



LETTER TO THE EDITOR

Traditional Chinese Medicine Is Widely Used for Cardiovascular Disease

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Abstract

A review article by Hao et al. (*J Am Coll Cardiol* 2017;69(24):2952–66) has had huge repercussions among those familiar with traditional Chinese medicine (TCM) in the international academic community. It evaluated the efficacy and safety of TCM for cardiovascular disease and the pharmacological effect of active TCM ingredients on the cardiovascular system and potential mechanisms. We have several comments: Firstly, we give a brief summary addressing nonpharmacotherapy in TCM, including acupuncture, moxibustion, Qigong, and Tai Chi. Secondly, we have added traditional antiarrhythmic drug-related randomized controlled trials to make the coverage more comprehensive. Lastly, we support the concept that research into, development of, and application of active ingredients is part of modern TCM.

Keywords: traditional Chinese medicine; cardiovascular disease; wide use; nonpharmacotherapy; arrhythmia-related randomized controlled trials

A review article by Hao et al. [1] has attracted great attention among those familiar with traditional Chinese medicine (TCM) owing to a clinical evidence-based approach to this topic. It systematically and elegantly evaluated the efficacy and safety of TCM for cardiovascular disease, as well as the pharmacological effects and potential mechanisms of active TCM ingredients on the cardiovascular system [1]. We sincerely congratulate the authors since the article has had huge repercussions

in the international academic community, and it will promote the application of TCM to the world. Meanwhile, we believe this article could have been more comprehensive if the following points had been addressed.

Firstly, there is no summary of nonpharmacotherapy in TCM, including acupuncture, moxibustion, Qigong, and Tai Chi. Recently, for instance, several large-scale randomized controlled trials (RCTs) of acupuncture proved its clinical effect on migraine [2], constipation [3], polycystic ovary syndrome [4], and urinary incontinence [5]. In the cardiovascular field, acupuncture has shown its efficacy and safety in the treatment of heart failure, hyperlipidemia, and hypertension [6–10]. We performed a meta-analysis to evaluate acupuncture for the treatment of arrhythmia compared with existing antiarrhythmic

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Table 1 Characteristics of Randomized Controlled Trials of Wenxin Keli for Treatment of Ventricular Premature Beats (VPB).

Study	Sample size	Intervention		Course (weeks)	Outcome measure	Main result
		Experimental group	Control group			
Yu [11]	44/40	Wenxin Keli 9 g, tid	Mexiletine 150 mg, tid	4	VPB	The total effective rate in the experimental group for VPB was greater than that in the control group
Yang et al. [12]	30/30	Wenxin Keli 9 g + amiodarone 0.2 g, tid	Amiodarone 0.2 g, tid	4	VPB	The clinical efficacy of the combination of Wenxin Keli and amiodarone for the treatment of VPB in coronary heart disease was greater than that of amiodarone alone
Zhang et al. [13]	60/30	Wenxin Keli 9 g, tid	Propafenone 100 mg, tid	4	VPB	There was no significant difference in the total effective rate for Wenxin Keli in elderly patients with or without cardiovascular disease on 24 h ECG for VPB
Sun and Zhang [14]	126/83	Wenxin Keli 9–18 g, tid	Propafenone 100 mg, tid	4	VPB	The relief of clinical symptoms in the experimental group was obviously greater than that in the control group. There was no significant difference in improvement in the two groups on 24 h ECG for VPB
Jiang et al. [15]	66/65	Wenxin Keli 9 g, tid	Metoprolol 12.5–25 mg, bid	4	VPB	The effect of Wenxin Keli was similar to that of metoprolol in treating VPB, but Wenxin Keli had a greater effect in relieving clinical symptoms than metoprolol. The incidence of adverse reactions was lower than with metoprolol
He [16]	41/40	Wenxin Keli 9 g, tid	Metoprolol 25 mg, bid	4	VPB	The effect of Wenxin Keli was similar to that of metoprolol in the treatment of senile VPB, but the effect of Wenxin Keli in relieving conscious symptoms was more obvious
Lu et al. [17]	42/44	Wenxin Keli 5 g, tid	Placebo 5 g, tid	2	VPB	The effective rate in the experimental group for VPB was greater than that in the control group
Liang and Wang [18]	90/90	Wenxin Keli 9 g + amiodarone 0.2 g, tid	Amiodarone 0.2 g, tid	4	VPB	The clinical effect in the experimental group for VPB was greater than that in the control group
Hua et al. [19]	565/552	Wenxin Keli 9 g, tid	Placebo 9 g, tid	4	VPB	The experimental group demonstrated a significantly greater reduction in the frequency of VPB than the control group

drugs [9]. In 13 trials with 797 patients enrolled, acupuncture, with or without use of an antiarrhythmic drug, displayed a clear benefit in treating ventricular premature beat and sinus tachycardia.

