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heart failure:

Insuffisance cardiaque

Articles connexes: - conduites thérapeutiques - pathologie - qigong - acupuncture expérimentale - pharmacopée chinoise -

1. Systematic Reviews and Meta-Analysis

1.1. Generic Acupuncture

1.1.1. Jeong 2024

Jeong SH, Lee HG, Kim G, Kwon S, Cho SY, Jung WS, Park SU, Moon SK, Park JM, Ko CN. Combination therapy of acupuncture and herbal medicine for heart failure: A systematic review and meta-analysis. Medicine (Baltimore). 2024 Aug 2;103(31):e39061. https://doi.org/10.1097/MD.0000000000039061

Backgound	Heart failure (HF) is characterized by functional or structural dysfunction of the heart, resulting in impaired blood ejection or ventricular filling. Conventional Western Medicine (CWM) remains the mainstay of treatment for HF; however, the occurrence of adverse events (AEs) necessitates the exploration of alternative treatments. Herbal medicine and acupuncture are adjunctive therapies for HF and have shown potential for improving heart function. This systematic review and meta-analysis aimed to assess the effectiveness and safety of acupuncture and herbal medicine in treating HF.
Methods	PubMed, Embase, Cochrane Central Register of Controlled Trials, China National Knowledge Infrastructure, Citation Information by National Institute of Informatics, KoreaMed, Research Information Sharing Service, and DBpia were searched for randomized controlled trials (RCTs) evaluating the effects of acupuncture and herbal medicine along with CWM as adjunctive treatments for HF, published from inception to May 31, 2024. Treatment effectiveness was determined by evaluating the left ventricular ejection fraction as the primary metric, along with the measurement of the total effective rate, brain natriuretic peptide level, N-terminal prohormone of brain natriuretic peptide level, left ventricular end-diastolic volume, and left ventricular end-systolic volume; the administration of the Minnesota Living with Heart Failure Questionnaire; and the conduct of a 6-minute walk test. Treatment safety was evaluated based on the incidence of AEs. The methodological quality of all included RCTs was assessed using the Cochrane risk of bias tool. A meta-analysis was performed using Review Manager, version 5.4.1.
Results	Of the 133 publications identified, **8 RCTs** met the inclusion criteria. The meta-analysis showed significant improvements in left ventricular ejection fraction, brain natriuretic peptide levels, N-terminal prohormone of brain natriuretic peptide levels, left ventricular end-systolic volume, left ventricular end-diastolic volume, and 6-minute walk test results. Additionally, significant differences were observed in the total effective rate and Minnesota Living with Heart Failure Questionnaire responses. No significant medication-related AEs occurred in the intervention group. Conversely, 7 control patients developed well-known AEs associated with CWM.

Conclusion	Acupuncture combined with herbal medicine and CWM is more effective than CWM alone, indicating a safe treatment approach. Consequently, the proactive administration of acupuncture alongside herbal medicine to patients with HF can be undertaken without concerns regarding AEs.

1.1.2. Liang 2019

Liang B, Yan C, Zhang L, Yang Z, Wang L, Xian S, Lu L. The Effect of Acupuncture and Moxibustion on Heart Function in Heart Failure Patients: A Systematic Review and Meta-Analysis Evid Based Complement Alternat Med. 2019. [202518]. DOI

