a waxy substance, inside the coronary arteries. This buildup can partially or totally block blood flow in the large arteries of the heart. Some types of this condition may be caused by disease or injury affecting how the arteries work in the heart.²⁴

Lifestyle

Unhealthy lifestyle habits including fast food, greasy and saturated fat foods, foods lacking fiber, smoking, stress, and lack of exercise contribute to development of this condition.

TCM Differential Diagnosis

Phlegm and blood stasis blocking vessels of the heart

Pang Family Herbal Formula

Tao Ren	(Semen Pruni Persicae, 桃仁)	9 g
Hong Hua	(Flos Carthami, 红花)	4.5 g
San Qi	(Radix Pseudoginseng, 三七)	12 g
Ze Lan	(Herba Lycopi Lucidi, 泽兰)	9 g
Dan Shen	(Radix Salviae Miltiorrhizae, 丹参)	9 g
Dang Gui Wei	(Radix Angelicae Sinensis, 当归尾)	9 g
Hou Po	(Cortex Magnoliae Officinalis, 厚朴)	6 g

24. [nhlbi.nih.gov/health-topics/ischemic-heart-disease](https://www.nlm.nih.gov/health-topics/ischemic-heart-disease), 10-23-2019.

Mao Dong Qing	(Radix Ilicis Pubescentis, 毛冬青)	18 g
Mu Dan Pi	(Cortex Radicis Moutan, 牡丹皮)	9 g
Chi Shao	(Radix Rubrus Paeoniae Lactiflorae, 赤芍)	9 g
Xie Bai	(Bulbus Allii, 薤白)	6 g
Yu Jin	(Tuber Curcumae, 郁金)	9 g
Zhi Gan Cao	(Radix Glycyrrhizae, 炙甘草)	6g
Wu Yao	(Radix Linderae Strychnifoliae, 乌药) (add last 5 min.)	3g

Individual Herbs In The Formula

Tao Ren

Tao Ren is neutral, bitter, sweet and enters the heart, large intestine, liver, and lung channels. Tao Ren breaks blood stasis, invigorates blood, moistens and unblocks the intestine, and drains abscesses.

Hong Hua

Hong Hua is spicy, warm, and enters the heart and liver channels. Hong Hua invigorates the blood, dispels blood stasis, regulates the menses, nourishes blood, and opens the channels.

San Qi

San Qi is slight bitter, sweet, warm, and enters the liver and stomach channels. San Qi stops bleeding, transforms blood stasis, and invigorates the blood. San Qi reduces swelling and alleviates pain.

Ze Lan

Ze Lan is bitter, warm, aromatic, and enters the liver and spleen channels. Ze lan invigorates the blood, dispels blood stasis, promotes urination, and reduces swelling.

Dan Shen

Dan Shen is bitter, cold, and enters the heart, pericardium, and liver channels. Dan Shen invigorates blood, dispels blood stasis, clear heat,

soothes irritability, cools the blood, reduces abscesses, nourishes the blood, and calms the spirit.

Dang Gui Wei

Dang Gui Wei is sweet, acrid, bitter, warm and enters the heart, liver, and spleen. Known as Dang Gui tail, this part of Dang Gui is the least tonifying and the most effective at invigorating the blood. Dang Gui Wei invigorates and harmonizes the blood and disperses cold.

Hou Po

Hou Po is bitter, acrid, aromatic, warm and enters the large intestine, lung, spleen, and stomach channels. This herb moves the qi in the middle jiao (burner), resolves food stagnation, promotes the movement of qi downwards, dries dampness, transforms phlegm, descends rebellious qi, and calms wheezing.

Mao Dong Qing

Mao Dong Qing is bitter, acrid, astringent, slightly cold to neutral, and enters the heart and spleen channels. This herb invigorates blood and unblocks channels, especially for heart blood stasis with chest pain or post-stroke syndrome with hemiplegia. Mao Dong Qing clears heat, resolves toxins, and stops coughing, especially for lung heat and wind-heat coughing with a swollen and painful throat. Topically, this herb is used as a powder to treat burns.

Mu Dan Pi

Mu Dan Pi is spicy, bitter, cool, and enters the heart, liver, and kidney channels. Mu Dan Pi clears heat, cools the blood, invigorates the blood, clears yin deficiency heat, calms liver fire, reduces intestinal abscess swelling, and is used topically to reduce swellings.

Chi Shao

Chi Shao is sour, bitter, slight cold, and enters the liver and spleen channels. Chi Shao clears heat, cools the blood, invigorates the blood, removes blood stasis, and clears liver fire.

Xie Bai

Xie Bai is spicy, bitter, warm, and enters the large intestine, lung, and stomach channels. Xie Bai unblocks yang qi and disperses cold phlegm stagnation. This function is used for patients with angina, dyspnea, coughing, wheezing, generalized chest pain, and upper back pain. Xie Bai directs qi downwards and eliminates stagnation, which is why it is used for the treatment of diarrhea and dysentery.

Yu Jin

Yu Jin is spicy, bitter, and cold and enters the heart, lung, liver, and gallbladder channels. Yu Jin moves qi and blood, stops pain, clears heat and cools the blood, clears and opens the heart orifice, benefits the gallbladder, and is used for the treatment of jaundice.

Zhi Gan Cao

This herb enters all twelve main channels. It harmonizes formulas and moderates the function of other herbs, tonifies the spleen, clears heat and toxins, moistens the lungs, and stops spasms and pain. Indications include fatigue, cramping and pain of smooth muscle tissue, chronic cough, loose stools, poor appetite, and skin lesions. Zhi Gan Cao is honey-processed Gan Cao. It is sweet, warm, and has a greater tonify spleen function and moisten the lungs function than Gan Cao. Internally and topically, this herb is used as an antidote to many toxic substances.

Wu Yao

Wu Yao is spicy, warm, and enters the bladder, kidney, lung, and spleen channels. Wu Yao move qi, alleviates pain, warms the kidneys, and disperses cold.

Acupuncture

Point Selection

GV9, BL15, CV17, PC6, ST36, SP6

Auricular: Shenmen, Heart, Sympathetic, Liver, Chest

Individual Acupoints

GV9 (Zhiyang, Reaching Yang)

This point is located on the midline below the spinous process of T-7, approximately level with the inferior angle scapula. The spinal canal is approximately 1.25–1.75 cun below this acupoint, use caution when needling. GV9 regulates the qi, benefits the spleen, transforms damp-heat, and expands the chest and diaphragm. Indications include cholecystitis, back pain, cough, asthma, and jaundice. This acupoint is level with DU17 (Diaphragm Shu), reflecting its ability to treat the lungs.