Secondly, arrhythmia-related RCTs were not included. In cardiac electrophysiology, several herbal components, such as Shenmai, acacetin, Shensong Yanxin, and Wenxin Keli, have been proposed as antiarrhythmic drugs. Similar to amiodarone, the latter two have been verified to have effects on multiple ion channels and to modulate cardiac autonomic nervous function. In 49 RCTs with 4610 patients enrolled, Wenxin Keli was shown to be more effective than other available treatments of arrhythmia, angina, and heart failure [10]. We selected Wenxin Keli for the treatment of ventricular premature beats. The characteristics of RCTs of Wenxin Keli are shown in Table 1 [11–19]. Shensong Yanxin is another well-known compound, first described in the 16th century, and recommended by two Chinese experts' consensus [20, 21]. In a meta-analysis of 22 trials involving 2347 paroxysmal atrial fibrillation patients, it appeared to be beneficial [22]. Another study showed that in 465 study participants, Shensong Yanxin had the benefits of ventricular premature beat suppression and cardiac function improvement with good adherence on a background of standard treatment for heart failure

[23]. Shensong Yanxin also significantly increased the heart rate in patients with bradycardia without severe side effects [24].

In addition, it is controversial that the active ingredients of TCM have been confined to TCM in recent decades. Many people believe that TCM should contain only Chinese herbal compounds and should be guided by the theory of syndrome differentiation, since TCM is usually prescribed as a complex formula by the practitioner on a personalized basis. With the development of modern biomedical technology, the pharmacological effects and the underlying mechanisms of some active ingredients of TCM have been elucidated or assessed. For instance, after reviewing 19 natural drug therapies for antiarrhythmic effects, we summarized 18 active ingredient therapies, such as alkaloids, flavonoids, saponins, quinones, and terpenes [25]. This gives us new concepts and challenges in the use of natural drug agents. Thus we support the view that the active ingredients of TCM are an intrinsic part of TCM, which will help to enrich and develop the practice of TCM in the future [1].

Conflict of Interest

The authors declare that they have no conflicts of interest.

REFERENCES

- Hao P, Jiang F, Cheng J, Ma L, Zhang Y, Zhao Y. Traditional Chinese medicine for cardiovascular disease: evidence and potential mechanisms. *J Am Coll Cardiol* 2017;69(24):2952–66.
- Zhao L, Chen J, Li Y, Sun X, Chang X, Zheng H, et al. The long-term effect of acupuncture for migraine prophylaxis: a randomized clinical trial. *JAMA Intern Med* 2017;177(4):508–15.
- Liu Z, Yan S, Wu J, He L, Li N, Dong G, et al. Acupuncture for chronic severe functional constipation: a randomized trial. *Ann Intern Med* 2016;165(11):761–9.
- Wu XK, Stener-Victorin E, Kuang HY, Ma HL, Gao JS, Xie LZ, et al. Effect of acupuncture and clomiphene in Chinese women with polycystic ovary syndrome: a randomized clinical trial. *JAMA* 2017;317(24):2502–14.
- Liu Z, Liu Y, Xu H, He L, Chen Y, Fu L, et al. Effect of electroacupuncture on urinary leakage among women with stress urinary incontinence: a randomized clinical trial. *JAMA* 2017;317(24):2493–501.
- Ni YM, Frishman WH. Acupuncture and cardiovascular disease: focus on heart failure. *Cardiol Rev* 2018;26(2):93–8.
- Yuan M, Liu Z, Xu B, Lu S. Effects of acupuncture on 1528 patients with obesity complicated with hyperlipidemia in different obesity levels. *Zhongguo Zhen Jiu* 2016;36(8):807–11.
- Terenteva N, Chernykh O, Sanchez-Gonzalez MA, Wong A. Acupuncture therapy improves vascular hemodynamics and stiffness in middle-age hypertensive individuals. *Complement Ther Clin Pract* 2018;30:14–8.
- Li Y, Barajas-Martinez H, Li B, Gao Y, Zhang Z, Shang H, et al. Comparative effectiveness of acupuncture and antiarrhythmic drugs for the prevention of cardiac arrhythmias: a systematic review and meta-analysis of randomized controlled trials. *Front Physiol* 2017;8:358.

