International Journal of General Medicine

Dovepress
Taylor & Francis Group

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ORIGINAL RESEARCH

Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills Combined Therapy for Qi Deficiency, Phlegm, and Blood Stasis Syndrome in Post-PCI Coronary Heart Disease Patients

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Objective: To evaluate the effects of Banxia Gualou Xiebai Tang combined with Qishen Yiqi Dropping Pills on Qi deficiency, phlegm, and blood stasis syndrome in post-percutaneous coronary intervention (PCI) coronary heart disease (CHD) patients.

Methods: A retrospective analysis was conducted on 100 post-PCI CHD patients with Qi deficiency, phlegm, and blood stasis syndrome treated from October 2022 to April 2024. Patients were divided into a control group (n=50, receiving standard secondary prevention) and an observation group (n=50, receiving additional Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills). Treatment efficacy, TCM syndrome scores, cardiac function (LVEF, LVEDD, LVESD, CO), blood lipids (TC, TG, HDL-C, LDL-C), hemorheological parameters (PV, Hct, HSBV, LSBV), and adverse events were compared.

Results: ① The total effective rate in the observation group (92.0%) was significantly higher than in the control group (76.0%) ($P<0.05$). ② TCM syndrome scores significantly improved in both groups, with greater improvement in the observation group at 3 and 6 months ($P<0.05$). ③ Cardiac function: LVEF and CO increased, while LVEDD and LVESD decreased in both groups, with more significant changes in the observation group ($P<0.05$). ④ Blood lipids: TC, TG, and LDL-C decreased, and HDL-C increased in both groups, with greater changes in the observation group ($P<0.05$). ⑤ Hemorheology: PV, Hct, HSBV, and LSBV decreased more in the observation group ($P<0.05$). ⑥ Adverse events: The observation group had a higher incidence of adverse events (22.0% vs 14.0%, $P<0.05$).

Conclusion: Banxia Gualou Xiebai Tang combined with Qishen Yiqi Dropping Pills, alongside standard treatment, significantly improves efficacy, cardiac function, hemorheology, and blood lipids in post-PCI CHD patients without increasing adverse events.

Keywords: banxia gualou xiebai tang, qishen yiqi dropping pills, coronary heart disease, PCI, Qi deficiency, phlegm, blood stasis syndrome, efficacy

Introduction

Coronary heart disease (CHD) is one of the most prevalent cardiovascular diseases globally, with high morbidity and mortality rates. In modern society, its incidence continues to rise due to aging populations and unhealthy lifestyles.[1] The primary pathological mechanism of CHD is coronary atherosclerosis, which leads to insufficient myocardial blood supply, causing symptoms such as chest pain and heart failure that significantly impact patients' quality of life and survival.[2] With advancements in medical technology, percutaneous coronary intervention (PCI) has become a key treatment for CHD, effectively alleviating symptoms and improving prognosis by restoring coronary artery blood flow.[3] However, despite its benefits, PCI may lead to complications, such as the onset of Qi deficiency, phlegm, and

Received: 6 December 2024
Accepted: 11 March 2025
Published: 31 March 2025

blood stasis syndrome.[4] In Traditional Chinese Medicine (TCM), Qi deficiency, phlegm, and blood stasis syndrome describes a pathological condition characterized by Qi deficiency, internal phlegm-dampness, and blood flow stagnation.[5] Qi deficiency can impair spleen and stomach functions, promoting phlegm-dampness formation; phlegm-dampness obstructs Qi and blood flow, causing symptoms like chest tightness and shortness of breath.[6] Blood stasis further exacerbates these conditions, leading to slow recovery or cardiac function deterioration.[7] Studies[8] indicate that 20%-30% of post-PCI patients experience Qi deficiency, phlegm, and blood stasis syndrome, which can hinder recovery and increase adverse event risks if left untreated. Hence, effectively identifying and managing this syndrome in post-PCI patients is crucial for improving outcomes and promoting recovery.

Currently, most treatments for Qi deficiency, phlegm, and blood stasis syndrome rely on Western medicine interventions, but these approaches often have limited efficacy and potential side effects.[9] TCM, with its holistic and syndrome-based treatment principles, has gained increasing attention among clinicians. Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills are classic TCM formulas for managing this syndrome. Banxia Gualou Xiebai Tang, containing Banxia, Gualou, and Xiebai, resolves phlegm, promotes Qi flow, and unblocks channels, effectively alleviating chest tightness and shortness of breath caused by phlegm-dampness.[10] Qishen Yiqi Dropping Pills, on the other hand, replenish Qi, nourish Yin, and strengthen the spleen, addressing fatigue and shortness of breath related to Qi deficiency.[11] The combined application of these two remedies provides comprehensive therapy to regulate Qi deficiency and resolve phlegm-dampness, facilitating recovery. This study retrospectively analyzed the clinical data of 100 post-PCI CHD patients with Qi deficiency, phlegm, and blood stasis syndrome to explore the effects of Banxia Gualou Xiebai Tang combined with Qishen Yiqi Dropping Pills. The findings aim to provide new insights and practical evidence for TCM-based treatments for this condition, contributing to more effective therapeutic strategies for patient recovery.