BL15 (Xinshu, Heart Shu)

This point is located 1.5 cun lateral to T-5, at the level of the lower border of the spinous process. Oblique or transverse-oblique insertion towards the spine is indicated. Avoid perpendicular or oblique needling away from the spine to avoid pneumothorax. BL15 is the heart back shu point. BL15 benefits the heart, calms the spirit, and regulates qi and blood. Common indications for use include cardiac or chest pain, cognitive disorders, mental illness, and night sweats.

CV17 (Shangqihai, Upper Sea of Qi)

This acupoint is located on the midline of the sternum, in a depression level with the junction of the fourth intercostal space and the sternum (midway between the nipples). CV17 is the front mu point of the pericardium, Sea of Qi point, and the influential point of qi. The spleen,

kidney, small intestine, and sanjiao (triple burner) channels meet at this acupoint. CV17 regulates and suppresses rebellious qi, expands the chest, and benefits the diaphragm. Common indications for usage include chest oppression, shortness of breath, breast disorders, asthma, chest pain, insufficient lactation, difficulty swallowing, and palpitations.

PC6 (Neiguan, Inner Pass)

This point is 2 cun above the transverse wrist crease, on a line connecting PC3 and PC7, between the tendons of the palmaris longus and flexor carpi radialis.

PC6 is the luo (connecting) point of the pericardium channel. It is the confluent point of the Yinwei vessel (Yin Linking Vessel). PC6 regulates the heart, calms the spirit, regulates qi, suppresses pain, and harmonizes the stomach. Common indications for use include: nausea, vomiting, hiccups, pain (cardiac, chest, elbow, upper arm, head, neck, stomach), mental illness, seizures due to epilepsy, insomnia, fever, palpitations, irregular menstruation, dysuria, postpartum dizziness.

As a confluent point of the Yinwei vessel, PC6 is paired with SP4, which is the confluent point of the Chong (thoroughfare) vessel. Together, PC6 and SP4 are indicated for the treatment of heart, chest, and stomach disorders.

ST36 (Zusanli, Leg Three Miles)

This acupoint is 3 cun below ST35, one finger-breadth from the anterior crest of the tibia, in tibialis anterior. This point is lateral to a notch that is palpable on the tibia.

Zusanli (leg three measures) is a He Sea, earth, lower He Sea of the Stomach, and Sea of Nourishment point. ST36 is a Gao Wu command point and a Ma Dan-Yang heavenly star point. ST36 orders the spleen

and stomach, regulates qi and blood, and tonifies qi.

Indications for use include hypertension, gastric pain, vomiting, abdominal distention, diarrhea, constipation, mastitis, breast abscesses, enteritis, gastritis, edema, asthma, general weakness, emaciation, anemia, indigestion, hemiplegia, neurasthenia, and mental disorders.

SP6 (Sanyinjiao, Three Yin Junction)

SP6 is 3 cun directly above the tip of the medial malleolus, on the posterior border of the medial aspect of the tibia. Sanyinjiao is translated as 3 yin junction; this point is the meeting of the 3 lower yin meridians.

SP6 strengthens the spleen, transforms dampness, spreads liver qi, and benefits the kidneys. SP6 is an important acupuncture point in obstetrics and gynecology. Indications for use include: dysmenorrhea, irregular menstruation, abnormal uterine bleeding, leukorrhea, prolapse of uterus, infertility, difficult or delayed labor.

Other common indications for use include: abdominal pain and distention, diarrhea, nocturnal emissions, enuresis, dysuria, lower limb atrophy, lower limb motor impairment or hemiplegia, vertigo from blood deficiency (xue xu), insomnia.

Coronary Heart Disease Case History

- Male, age 36
- First visit: September 1992
- Main complaint: MD reports this patient has had coronary heart disease for a duration of 9 years
- Digital subtraction angiography (DSA) of the coronary artery finds 90% occlusion. Remaining arteries have 30–40% occlusion.
- Family history: patient's father died from a heart attack at age 52
- Total cholesterol: 240
- Pulse: deep, tight, no root
- Tongue: pale, purple spots on the front left region

The patient notes he feels pressure and pain on his chest. He complains of chronic anxiety. The patient received the Pang family herbal formula for the treatment of coronary heart disease. The herbal formula was prescribed for one bag per day, drinking the herbal formula decoction two times per day. One acupuncture visit per week was administered with the Pang family acupoint prescription.

By October of 1992, the total cholesterol reduced to 180. The patient's symptoms significantly reduced. By April of 1993, the patient's MD noted that he no longer required a stent procedure for the arteries.

CHD Related Research

Coronary Heart Disease Risk

Researchers conclude that acupuncture reduces the risk of coronary heart disease in patients diagnosed with fibromyalgia. A massive sample size of over 158,420 patients with fibromyalgia were included in the study. A total of 81,843 patients received acupuncture treatments and 76,582 patients never received acupuncture. A total of 12,522 patients developed coronary heart disease during the follow-up period. Only 4,389 patients receiving acupuncture developed coronary heart disease but 8,133 patients that did not receive acupuncture developed coronary heart disease. The researchers conclude that acupuncture “significantly decreased the risk of CHD [coronary heart disease] in patients with fibromyalgia with or without comorbidities.”

The researchers note that acupuncture decreased the risk of coronary heart disease equally for both men and women. The risk of coronary heart disease increased with the age of patients; however, acupuncture decreased risks across all age groups. In addition, acupuncture decreased the risk of coronary heart disease regardless of whether or not patients took steroid medications, NSAIDs (nonsteroidal anti-inflammatory drugs), or statins.

Patients receiving acupuncture averaged a total of 7.45 acupuncture sessions. A total of 85% of patients received manual acupuncture, 3.6% received electroacupuncture, and 10.7% received both manual acupuncture and electroacupuncture treatments. The duration of needle retention time averaged between 20 – 30 minutes per acupuncture session. The elicitation of deqi was a basic requirement by the TCM (Traditional Chinese Medicine) doctors.