10. Wang X, Wang Y, Feng Xi, Lu Y, Zhang Y, Wang W, et al. Systematic review and meta-analysis of randomized controlled trials on Wenxin Keli. *Drug Des Devel Ther* 2016;10:3725–36.
11. Yu SY. Clinical efficacy of Wenxin Keli on premature beats. *Chin J Clin* 2004;32(6):62.
12. Yang J, He JS, Yang XY. Clinical observation of Wenxin Keli plus amiodarone combination therapy on coronary heart disease complicated by ventricular premature beats. *J Guangxi Tradit Chin Med Univ* 2005;8(3):18–20.
13. Zhang XJ, Ge N, Huang XL, Wu JH, Zhang YL, Wang S, et al. The effect of Wenxin Keli on arrhythmia of cardiovascular disease in elderly. *West China Med J* 2005;20(4):263–4.
14. Sun G, Zhang B. Clinical observation of Wenxin Keli in treating 126 cases with ventricular premature beats. *Chin J Basic Med Tradit Chin Med* 2005;11(10):793–4.
15. Jiang QL, Yang CL, Wei X, Lu X, Wu QA. A comparison of Wenxin Keli to metoprolol in treatment of ventricular premature beats. *Pract Clin J Integr Tradit Chin West Med* 2007;7(4):12–3.
16. He CF. A comparison of Wenxin Keli to metoprolol in treatment of symptoms of ventricular premature beats. *Chin J Integr Med CardioCerebrovasc Dis* 2008;6(1):98–9.
17. Lu ZH, Wu XB, Liu L, Li XP, Qiu XL, Lin YZ, et al. The effect of Wenxin Keli on acute coronary syndrome complicated by arrhythmias: a multi-center clinical trial. *J Clin Med Pract* 2010;14(1):59–62.
18. Liang T, Wang XM. Clinical observation of Wenxin Keli in treating 90 cases with ventricular premature beats. *Guangxi Med J* 2013;34(6):795–6.
19. Hua W, Gao RL, Zhao BC, Wang J, Chen XH, Cai C, et al. The efficacy and safety of Wenxin Keli in patients with frequent premature ventricular contractions: a randomized, double-blind, placebo-controlled, parallel-group, multicenter trial. *Chin Med J* 2015;128(19):2557–64.
20. Cao KJ, Chen KP, Chen ML, Dong JZ, Hua W, Huang CX, et al. Current knowledge and management recommendations of atrial fibrillation – 2015. *Chin J Card Arrhythm* 2015;19(5):321–84.
21. Chao KJ, Chen ML, Jiang ML, Jiang H, Yao Y, Wang ZL, et al. Chinese expert consensus on ventricular arrhythmias. *Chin J Card Arrhythm* 2016;20(4):279–326.
22. Chen G, Wei B, Wang J, Feng B, Li Z, Zhang Z, et al. Shensong yangxin capsules for paroxysmal atrial fibrillation: a systematic review of randomized clinical trials. *PLoS One* 2016;11(3):e0151880.
23. Wang X, Hu D, Dang S, Huang H, Huang CX, Yuan MJ, et al. Effects of traditional Chinese medicine Shensong Yangxin capsules on heart rhythm and function in congestive heart failure patients with frequent ventricular premature complexes: a randomized, double-blind, multicenter clinical trial. *Chin Med J (Engl)* 2017;130(14):1639–47.
24. Liu Y, Li N, Jia Z, Lu F, Pu J. Chinese medicine shensong-yangxin is effective for patients with bradycardia: results of a randomized, double-blind, placebo-controlled multicenter trial. *Evid Based Complementary Altern Med* 2014;2014:605714.
25. Li J, Hu D, Song X, Han T, Gao Y, Xing Y. The role of biologically active ingredients from natural drug treatments for arrhythmias in different mechanisms. *Biomed Res Int* 2017;2017:4615727.