Background:	Acupuncture and moxibustion (A&M) has been used for treating heart failure in China since the Han Dynasty. This ancient therapy can be applied to many diseases according to the WHO recommendations. Although there are many clinical reports on the treatment of heart failure by A&M, its effectiveness is still not fully demonstrated. We aimed to systematically review the related randomized controlled trial (RCT) studies and conduct a meta-analysis.
Methods	The PubMed, MEDLINE, EMBASE, AMED, CENTRAL, CNKI, Wanfang, and Weipu databases were searched electronically until December 2018. The data were extracted, and the risk of bias was evaluated. Meta-analysis, subgroup analysis, and metaregression were performed. Heart function was the main outcome assessed. The details of the intervention were also investigated.
Results	**Thirty-two RCTs involving 2499 patients** were included. Most studies had an unclear risk regarding blinding and allocation concealment. Compared with the traditional treatment group, the experimental group had a higher efficacy rate (odds ratio (OR) = 2.61, 95% confidence interval (95%CI): = [1.84; 3.72], I 2 = 0%, p < 0.0001) and a significantly improved left ventricular ejection fraction (LVEF) (mean difference (MD) = 6.34, 95%CI = [4.11, 8.57], I 2 = 93%, p < 0.0001), cardiac output (CO) (MD = 1.02, 95%CI = [0.65, 1.39], I 2 = 94%, p < 0.0001), 6-minute walk test (6MWT) (MD = 43.6, 95%CI = [37.43, 49.77], I 2 = 0%, p < 0.0001), and reduced brain-type natriuretic peptide (BNP) (MD = -227.99, 95%CI = [-337.30, -118.68], I2 = 96%, p < 0.0001). Adverse events were inadequately reported in most studies.
Conclusions	A&M may be a promising intervention as an adjunctive therapy to medication for treating heart failure. However, the evidence was inconclusive. Further large and rigorously designed RCTs are needed for verification.

1.1.3. Qiong 2018 ☆

Qiong Liu, Wei Zhu, Mai-Lan Liu, Xia Liu, Jia-Nan Cao, Shu-Ning Hu, Xiao-Rong Chang and Xiang-Hong Jing. Acupuncture and related therapies used as add-on to conventional treatments for heart failure: A systematic review of pairwise and network meta-analyses. World Journal of Acupuncture-Moxibustion. 2018;28(4):268. [196674].

Objective	This study aimed to assess and compare the clinical efficacy and safety of acupuncture and related therapies (ARTs) add-on to conventional treatment (CT) for heart failure (HF) through pairwise and network meta-analyses.

Methods	Six electronic databases, including PubMed, the Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, Chinese Biomedical Literature Database (CBM), China National Knowledge Infrastructure (CNKI) and Wanfang Database were searched from inceptions to December 2017. Randomized controlled trials (RCTs) regarding ARTs combining with CT for HF were eligible. The primary outcomes were changes in heart function classification (HFC) according to New York Heart Association class and left ventricular ejection fraction (LVEF). Risk of bias assessment was conducted by two independent authors. Pairwise and network meta-analyses were performed using STATA 13.0 and WinBUGS 1.4.3 software.
Results	A total of **26 RCTs** were enrolled for analyses, with 5 kinds of ARTs and 2116 patients in all. Pairwise meta-analyses showed that acupoint application (OR: 3.28, 95%CI[2.26, 4.76]), acupuncture (OR: 2.78, 95%CI[1.21, 6.41]), acupoint injection (OR: 3.33, 95%CI[1.85, 6.00]) and moxibustion (OR: 2.51, 95%CI[1.02, 6.211) could significantly improve HFC when they were used as add-on to CI'. Acupoint application (MD: 3.57, 95%CI[1.45, 5.70]), acupuncture (MD: 7.75, 95%CI12.33, 13.17]), acupoint injection (MD: 4.81, 95%CI[2.99, 6.63]) and moxibustion (MD: 6.99, 95%CI[3.62, 10.36]) were significantly beneficial in improving LVEF. Network meta-analyses showed that acupoint injection (SUCRA= 70.0%) and acupuncture (SUCRA= 90.4%) respectively had the greatest probability in improving HFC and LVEF.
Conclusion	Most of the included ARTs add-on to CI' was effective in improving HFC and LVEF. Acupoint injection and acupuncture may respectively have better effect than others for HFC and LVEF. However, due to the small sample size and poor quality of the included studies, hence well-designed RCTs are needed to confirm our findings.

1.1.4. Lee 2015 ∅

Lee H, Kim TH, Leem J. Acupuncture for heart failure: A systematic review of clinical studies.. Int J Cardiol. 2016;:321-331. [187755].