Most TCM doctors applying acupuncture in the study had a baccalaureate degree from a 7–8 year medical doctor program of study. A smaller number of TCM doctors had a post-baccalaureate TCM degree from a 5 year medical doctor program. Acupuncture point selection was individualized based upon differential diagnostics. The researchers note that this differs from the majority of research wherein there is a protocolized, fixed set of acupuncture points assigned to all patients.

The researchers note that prior independent investigations demonstrate that

acupuncture is effective for the treatment of fibromyalgia. This study did not investigate clinical efficacy towards alleviation of fibromyalgia itself, but rather investigated whether or not acupuncture prevents coronary heart disease in patients diagnosed with fibromyalgia. **The researchers conclude that “the incidence of CHD was significantly lower in the acupuncture cohort than in the no-acupuncture cohort.”**

The researchers provided several prior investigative findings concerning the effects of acupuncture to provide insight into its possible mechanisms of therapeutic action for the prevention of coronary heart disease in fibromyalgia patients. Prior research demonstrates that acupuncture prevents cardiac injury for patients with acute myocardial infarction. **They add, “Acupuncture also decreased myocardial infarct areas and preserved cardiac function through heat shock protein 20 (HSP20) and HSP27 in an animal study.”** Both studies indicate that acupuncture is effective in protecting the heart from ischemia.

The researchers cite this interest in acupuncture’s ability to protect the heart from damage because pregabalin was the first FDA approved medication for the treatment of fibromyalgia. Pregabalin has been proven to reduce pain, improve sleep, and reduce fatigue in patients with fibromyalgia. The researchers note that “pregabalin has cardiac adverse effects because it may induce heart failure” and acupuncture attenuates “both ischemic injury of the heart and heart failure.” Based on these findings, the researchers recommend a study to determine if acupuncture ameliorates the adverse effects of pregabalin in an effort to reduce risks associated with drug therapy.

The researchers note that the prevention of coronary heart disease may be due to acupuncture’s ability to improve sleep quality. The research team cited prior research demonstrating acupuncture’s ability to alleviate insomnia. They add that insomnia is “highly associated with fibromyalgia and CHD.”

Common fibromyalgia comorbidities (e.g., hypertension, diabetes, heart disease) are associated with elevated levels of systemic inflammation. The researchers note that the prevention of coronary heart disease may be due to acupuncture’s ability to reduce inflammation. The researchers note, “Many previous studies of acupuncture were focused on the analgesic effect of

acupuncture, but additional studies in recent years demonstrated that acupuncture attenuated inflammation. Acupuncture attenuated inflammation through the vagus nerve mediated by dopamine.”

University of Minnesota

University of Minnesota researchers demonstrate that acupuncture is effective for the treatment of cardiac arrhythmias. The researchers note that acupuncture has an 87% – 100% success rate for converting patients to a “normal sinus rhythm after acupuncture.”

Beijing University

Beijing University researchers produced similar findings. **They concluded that “CA [conventional acupuncture] may be a useful and safe alternative or additive approach to AADs [anti-arrhythmia drugs] for cardiac arrhythmia, especially in VPB [ventricular premature beat] and Af [atrial fibrillation] patients, which mainly based on a pooled estimate and result from 1 study with higher methodological quality.”** Zhu et al. demonstrated that acupuncture prevents damage to the heart in laboratory studies. They conclude that acupuncture reduces the severity of “focal interrupted cardiomyocytes, myolysis, interstitial edema and increased extracellular space.”

UCLA

UCLA (University of California, Los Angeles) researchers conclude that acupuncture protects the heart. Electroacupuncture applied to acupuncture points PC6 and PC5 in anesthetized rabbits with coronary artery occlusion resulted in less ventricular arrhythmias. Electroacupuncture also decreased heart infarct size. Additionally, the UCLA researchers demonstrated that electroacupuncture stimulation causes a decrease in left ventricle dysfunction. Furthermore, a decrease in harmful ST segment elevation was demonstrated.

According to the US Centers for Disease Control and Prevention, approximately 610,000 people die from heart disease in the USA annually. This accounts for 25% of all deaths. It is the leading cause of death for both men and women. Coronary heart disease is the most common form of heart disease and is responsible for 370,000 deaths annually in the USA. Given the results of research demonstrating that acupuncture exerts cardioprotective effects, further research is warranted based on the needs of the population

and the existing clinical and laboratory evidence.

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Single Photon Emission Computed Tomography

An acupuncture study from the Department of Nuclear Medicine at Peking University Shenzhen Hospital successfully measured improvements in blood flow to the heart for patients with coronary heart disease (CHD).

Using single photon emission computed tomography (SPECT), researchers discovered that needling two specific acupuncture points caused significant improvements in patients with CHD. Acupuncture successfully increased “blood perfusion of ischemic myocardium.”

Coronary heart disease is due to plaque build-up in the walls of the coronary arteries, a condition known as atherosclerosis. This build-up can narrow the coronary arteries and lead to a decrease of oxygen rich blood flow to the heart. Myocardial ischemia, a condition wherein blood flow to the heart is decreased due to a blockage of the coronary arteries, can cause damage to the heart, arrhythmias, angina or even a heart attack. Conventional treatments to improve blood flow to the heart muscle include medications and surgical procedures. The new findings demonstrate that acupuncture has the ability to improve blood flow to the heart.

The study included a total of 59 patients with CHD. They were randomly assigned to 2 groups. Group 1 consisted of 32 patients and group 2 consisted of 27 cases. Group 1 received acupuncture and group 2 received nitroglycerine, a substance used in the treatment of angina, chronic heart failure, heart attacks and other heart conditions. Nitroglycerine converts to nitric oxide, a potent vasodilator. It widens the blood vessels and improves blood flow to the heart.

The acupuncture procedure used in the study consisted of electroacupuncture applied bilaterally to both PC6 (Neiguan) and BL15 (Xinshu). The acupuncture needles were retained for 30 minutes with an electroacupuncture frequency setting between 2 - 15 Hz at a strength of 9 - 18 mA. PC6 is located 2 cun, a cun is approximately 1 inch, above the transverse crease of the wrist, between the tendons of

the palmaris longis and flexor carpi radialis. BL15 is located 1.5 cun lateral to T-5, at the level of the lower border of the spinous process.

