



CHINESE & ASIAN MEDICINE

## Chinese Medicine's Role in Improving Heart Failure Outcomes

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### WHAT YOU NEED TO KNOW

- Mitigating cardiac-related wear and tear has long been a therapeutic concept in the fight against heart failure. In fact, acupuncturists have used their expertise to support heart function for millennia.
- As it turns out, better autonomic nervous system regulation is a key tactic against heart failure, and one that allopathy also recognizes.
- Both acupuncture and herbal medicine have key roles to play in improving quality of life for cardiac patients.

For decades, heart failure has placed an enormous burden on health care providers, and yet mortality rates remain high. In the case of congestive heart failure, for example, 50 percent of people diagnosed with the condition will die within five years.

Numerous interventions, most of them pharmacological, are deployed to sustain cardiac function in these patients. ACE inhibitors, beta blockers, calcium channel blockers and vasodilators are frontline options. Each one a different pharmacokinetic pathway to the same goal - improving operating conditions in the cardiovascular system and reducing working stresses on the heart.

Mitigating cardiac-related wear and tear has long been a therapeutic concept in the fight against heart failure. In fact, acupuncturists have used their expertise to support heart function for millennia. There remains a need for more high-quality studies, but recent research may be revealing what mechanisms are behind acupuncture's efficacy in heart failure patients.

The Autonomic Nervous System: the Physiological Link Between Acupuncture and Heart Failure

There is abundant evidence to show that acupuncture has significant, systemic effects on how the body's nervous system expresses itself. As practitioners, we know that every time a needle is inserted, the result is a burst of neurological stimulation that balances and restores.

As it turns out, better autonomic nervous system regulation is a key tactic against heart failure, and one that allopathy also recognizes. Specifically, the goal is to alleviate sympathetic activity (responsible for increasing cardiac stresses) and enhance parasympathetic activity (responsible for modulating those stresses).

Acupuncture is a known sympathetic activity-reducer and parasympathetic activity-booster, so acupuncture has clear therapeutic potential in people with heart failure.

### Recent Research Support

A recent meta-analysis, published in a 2018 issue of *Cardiology in Review*, considered two acupuncture points (PC 6 and ST 36) widely implicated in heart function. While the research team had difficulties comparing studies due to high rates of heterogeneity (an ongoing challenge for acupuncture research), a compelling neurohumoral explanation for acupuncture's potential in heart failure did emerge.

Specifically, researchers noted that acupuncture at these points acted on the rostral ventrolateral medulla (RVLM) to mitigate sympathetic output to the intermediolateral gray column in the spinal cord and, by extension, sympathetic output delivered to the heart's myocytes. Several RVLM-inhibitory mechanisms were identified when PC 6 and ST 36 were targeted, the cumulative effect being to significantly reduce strain on the heart's hardest-working cells.

The researchers also noted that acupuncture's RVLM-mitigating response could improve vasodilation in peripheral blood vessels, reducing hypertension and controlling dangerous blood pressure spikes. Elevated nitric oxide levels were noted in areas close to acupuncture points, and researchers speculated that this was likely behind the improved vasodilation.

Acupuncturists already know the practice can balance energies that the heart receives or transmits, but it's encouraging that a clear physiological link is being established between acupuncture and improved heart failure-related outcomes.

### Connecting Classic Herbal Formulas With Modern Disease Classification

As acupuncturists, we are trained to think and diagnose disease in classical Chinese medicine. At the same time, for practical purposes, we are also required to discuss and understand diseases in modern medical parlance. Heart failure is a classic example of this conundrum.

The classical texts do not use terms like *congestive heart failure*; much less differentiate subtypes of heart failure (with depressed or preserved ejection fraction). And while they consider the symptoms and etiology, it is always within the lens of *yin-yang* theory.

One example of this can be seen in the classical pairing of *gui zhi* and *gan cao*. This herbal pair makes up the formula *Gui Zhi Gan Cao Tang*. *Gui Zhi Gan Cao Tang* is first mentioned by Zhang Zhong Jing in clause 64 of the *Shang Han Lun*. Zhang Zhong Jing explains that the indication for this herbal pairing is when the patient develops palpitations below the heart and a desire for pressure while covering their hands over their heart. Importantly, this occurs after the patient has excessive sweating.

There are a few things we can deduce from this scenario. First of all, this occurs in a deficient

state. The excess sweat has caused the *yang* energy to be depleted. We can see evidence of the deficiency in the fact that the patient desires pressure, as well as covering over their chest wall with the placement of their hands. In having a proper differentiation of the symptoms, we can accurately characterize the type of heart failure that is occurring from a Chinese medicine perspective.

#### Application / Takeaway

Applying the herbs to the pattern, *gui zhi* is given in a ratio of 2:1 to *gan cao*. *Gui zhi* is warm, opening and unblocking the channels. It enters the heart to warm the yang. *Gan cao* is sweet and tonifies the *qi*. It enters the spleen and heart to tonify *qi*, and secondarily supports heart blood. Together, they restore the *yang qi* of the heart. If the diagnosis is accurate the patient will have improvement in shortness of breath, fatigue, and cardiac function with improvement in cardiac contractility.

Both acupuncture and herbal medicine have key roles to play in improving quality of life for cardiac patients. As acupuncturists today, we have the benefit of a tried-and-true medical system along with the benefits of technological advances in modern medicine. As ongoing research sheds new light on the physiological links between acupuncture and heart failure, and armed with our understanding of the classical formulas, we can provide our patients with increasingly quality care.

#### Reference

1. Ni YM, Frishman WH. Acupuncture and cardiovascular disease: focus on heart failure. *Cardiol Rev*, 2018 Mar/Apr;26(2):93-98.

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