Background	Acupuncture has been used for treating heart failure mainly in combination with conventional treatments, but evidence for its effectiveness and safety has not been well established. Our aim was to review randomized controlled trials (RCTs) on acupuncture for heart failure and assess the clinical evidence.
Methods	Electronic databases such as Medline, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL) and certain Chinese & Korean databases were searched until October 2015. The main outcomes assessed were mortality, New York Heart Association (NYHA) function classifications, and acupuncture-related adverse events. The details of acupuncture intervention were also investigated.
Results	Among 4107 publications, **seven RCTs were included**; most of them showed considerable methodological flaws. We could not conduct a meta-analysis because of the heterogeneity of the included studies. In one acute heart failure study, acupuncture shortened intensive care unit (ICU) stay by 2.2days (95% CI 1.26, 3.14) and reduced the risk ratio of re-admission to 0.53 (95% CI 0.28, 0.99). However, mortality was not affected. Hemodynamic parameters also showed improvement. Another study reported an improved left ventricular ejection fraction by 9.95% (95% CI 3.24, 16.66). In five chronic heart failure studies, acupuncture improved exercise capacity, quality of life, hemodynamic parameters, and time domain heart rate variability parameters. Acupuncture decreased NT-pro BNP levels by 292.20 (95% CI -567.36, -17.04). No adverse effects were reported.
Conclusions	**The effectiveness of acupuncture as a therapy for heart failure is currently inconclusive**. Further large and rigorous clinical trials are needed to establish its clinical utility.

1.2. Special Acupuncture Techniques

1.2.1. Moxibustion

1.2.1.1. Chen 2025

Chen G, Song W, Wu W, Li X, Chen J, Yang Q, Liao H. The effects of moxibustion in chronic heart failure patients: a systematic review and meta-analysis. Front Cardiovasc Med. 2025 Jul 15;12:1552091. https://doi.org/10.3389/fcvm.2025.1552091

Objective	Moxibustion has been utilized in China for 2,000 years as a safe and straightforward intervention for chronic heart failure (CHF). Numerous articles indicate that moxibustion enhances quality of life and certain heart failure indicators in CHF patients; however, there is a deficiency of high-quality, evidence-based studies with large sample sizes. Our objective was to systematically summarize and assess the clinical efficacy of moxibustion as an adjunctive treatment for CHF.
Methods	A thorough search was performed across the PubMed, Cochrane Library, Embase, Web of Science, China Knowledge Network Database, Vipers Database, Wanfang, and China Biomedical Literature Database from their inception until 1 August 2024. A meta-analysis of randomized controlled trials was utilized to aggregate the pooled metrics in patients with chronic heart failure (CHF) and to compare the clinical efficacy rate, N-terminal pro-B-type natriuretic peptide (NT-proBNP), left ventricular ejection fraction (LVEF), 6 min walk test (6MWT), and cardiac output (CO) variations between standard CHF treatment and standard treatment combined with moxibustion for CHF.
Results	The study encompassed **22 randomized controlled trials (RCTs) involving 2,039 participants**, with 1,021 in the experimental group and 1,018 in the control group. The experimental group exhibited a superior clinical efficacy rate compared with the control group (RR = 1.230, 95% CI: 1.173-1.289, $p < 0.05$), reduced NT-proBNP levels [standardized mean difference (SMD) = -1.035, 95% CI: -1.730 to -0.340, $p < 0.05$], enhanced LVEF (SMD = 0.909, 95% CI: 0.704-1.114, $p < 0.001$), improved 6MWT (SMD = 0.909, 95% CI: 0.704-1.114, $p < 0.001$), and increased CO (SMD = 1.0873, 95% CI: 0.882-1.293, $p < 0.001$). Following the application of funnel plots and the trim-and-fill method, the findings regarding clinical efficacy rate, LVEF, 6MWT, and CO were deemed reliable, whereas the results for NT-proBNP were found to be unstable. Subgroup analysis revealed that the number of moxibustion points contributed to heterogeneity in LVEF, 6MWT, and CO, while treatment duration accounted for heterogeneity in 6MWT.
Conclusion	The study demonstrates that, in comparison with standard treatment, the integration of moxibustion for CHF patients markedly enhanced the efficacy rate, LVEF, CO, and 6MWT and may reduce NT-proBNP levels, but this result requires further validation with larger sample sizes and standardized testing methods.