According to Traditional Chinese Medicine (TCM) theory, PC6 is a Luo-connecting point and a confluent point of the Yin Wei channel. PC6 calms the heart and shen, regulates Qi and suppresses pain. Traditional indications include: cardiac/chest pain, palpitations, stomachache, nausea, vomiting, hiccups, mental disorders, seizures (epilepsy).

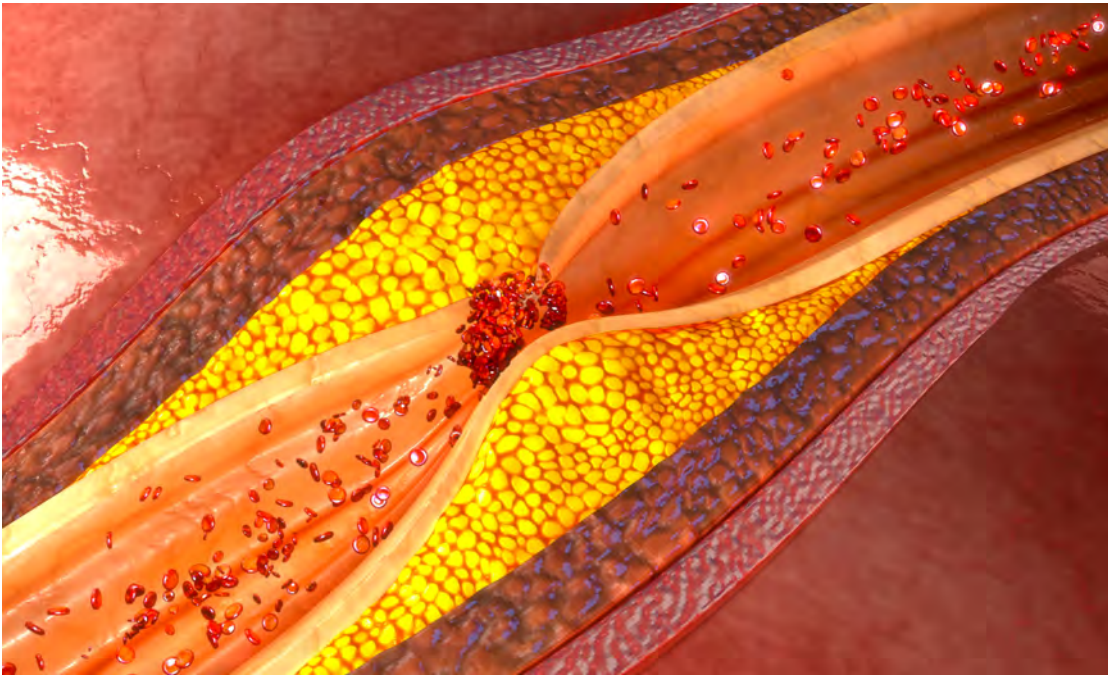
BL15 is a heart back-Shu point. BL15 calms the heart and Shen and regulates the Qi and blood. Traditional indications include: cardiac/chest pain, mental disorders (panic, psychosis, loss of memory), night sweats, spermatorrhea (including nocturnal emission).

Given the heart related historical use of the acupuncture points tested, the point selection is congruous with the focus of the study. The researchers concluded that both acupuncture and nitroglycerine increased blood perfusion to ischemic myocardium in patients with coronary heart disease. **As a result, the researchers noted that acupuncture SPECT technology “clearly display(s)” the “therapeutic effects of acupuncture on CHD, thus providing a new visible research method for CHD studies.”**

Reference:

Gao, Z., S. Hu, Z. J. Wang, Q. Chen, and S. W. Jia. "[Treating coronary heart disease by acupuncture at neiguan (PC6) and xinahu (BL15): an efficacy assessment by SPECT]." *Zhongguo Zhong xi yi jie he za zhi Zhongguo Zhongxiyi jiehe zazhi= Chinese journal of integrated traditional and Western medicine/ Zhongguo Zhong xi yi jie he xue hui, Zhongguo Zhong yi yan jiu yuan zhu ban* 33, no. 9 (2013): 1196-1198.

Nanyang First People's Hospital



Acupuncture potentiates coronary heart disease drug therapy. Patients receiving acupuncture combined with usual care had greater positive patient outcomes than patients receiving only drug therapy. In a clinical trial conducted at Nanyang First People's Hospital, acupuncture combined with drug therapy produced an 85% total effective for the treatment of coronary heart disease (coronary artery disease). Patients receiving only drug therapy had a 62.5% total effective rate. **The researchers note that the application of acupuncture “can significantly improve blood lipids, blood pressure, heart rate and electrocardiogram indicators in CHD patients while reducing coronary artery plaques.”** [1]

The results indicate that acupuncture produces synergistic or additive effects when combined with drug therapy. The outcome measures included serum total cholesterol (TC), triacylglycerol (TG), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), mean arterial pressure (MAP), heart rate (HR), T-wave amplitude in leads V4–V6, vascular remodeling index (RI), plaque eccentricity index (EI) and necrotic core (NC). TC, TG, LDL-C, and

HDL-C were used to measure blood lipids. MAP and HR examined heart function. T-wave amplitude in leads V4–V6 assessed electrocardiogram changes. RI, EI, and NC were used to study coronary artery plaques.

The total efficacy rate was 85.0% in the acupuncture plus drugs treatment group and 62.5% in the drug monotherapy control group. There was a statistically significant difference between the two groups ($p < 0.05$). The indicators of blood lipids, MAP, HR, electrocardiogram results, and the indicators of coronary artery plaque all showed a significant change after treatment in the two groups ($p < 0.05$). After the treatment, the indicators of blood lipids (TG, LDL-C), MAP, HR, electrocardiogram indicators, and the indicators of coronary artery plaque in the acupuncture plus drugs treatment group were significantly different from those in the drug monotherapy control group ($p < 0.05$).

Researchers (Wang et al.) used the following study design. A total of 80 patients were treated and evaluated in this study. The patients were hospitalized due to coronary heart disease (CHD) between June 2016 and January 2018. They were randomly divided into an acupuncture plus drugs treatment group and a drug monotherapy control group, with 40 patients in each group. For the control group patients, conventional drug therapy was provided. The treatment group received acupuncture in addition to the identical drug treatment protocol administered to the drug control group.