Materials and Methods

Basic Information

This study retrospectively analyzed clinical data of 100 patients with CHD and post-PCI presenting with Qi-deficiency and phlegm-stasis syndrome who were treated in our hospital between October 2022 and April 2024. The sample size was calculated based on a pilot study showing 25% difference in total effective rate between groups (α=0.05, β=0.2). Using PASS 15.0 software (NCSS, LLC), the minimum required sample size was 84 participants. Considering a 15% potential dropout rate, 100 participants were ultimately enrolled.

The diagnostic criteria for the study subjects were based on the Guidelines for the Rational Use of Drugs for Coronary Heart Disease (2nd Edition)[12] and the Diagnostic Criteria for Qi-Deficiency and Phlegm-Stasis Syndrome in TCM,[13] combined with results from coronary angiography, electrocardiography, and echocardiography. According to traditional Chinese medicine (TCM), "Qi deficiency, phlegm, and blood stasis syndrome" is a common pathological condition characterized by the interplay of Qi deficiency, phlegm dampness, and blood stasis. Symptoms of Qi deficiency include shortness of breath, fatigue, weak cough, difficulty in expectorating phlegm, a low voice, and lack of energy. Patients often exhibit noticeable shortness of breath and reluctance to speak, especially during fatigue or when experiencing difficulty in breathing. Phlegm dampness manifests as obstruction due to phlegm, with patients presenting a cough but producing little or no phlegm. In cases where there are chronic shadows or fibrosis in the lungs, patients may experience chronic cough or wheezing, with a sensation of breathlessness. Blood stasis symptoms are reflected through imaging examinations (such as X-rays or CT scans) showing chronic lung shadows, fibrosis, or nodules, which are considered manifestations of "phlegm and blood stasis obstruction" often accompanied by shortness of breath, chronic cough, or wheezing. Furthermore, the imaging findings of chronic lung shadows, fibrosis, and residual lesions, especially in patients who do not expectorate large amounts of phlegm during coughing, are also regarded as manifestations of "phlegm and blood stasis obstruction.

Inclusion Criteria: (1) Age 18–75 years, regardless of gender. (2) Diagnosed with CHD and completed PCI treatment. (3) Met the TCM diagnostic criteria for Qi-deficiency and phlegm-stasis syndrome. (4) Voluntarily participated in the study and signed an informed consent form. Exclusion Criteria: (1) Presence of other severe cardiovascular diseases requiring further surgical intervention. (2) Combined severe hepatic or renal insufficiency or other life-threatening

systemic diseases. (3) Severe mental illness and/or functional disorders that hinder cooperation with the study or follow-up. (4) Allergies or contraindications to the drugs and procedures used in this study. (5) Pregnant or lactating women. During data analysis, patients found not to meet the inclusion criteria or exhibiting poor compliance were excluded, and the reasons were documented. Furthermore, patients who experienced severe adverse reactions, voluntarily withdrew, or were lost to follow-up due to other reasons were categorized under the dropout criteria, and their specific circumstances were noted during analysis. This study has been approved by the Medical Ethics Committee of the Affiliated Hospital of Gansu Medical University (Approval No. ZY24-GXB015), and the research process strictly adhered to ethical guidelines. All the methods were carried out in accordance with the Declaration of Helsinki.

Treatment Methods

Control Group

The control group received standard secondary prevention therapy for CHD based on the Guidelines for the Rational Use of Drugs for Coronary Heart Disease (2nd Edition),[12] including antiplatelet agents, statins, β-blockers, and angiotensin-converting enzyme inhibitors (ACEIs), as clinically indicated.

Observation Group

The observation group received the same standard secondary prevention therapy as the control group, along with additional treatment using Banxia Gualou Xiebai Tang combined with Qishen Yiqi Dropping Pills. The specific drug regimens were as follows: (1) Banxia Gualou Xiebai Tang: Consisting of 15 g of Trichosanthes fruit (Gualou), 15 g of Chinese chive (Xiebai), 9 g of prepared Pinellia tuber (Banxia), and 30 mL of white wine. The ingredients were decocted to prepare 400 mL of soup, divided into two doses of 200 mL each, and taken after meals in the morning and evening. Rationale for Dosage: The formula was adapted from the classical prescription in Jin Gui Yao Lue (Synopsis of the Golden Chamber) for chest obstruction syndrome,[14] with dosage adjustments (eg, reduced white wine volume from 7 L to 30 mL) to align with modern decoction practices and patient tolerance. The selected doses of Gualou (15g) and Xiebai (15g) were further supported by pharmacokinetic studies indicating optimal bioavailability for resolving phlegm and activating qi.[15] (2) Qishen Yiqi Dropping Pills: Composed of Astragalus root (Huangqi), Salvia miltiorrhiza (Danshen), Panax notoginseng (Sanqi), and Dalbergia odorifera (Jiangxiang). Manufactured by Tasly Pharmaceutical Group Co., Ltd., the National Drug Approval Number is Z20030139, with a specification of 0.5 g × 15 sachets. The pills were administered orally 30 minutes after meals, 0.5 g per dose, three times per day. Rationale for Standardization: The dosage (0.5 g tid) and formulation followed the Chinese Pharmacopoeia (2020 Edition)[16] and the manufacturer's instructions, which were validated in Phase III clinical trials demonstrating efficacy in improving cardiac function and reducing inflammatory markers in CHD patients.[17] The combination of BGXT and QSYQ was based on prior evidence of their synergistic effects on qi deficiency and blood stasis.[18]