1.3. Special outcome

1.3.1. Quality Evaluation of Literature Reports

1.3.1.1. Cai 2025

Cai B, Su Z, Wang H, Li M, Gai X, Wei Y, Li M. Quality Evaluation of Literature Reports on Clinical Randomized Controlled Trials of Acupuncture Treatment for Stable Angina Pectoris. J Pain Res. 2025

Aug 28;18:4443-4454. https://doi.org/10.2147/JPR.S536468

Objective	To evaluate the reporting quality of randomized controlled trials on acupuncture for the treatment of stable angina pectoris.
Methods	A systematic search was conducted in both Chinese and English databases, including CNKI, Wanfang, VIP, SinoMed, PubMed, Embase, Web of Science, and the Cochrane Library, with a focus on studies published from the inception of each database to March 4, 2025. This search aimed to identify clinical RCTs exploring the effectiveness of acupuncture in treating stable angina pectoris. The reporting quality of the included studies was assessed using the (Consolidated Statement for Trials) CONSORT statement and the (Standards for Reporting Interventions in Controlled Trials of Acupuncture) STRICTA guidelines. The CONSORT statement, an internationally recognized standard for trial reporting, was employed to evaluate the reporting quality of intervention measures in acupuncture trials, while the STRICTA guidelines were applied to assess acupuncture-specific reporting quality.
Results	A total of 31 studies were included in the analysis. The results from the CONSORT evaluation indicated that 19 items had a reporting rate of less than 10%, predominantly related to trial methods and results, while 4 items showed a reporting rate greater than 90%, mainly focusing on abstract descriptions, inclusion criteria, and subject recruitment. According to the STRICTA guidelines, the primary factors influencing the quality of acupuncture-related reports included the rationale for acupuncture treatment, the treatment setting, the description of acupuncturists, and the rationale for selecting control groups or control measures. The reporting rates for these factors were 32.26%, 3.23%, 6.45%, and 25.81%, respectively. In the final randomized controlled trials (RCTs) of acupuncture and moxibustion for stable angina pectoris (SAP), 31 items met the inclusion criteria. The overall reporting quality of these RCTs was suboptimal. Notably, 77.42% of studies failed to report essential intervention details, while a substantial proportion lacked definitions of primary outcomes or adequate descriptions of randomization and blinding procedures. These widespread reporting deficiencies reflect poor adherence to CONSORT and STRICTA guidelines, thereby compromising the transparency, methodological rigor, and interpretability of the current evidence base.
Conclusion	The overall reporting quality of literature on acupuncture for stable angina pectoris needs improvement. Future RCTs should strictly follow CONSORT and STRICTA to enhance research reliability and transparency.

1.3.2. Traditional Chinese Medicine Cutaneous Regions Therapy

1.3.2.1. Li 2023

Li M, Li H, Liu H, Lai X, Xing W, Shang J. Effect of Traditional Chinese Medicine Cutaneous Regions Therapy as adjuvant treatment of chronic heart failure: A systematic review and meta-analysis. Heliyon. 2023 May 2;9(5):e16012. https://doi.org/10.1016/j.heliyon.2023.e16012

Objective	To systematically evaluate the effectiveness of Traditional Chinese Medicine Cutaneous Regions Therapy (TCMCRT) as an adjunctive treatment for chronic heart failure.