The statistical breakdown for each randomized group was as follows. The treatment group was comprised of 19 males and 21 females. The average age in the treatment group was 54 ± 6 years. The average course of disease in the treatment group was 7.78 ± 0.82 years. The control group was comprised of 17 males and 23 females. The average age in the control group was 54 ± 6 years. The average course of disease in the control group was 7.65 ± 0.88 years. There were no significant statistical differences in gender, age, and course of disease relevant to patient outcome measures for patients initially admitted to the study.

The study included patients satisfying the diagnostic criteria of CHD based on the *Clinical and Pragmatic Cardiology's Diagnostic Criteria Of Chronic Stable Angina* (Peking University Medical Press) [2] and the *Guiding Principles for Clinical Study of New Chinese Medicine's Diagnostic Criteria Of CHD*. The latter fit the differential diagnostic pattern of qi deficiency and blood stasis with primary symptoms including chest pain, oppression in the chest, and shortness of breath. Secondary symptoms included fatigue, palpitations, dark purple lips, and spontaneous sweating, and a pale or dark tongue with a string-like (wiry) and hesitant pulse. [3] The following selection criteria were also applied:

- *Stable angina occurred more than 2 times per week*
- *Grade I–III according to the Canadian Cardiovascular Society Grading System*
- *Informed consent was signed*

Exclusion criteria included the following:

- *Acute myocardial infarction or other heart diseases*
- *Pregnant or lactating*
- *Mental disorders*
- *American Society of Anesthesiologists (ASA) Score 3 (moderate to severe systemic disease with significant functional limitations)*

For both groups, patients received 20–40 mg of isosorbide mononitrate and 100 mg of aspirin tablets, once per day, for a total of four consecutive weeks. Intravenous infusion of nitroglycerin was allowed for severe cases. Additional medications (antiarrhythmics, anticoagulants, or calcium antagonists) were prescribed based on individual presentations.

Isosorbide mononitrate is a vascular dilator used to prevent angina due to CHD. Aspirin is a medication that interferes with blood clot formation. Nitroglycerin is an organic nitrate that helps relax the blood vessels and is used to treat angina in people with CHD. The following primary acupuncture points were applied for the acupuncture group:

- **CV17 (Danzhong)**

- **PC6 (Neiguan)**
- **PC4 (Ximen)**
- **ST36 (Zusanli)**
- **BL15 (Xinshu)**

Treatment commenced with patients in a supine position. After disinfection of the acupoint sites, a 0.30 mm × 30 or 40 mm disposable filiform needle was inserted into each acupoint with a high needle entry speed. Neiguan and Ximen were perpendicularly needled to a depth of 0.5–0.8 cun. Danzhong was obliquely needled to a depth of 0.3–0.5 cun. Zusanli was perpendicularly needled to a depth of 1.0–1.5 cun. Upon achieving a deqi sensation, the Ping Bu Ping Xie (mild attenuating and tonifying) manipulation technique was applied.

The acupuncture needles were retained for 30 minutes. Next, patients were asked to take a prone position. A 0.30 mm × 40 mm disposable filiform needle was obliquely inserted toward the spine into Xinshu, reaching a maximum insertion of 1–1.2 cun. The needle was manipulated every 5 minutes during a 15–20 minute needle retention time. The acupuncture treatment was conducted twice a day for a total of four consecutive weeks during hospitalization.

Evaluations were performed before and after acupuncture treatment. As a result of acupuncture therapy, patients achieved significantly improved indicators of blood lipids (TG, LDL-C), MAP, HR, electrocardiogram results, and indicators of coronary artery plaque (RI, EI, NC) ($p < 0.05$). After completion of treatment, the efficacy rates for each patient were categorized into 1 of 3 tiers:

- *Significantly effective: Angina was reduced by 2 grades. Disappearance of angina for grade I and II patients. Angina didn't occur even after vigorous physical activities. The ECG (EKG) ischemic changes returned to normal.*
- *Effective: Angina was reduced by 1 grade. Angina didn't occur after general physical activities. ST-segment was evaluated by ≥ 0.05 mv or returned to normal. Inverted T waves became shallower by $\geq 25\%$. Flattened T waves became erect.*

- *Ineffective: No improvement of symptoms and ECG. Angina occurred after general physical activities.*

Research indicates that acupuncture is effective for the treatment of CHD. According to the research covered in this article, acupuncture benefits patients undergoing drug therapy for CHD by improving blood lipids, blood pressure, heart rate, and electrocardiogram indicators while reducing coronary artery plaques. This confirms similar research demonstrating that acupuncture reduces plaque buildup in the carotid arteries. [4]

In related findings, researchers from the University of California, Los Angeles (UCLA) find acupuncture effective for protecting the heart. In a lab experiment, electroacupuncture applied to acupuncture points PC6 and PC5 in rabbits with coronary arterial occlusion resulted in less ventricular arrhythmias.

Electroacupuncture decreased heart infarct size (protected the heart from tissue death due to obstruction of blood and oxygen supply). The researchers showed that electroacupuncture caused a decrease in left ventricle dysfunction. A decrease in harmful ST segment elevation was observed. [5]

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Supraventricular Arrhythmias

Cardiac arrhythmias, also referred to as cardiac dysrhythmias, are disorders of heart rate (e.g., bradycardia, tachycardia) or rhythms. This section focuses on the use of acupuncture for the treatment of supraventricular arrhythmias. The National Heart, Lung, and Blood Institute (NIH) notes:

Arrhythmia is caused by changes in heart tissue and activity or in the electrical signals that control your heartbeat. These changes can be caused by damage from disease, injury, or genetics. Often there are no symptoms, but some people feel an irregular heartbeat. You may feel faint or dizzy or have difficulty breathing.

The most common test used to diagnose an arrhythmia is an electrocardiogram (EKG or ECG). Your doctor... may recommend medicines, placement of a device that can correct an irregular heartbeat, or surgery to repair nerves that are overstimulating the heart. If arrhythmia is left untreated, the heart may not be able to pump enough blood to the body. This can damage the heart, the brain, or other organs.

A premature heartbeat happens when the signal to beat comes early. It can feel like your heart skipped a beat. The premature, or extra, heartbeat creates a short pause, which is followed by a stronger beat when your heart returns to its regular rhythm. These extra heartbeats are the most common type of arrhythmia. They are called ectopic heartbeats and can trigger other arrhythmias.²⁵

25. [nhlbi.nih.gov/health-topics/arrhythmia](https://www.nhlbi.nih.gov/health-topics/arrhythmia). 11-21-19.

Supraventricular and Ventricular Arrhythmias

The National Heart, Lung, and Blood Institute discusses the types of arrhythmias:

Supraventricular arrhythmia

Arrhythmias that start in the heart's upper chambers, called the atrium, or at the gateway to the lower chambers are called supraventricular arrhythmias. Supraventricular arrhythmias are known by their fast heart rates, or tachycardia. Tachycardia occurs when the heart, at rest, goes above 100 beats per minute. The fast pace is sometimes paired with an uneven heart rhythm. Sometimes the upper and lower chambers beat at different rates. Types of supraventricular arrhythmias include:

- Atrial fibrillation. This is one of the most common types of arrhythmia. The heart can race at more than 400 beats per minute.
- Atrial flutter. Atrial flutter can cause the upper chambers to beat 250 to 350 times per minute. The signal that tells the upper chambers to beat may be disrupted when it encounters damaged tissue, such as a scar. The signal may find an alternate path, creating a loop that causes the upper chamber to beat repeatedly. As with atrial fibrillation, some but not all of these signals travel to the lower chambers. As a result, the upper chambers and lower chambers beat at different rates.
- Paroxysmal supraventricular tachycardia (PSVT). In PSVT, electrical signals that begin in the upper chambers and travel to the lower chambers cause extra heartbeats. This arrhythmia begins and ends suddenly. It can happen during vigorous physical activity. It is usually not dangerous and tends to occur in young people.

Ventricular arrhythmia

These arrhythmias start in the heart's lower chambers. They can be very dangerous and usually require medical care right away.

- Ventricular tachycardia is a fast, regular beating of the ventricles that may last for only a few seconds or for much longer. A few beats of ventricular tachycardia often do not cause problems. However, episodes that last for more than a few seconds can be dangerous. Ventricular tachycardia can turn into other more serious arrhythmias, such as ventricular fibrillation, or v-fib. Torsades de pointes is a type of arrhythmia that causes a unique pattern on an EKG and often leads to v-fib.
- Ventricular fibrillation occurs if disorganized electrical signals make the ventricles quiver instead of pumping normally. Without the ventricles pumping blood to the body, sudden cardiac arrest and death can occur within a few minutes.²⁶

EKG Devices

The advent of affordable medical-grade mobile EKG devices makes monitoring arrhythmias more accessible. Devices exist that can detect atrial fibrillation, bradycardia, tachycardia, and normal heart rhythms. Some relatively accurate devices connect via bluetooth to smartphones (e.g., Kardiamobile by AliveCor). These devices make purchasing and implementing monitoring systems of heart rhythms into a clinic a relatively easy integration. Other standalone devices, such as the Apple Watch, have EKG capabilities built-in to device.

Pulse

According to Chinese medicine principles, it is usually easier to correct issues of the pulse when the heart beat is irregularly irregular. An irregularly irregular pulse involves irregular beats but they do not have a specific pattern. Generally, a regularly irregular pulse is considered a more intractable disorder. A regularly irregular pulse has a set pattern of irregularity. The following is a list of some of the types of irregular pulses that are commonly seen in a Chinese medicine clinic:

26. nhlbi.nih.gov/health-topics/arrhythmia. 11-21-19.

Hesitant-Choppy

In Chinese medicine literature, this pulse is described as a sick silkworm eating a mulberry leaf or a knife scraping bamboo. It is considered the opposite sensation of feeling a slippery pulse. It is uneven, rough, and sometimes irregular in strength and fullness. This may be caused by qi and blood stagnation. If this pulse is thin, it may be caused by jing, blood, or yin deficiency.

Abrupt-Hurried

This pulse is fast and irregularly skips beats. It may be caused by various influences including emotional fluctuations, stagnation (qi, blood, food, fire, or phlegm/dirty water), zang organ deficiency (heart, liver, lung, kidney, spleen), heart qi deficiency, and heat or yang pernicious influences.

Knotted

This is an irregular pulse that irregularly skips beats. It comes and goes slowly. This pulse indicates a variety of disorders including:

- cold obstructing qi and blood
- qi, blood, or jing deficiency
- heart qi deficiency
- stagnation (qi, blood, food, fire, or phlegm/dirty water)

Regularly-Intermittent

This pulse is one that regularly skips beats (i.e., regularly irregular). This indicates several possible disorders:

- heart qi and blood deficiency
- zang organ qi and blood deficiency
- stagnation (qi, blood, food, fire, or phlegm/dirty water)
- injury
- heart sinoatrial to atrioventricular node pathway blocked (SA–AV), which is a disorder of the heart's electrical conduction system

Scattered

This is a big, floating, and weak pulse with no root. It is often irregular. This pulse occurs prior to delivery of a baby. This pulse may indicate a miscarriage or indicate the lack of stomach qi or that yin and yang are separating (impending death).

Lifestyle Recommendations

From a Chinese medicine dietetics perspective, caffeinated beverages, nicotine products, and alcohol are considered inappropriate for patients with irregular pulses. Another important lifestyle consideration is anxiety. Patients are encouraged to reduce stress levels and engage in healthy activities that reduce stress, including Taiji and Qi Gong.

Acupuncture

HT7 (Shenmen), HT5 (Tongli)
PC6 (Neiguan), PC7 (Daling)
GV20 (Baihui)

This acupoint combination nourishes the heart and shen (spirit). This is a great treatment for insomnia, palpitations, or heart arrhythmias (including atrial fibrillation). This acupoint prescription is beneficial to patients wherein qi and blood deficiency creates insufficient nourishment to the heart. It is also beneficial to patients wherein sudden fright causes these indications. Note that GV20 is often replaced with Sishencong or in combination with Sishencong. This acupoint selection may achieve cardioversion and can be verified with an EKG.

Indications

- palpitations
- insomnia
- arrhythmias
- dizziness

- diminished vision
- dyspnea
- poor memory
- pale complexion
- excess worrying or anxiety
- fatigue
- weak pulse

Next, we will review research that looks at the efficacy of specific acupuncture points for the treatment of arrhythmias. This includes HT7 (Shenmen), PC6 (Neiguan), CV17 (Danzhong), and BL15 (Xinshu).