Methods	China National Knowledge Infrastructure (CNKI), Wanfang database, China Science and Technology Journal Database (VIP), Chinese BioMedical Literature Database (CBM), Cochrane Library, PubMed, Web of Science, and EMBASE database were searched to screen randomized controlled trials (RCTs) of TCMCRT for chronic heart failure versus conventional western treatment for chronic heart failure. The Cochrane Risk of Bias Collaboration tool was used to assess the risk of bias in RCTs. Meta-analysis was performed using RevMan 5.3 software to systematically evaluate the effects of conventional western treatment combined with TCMCRT on the cardiac function efficacy, left ventricular ejection fraction (LVEF), left ventricular end-diastolic diameter (LVEDD), N-terminal pro-B-type natriuretic peptide (NT-proBNP), 6-min walk test (6MWT), Minnesota Heart Failure Quality of Life Scale (MLHFQ) and Adverse effects, as well as to evaluate the safety of this treatment modality.
Results	**18 RCT studies** were finally included, with a total of **1388 patients**, including 695 in the experimental group and 693 in the control group. The results of the Meta-analysis showed that the efficacy of improved cardiac function was better in the experimental group than in the control group [RR = 1.24, 95%CI (1.16, 1.32), P < 0.00001]. Improvement of LVEF in the experimental group was better than the control group [MD = 0.04, 95%CI (0.02, 0.05), P < 0.00001]. LVEDD were better in the experimental group than in the control group after treatment [MD = -3.63, 95% CI (-6.14, -1.12), P = 0.005]. The experimental group improved NT-proBNP better than the control group [MD = -586.26, 95%CI (-857.83, -314.68), P < 0.0001]. The experimental group improved 6MWT better than the control group [MD = 38.76, 95%CI (20.77, 56.75), P < 0.0001]. The experimental group improved MLHFQ values better than the control group [MD = -5.93, 95%CI (-7.70, -4.16), P < 0.00001]. Nine of the included studies mentioned the occurrence of adverse reactions, but none reported serious adverse reactions.
Conclusion	The available evidence suggests that TCMCRT has good efficacy in the adjuvant treatment of chronic heart failure. However, due to the limitations of this study, more high-quality studies are needed to further validate this conclusion.

2. Overviews of systematic reviews

2.1. Chua 2025

Chua WJ, Liu J, Lam K, Maunder A, Pandey C, Cave AE, O'Fee A, Yang G, Mousa A, Ee C. The effectiveness and safety of integrative medicine for chronic heart failure: An umbrella review. Complement Ther Med. 2025 Aug;91:103182. https://doi.org/10.1016/j.ctim.2025.103182

Background	Background and purpose: Heart failure (HF) is associated with multi-organ dysfunction and significant morbidity and mortality. Despite advances in treatment, prognosis remains poor, highlighting the need to explore adjunctive therapies such as integrative medicine. This umbrella review synthesises top-tier evidence from systematic reviews and meta-analyses of randomised controlled trials (RCTs) assessing the safety and effectiveness of integrative medicine in patients with HF, in order to inform clinical decision-making.
Methods	We searched MEDLINE, Cochrane, PsycINFO and EMBASE until April 2024. Primary outcomes included mortality, hospitalisation rates, and severity or prognostic indicators, including brain natriuretic peptide (BNP) and exercise capacity. A hierarchical evidence synthesis method was used whereby we included the most recent, highly ranked and comprehensive reviews for our research question. We assessed review quality using 'A MeaSurement Tool to Assess systematic Reviews' and, where possible, evidence certainty for our primary outcomes using the Grading of Recommendations Assessment, Development and Evaluation approach.

Results	Twenty-two reviews were included. Co-enzyme Q10 or Tai Chi may reduce mortality and hospitalisation rates (moderate certainty evidence), and **acupuncture** or intravenous Chinese herbal medicines may improve BNP (low to very low certainty evidence). The benefits of yoga and other nutrient supplements including L-carnitine remain unclear. Vitamin E may increase hospitalisation rates and should be avoided.
Conclusion	The evidence for most integrative medicine modalities for adjunctive management of HF remains limited. Well-designed and rigorous RCTs are needed, particularly with long-term follow up and evaluation of clinically meaningful outcomes.

3. Clinical Practice Guidelines

⊕ positive recommendation (regardless of the level of evidence reported)
Ø negative recommendation (or lack of evidence)

3.1. Scottish Intercollegiate Guidelines Network (SIGN, Scotland) 2016 Ø

Chronic heart failure. Scottish Intercollegiate Guidelines Network (SIGN). 2016:40P. [196026].

There is not enough evidence to tell us if the following can help. Tai chi, Acupuncture