HT7, PC6, CV17, BL15 Research

University of Minnesota (Minneapolis) researchers find acupuncture effective for the treatment of cardiac arrhythmias. In a meta-analysis of eight independent investigations, acupuncture had an 87% – 100% success rate for converting patients to a “normal sinus rhythm after acupuncture.” Based on the findings, the University of Minnesota researchers recommend additional studies, including those with long-term follow-up examinations, to confirm the results. [1]

Beijing University researchers produced similar findings. They concluded that “CA [conventional acupuncture] may be a useful and safe alternative or additive approach to AADs [anti-arrhythmia drugs] for cardiac arrhythmia, especially in VPB [ventricular premature beat] and Af [atrial fibrillation] patients, which mainly based on a pooled estimate and result from 1 study with higher methodological quality.” [2] The Beijing University researchers note that additional studies are required to confirm the results in order to produce a more “robust conclusion.”

Additional research supports the aforementioned evidence. In an independent investigation, researchers conclude, “Acupuncture is a safe and effective therapy for conversion of paroxysmal atrial fibrillation and atrial

flutter.” [3] In the study, a comparison between acupuncture and amiodarone (an antiarrhythmic medication) was made. One group received acupuncture at the following acupoints:

- **Neiguan (PC6)**
- **Shenmen (HT7)**
- **Danzhong (CV17)**

Another group received intravenous injections of amiodarone. The group receiving acupuncture had an 85% total effective rate. The drug group had a 67.5% total effective rate. Conversion times were significantly faster in the acupuncture group than the drug group. Acupuncture produced a 39.6 (± 13.7) minute average conversion time and amiodarone produced a 50.1 (± 14.8) minute conversion time. [4]

There are several tools available to physicians for the purposes of restoring a normal rhythm to the heart. Synchronized electrical cardioversion, defibrillation, and chemical cardioversion are standard therapeutic measures for the treatment of cardiac arrhythmias including atrial fibrillation, atrial flutter, and ventricular tachycardia. The aforementioned research indicates that acupuncture is another useful tool for restoring a healthy heart rhythm.

Acupuncture has also been found effective for the prevention of abnormal heart rhythms. Zhu et al. determined that acupuncture applied to acupoint Neiguan (PC6) prevents atrial fibrillation and exerts an anti-arrhythmia effect. In a groundbreaking laboratory experiment, the researchers proved that acupuncture prevents atrial fibrillation through restoration and remodeling of the right atrial appendage. [5] Zhu et al. add that acupuncture at PC6 “could effectively prevent the onset of arrhythmia and restore the sinus rhythm in AF [atrial fibrillation] rats.”

Zhu et al. conclude that acupuncture reduces the severity of “focal interrupted cardiomyocytes, myolysis, interstitial edema and increased extracellular space.” Results were confirmed with electrocardiograms, histological examinations, and ultrastructure analyses. Zhu et al. concluded, “Considering that acupuncture was safe, effective, without any pro-arrhythmic effect compared with the classical pharmacological therapy, this traditional Chinese medicine had a potential to become a more mainstream complementary intervention in the treatment of atrial fibrillation.” [6]

The importance of the findings cannot be underestimated. In a report produced by the Heart Rhythm Society, researchers note that over 33 million people have atrial fibrillation worldwide and there are approximately 5 million new cases every year. [7] In another report by the Heart Rhythm Society, the authors note, “Recent small studies suggest that neuromodulation through skin or subcutaneous tissues may also help to control AF using either a transcutaneous approach or acupuncture.” [8] The Heart Rhythm Society authors include Dr. Robert M. Califf (former US FDA Commissioner) and doctors from Harvard Medical School, Johns Hopkins University School of Medicine, Duke University, and University of California.

The Heart Rhythm Journal publication cites the work of Lomuscio et al. that was published in the *Journal of Cardiovascular Electrophysiology*. The study concludes, “Our data indicate that acupuncture treatment prevents arrhythmic recurrences after cardioversion in patients with persistent AF. This minimally invasive procedure was safe and well tolerated.” [9] The results were based on a highly controlled clinical investigation. Lomuscio et al. applied identical acupuncture points to all patients in the acupuncture treatment group:

- **Neiguan (PC6)**
- **Shenmen (HT7)**
- **Xinshu (BL15)**

Acupuncture was applied once per week for a total of 10 acupuncture sessions per patient. Results were compared with patients in a sham acupuncture group, a control group (neither acupuncture nor antiarrhythmic therapy), and a group receiving amiodarone treatment. In a 12 month follow-up examination, amiodarone patients had a 27% recurrence rate of atrial fibrillation. Patients receiving true acupuncture had a 35% recurrence rate, sham acupuncture patients had a 69% recurrence rate, and the control group had a 54% recurrence rate.

A dosage dependent investigation may highlight superior clinical protocols for the application of acupuncture. For example, instead of limiting patients to weekly acupuncture visits capped at 10 total visits, a more realistic dosage of 15 – 30 acupuncture visits over a shorter period of time may produce superior patient outcomes. Additional investigations including large sample sizes across diverse populations is warranted given the existing

evidence and medical necessity for finding a solution to cardiac arrhythmias.

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Next, we review PC6 and HT7 research with the addition of PC4, BL14, and CV14. Bonus herbal medicine material is included but it is not required material for the quiz or completion of this course.

Additional Research

Acupuncture plus herbal medicine regulates heart beats and improves patient outcomes for patients taking drugs. Researchers from the Tianjing University of Chinese Medicine tested the efficacy of combining acupuncture and herbs with drug therapy. The addition of the Traditional Chinese Medicine (TCM) therapies increased positive patient outcomes by 28% for patients with tachycardia, arrhythmias, and palpitations.

The researchers tested the drug metoprolol tartrate (brand name Lopressor) in combination with acupuncture and herbs. Drug therapy, as a standalone treatment, produced a 64% total effective rate. Adding acupuncture and herbs to the treatment regimen increased the total effective rate to 92%.

Metoprolol tartrate is a beta-adrenergic blocking agent used for the treatment of high blood pressure, chest pain, and heart attack prevention. Statistically, this medication reduces the risk of death due to heart disorders for patients that have already suffered a heart attack. Metoprolol tartrate is also used to treat tachycardia (abnormally rapid heart beats) and arrhythmias (irregular heart beats). Acupuncture plus herbs with metoprolol tartrate produced a 92.0% total treatment effective rate. Metoprolol tartrate, as a standalone therapy, produced a 64.0% total effective rate.

Patients with arrhythmias and tachycardia tend to present with rapid and irregular pulses. Symptoms and signs often include palpitations, chest oppression, angina, irritability, insomnia or poor quality sleep, fatigue, or dizziness. Notably, emotional factors exacerbate arrhythmias and tachycardia, including both panic attacks and generalized anxiety.

The scientists in the study tested the efficacy of combining an acupuncture point prescription and a classic Chinese medicine herbal formula with drug therapy. We'll take a close look at how the researchers achieved improvements in patient outcomes. Next, we'll present the acupuncture points used, a modified version of a classic TCM herbal formula, and the results.

The study design was as follows. A total of 50 patients were randomly divided into a treatment group and a control group, each consisting of 25 patients. The treatment group consisted of 16 males and 9 females. The age range was between 18 and 65, with an average age of 42.20 years. The

course of disease was between 5 months and 4 years. The control group consisted of 14 males and 11 females. The age range was between 19 and 64, with an average age of 41.08 years. The course of disease was between 6 months and 5 years. There were no significant statistical differences in terms of gender, age, and disease duration between the two groups.

The treatment group received acupuncture, herbs, and drug therapy. The control group received only drug therapy. Both groups received identical drug therapies. Metoprolol tartrate was orally administered once per day. Acupuncture points were identical for all patients in the treatment group. No variation for differential diagnostics were allowed. The acupoints for acupuncture therapy were as follows:

- **PC6 (Neiguan)**
- **HT7 (Shenmen)**
- **PC4 (Ximen)**
- **BL14 (Jueyinshu)**
- **CV14 (Juque)**

The acupoints were needled with manual stimulation techniques to achieve a deqi sensation. Next, PC6 and HT7 were rotated, lifted, and thrust rapidly for one minute. Needle retention time was 30 minutes per session. Acupuncture was administered once per day.

The following herbal medicine is presented for your personal clinical information but is not included in the quiz and is not required for CEUs.

A modified version of the herbal formula Zhi Gan Cao Tang was administered for 30 days. It was prepared once daily and served in two portions, once in the morning and the other portion at night. The ingredients of the modified herbal formula were as follows:

- **Tai Zi Shen 30g**
- **Gui Zhi 12g**
- **Sheng Jiang 15g**
- **Zhi Gan Cao 15g**
- **Ma Zi Ren (Huo Ma Ren) 10g**
- **Da Zao 10 pieces**
- **Suan Zao Ren 30g**

- **He Huan Pi 30g**
- **Wu Wei Zi 14g**
- **Mo Han Lian 20g**
- **Mai Dong 10g**
- **Gan Song 6g**

Before and after treatments, the electrocardiogram (ECG) changes of the patients were observed and compared. The treatment efficacy for each patient was evaluated and categorized into one of three tiers:

- *Recovery: Complete elimination of accompanied symptoms. Normal ECG results.*
- *Effective: Improvement in accompanied symptoms and ECG results.*
- *Not effective: No improvement in symptoms and ECG results.*

For the treatment group, the total effective rate was 92.0% with the following breakdown of improvement tiers: 17 recovered, 6 effective, 2 no effect. The control group had a 64.0% total effective rate with the following breakdown of improvement tiers: 11 recovered, 5 effective, 9 no effect. The researchers conclude that the results show that acupuncture combined with herbs is effective and increases the efficacy of metoprolol tartrate by a significant margin. Here, the integrative model of TCM with drug therapy significantly outperforms using only medications as an isolated therapeutic approach to patient care.

Combining acupuncture with herbal medicine into a treatment protocol has deep historical roots. Sun Si-miao, a famous traditional Chinese medicine doctor of the Sui and Tang dynasty, once noted that acupuncture, moxibustion, and herbs may all be combined in a therapeutic treatment regimen. Sun Si-miao clearly indicated that an integrative model of patient care is an appropriate treatment protocol. The herbal formula Zhi Gan Cao Tang has historically been used for heart beat disorders. Modern science also confirms the ancient applications. Zhen et al. find Zhi Gan Cao Tang effective for the treatment of arrhythmias. Yuan et al. find Zhi Gan Cao Tang effective for repairing some forms of myocardial damage. The herbs in Zhi Gan Cao are the following:

- Zhi Gan Cao 12 grams

- Ren Shen 9g
- Sheng Di Huang 24 g
- E Jiao 6 g
- Mai Men Dong 9 g
- Huo Ma Ren 9 g
- Da Zao 5–10 pieces
- Gui Zhi 9 g
- Sheng Jiang 9 g

Variations on other formulas are often used to calm the shen (spirit) and stabilize the heart beat. For example, the following variation on Chai Hu Jia Long Gu Mu Li Tang sedates shen and helps to restore or maintain a normal sinus rhythm for many patients:

- Suan Zao Ren 9 grams
- Long Chi (use Long Gu if unavailable) 12 g
- Mu Li 9 g
- Zhi Mu 9
- Zhi Gan Cao 2
- Fu Shen 12
- Gui Zhi 9
- Dan Shen 9
- Mai Men Dong 6
- Sheng Di Huang 9
- Ren Shen 9
- Chen pi 6

Acupuncture

The acupuncture points chosen for the study are classically indicated for heart disorders. Acupoint PC6 (Neiguan) has been traditionally indicated for heart rhythm disorders, angina, chest oppression, palpitations, and heart rate disorders. This acupoint is also indicated for the treatment of insomnia, nausea, vomiting, and fever with the absence of sweating.

Acupoint HT7 (Shenmen) is another classic acupuncture point chosen for the

study. It is classically indicated for the treatment of angina and palpitations. Like PC6, it is also indicated for the treatment of insomnia. The other acupoints used in the heart study are also traditionally indicated for the treatment of heart disorders. PC4 (Ximen) is indicated for the treatment of angina, chest pain, and insomnia. BL14 (Jueyinshu) is indicated for the treatment of angina, chest pain, mental restlessness, and chest oppression. CV14 (Juque) is indicated for angina, chest pain radiating to the back, shortness of breath, and mental restlessness.

Research confirms that the traditional indications are correct for the acupuncture points and the herbal formula. Heart arrhythmias, palpitations, and tachycardia can be life threatening and alarming. Drug therapy is an effective approach to patient care; however, research demonstrates that a combination of TCM therapy plus drug therapy is a superior treatment protocol to using only drug therapy.

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