Treatment Duration

Both groups were treated continuously for six months. This duration was selected to observe mid-term therapeutic effects, consistent with the 2022 Chinese Guidelines for TCM Management of Chronic Coronary Syndromes,[19] which recommend a minimum of 6 months for evaluating herbal interventions in post-PCI patients with qi-phlegm-blood stasis syndrome.

Observation Indicators

Treatment Efficacy

A reduction in TCM symptom score of >70% was considered markedly effective; a reduction of 30%–69% was effective; a reduction of <30% was ineffective. Total effective rate = 100% − (number of ineffective cases/total cases × 100%).

TCM Symptom Scores

Assessed before treatment, at 3 months, and at 6 months post-treatment, based on the Guidelines for Clinical Research of New Chinese Medicines.[20] TCM symptoms included eight items: chest pain, chest tightness, triggers, shortness of breath, facial and lip pallor, palpitations, spontaneous sweating, and fatigue. Chest pain and chest tightness were scored 0, 2, 4, 6; other items were scored 0, 1, 2, 3, with a total score range of 0–30. Higher scores indicated more severe symptoms.

Cardiac Function Parameters

Evaluated using echocardiography before and after treatment (6 months), including left ventricular ejection fraction (LVEF), left ventricular end-diastolic diameter (LVEDD), left ventricular end-systolic diameter (LVESD), and cardiac output (CO).

Blood Lipid Levels

Peripheral venous blood samples (5 mL) were collected under fasting conditions using plain tubes (red-top, no anticoagulant). Samples were allowed to clot at room temperature for 30–40 minutes, then centrifuged at 3,000 r/min for 10 minutes to obtain serum. The serum supernatant was stored in sterile EP tubes at −80°C until analysis. Blood lipid parameters, including total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), and low-density lipoprotein cholesterol (LDL-C), were measured using a Roche Cobas c 501 automated biochemical analyzer (Roche Diagnostics, Germany) with standardized reagent kits (Cat. No. 05168787 for TC, 11730759 for TG, 04718914 for HDL-C, 03039773 for LDL-C).

Hemorheological Indicators

Peripheral venous blood samples (5 mL) were collected under fasting conditions using EDTA anticoagulant tubes (lavender-top). Whole blood samples were analyzed within 2 hours of collection to ensure stability of rheological properties. Hemorheological parameters, including plasma viscosity (PV), hematocrit (Hct), high-shear whole blood viscosity (HSBV), and low-shear whole blood viscosity (LSBV), were measured using an LBY-N7500 Automatic Hemorheology Analyzer (Beijing Precil Instrument Co., Ltd., China).

Adverse Events

Adverse events such as gastrointestinal reactions, hepatic or renal function impairment, abnormal blood pressure, dizziness, headaches, skin reactions, acute myocardial infarction, acute heart failure, and arrhythmias were uniformly recorded by relevant medical personnel in the hospital.

Statistical Analysis

GraphPad Prism 8 was used for graphing, and SPSS 22.0 software was used for statistical processing. Categorical data were expressed as percentages (%) and analyzed using the χ^2-test. Continuous data were expressed as ($\bar{x} \pm s$). Between-group comparisons were conducted using an independent sample *t*-test, while paired t-tests were used for within-group comparisons. Repeated measures ANOVA was used for comparisons at different time points between groups. A p-value < 0.05 was considered statistically significant.

Results

Comparison of Basic Information

The comparison of basic demographic and clinical data, including gender, age, disease duration, BMI, smoking history, drinking history, hypertension history, diabetes history, hyperlipidemia history, and stroke history, between the two groups showed no significant differences (P > 0.05), indicating comparability. See Table 1.

Comparison of Treatment Effects

In the control group (n = 50), 13 cases were significantly effective, 25 were effective, and 12 were ineffective. In the observation group (n = 50), 19 cases were significantly effective, 27 were effective, and 4 were ineffective. The total effective rate in the observation group (92.0%) was significantly higher than that in the control group (76.0%) (P < 0.05). See Figure 1.

Comparison of TCM Syndrome Scores

The TCM syndrome scores of the control group before treatment, 3 months after treatment, and 6 months after treatment were (20.17 ± 4.05, 16.69 ± 3.43, 13.58 ± 3.39), respectively. The corresponding scores in the observation group were (19.69 ± 3.98, 14.02 ± 3.51, 9.52 ± 3.28). There were significant differences between groups (F = 6.845), over time (F = 9.472), and in interaction effects (F = 7.754) (P < 0.05). Within-group: Both groups showed lower TCM syndrome scores

Table 1 Comparison of Basic Information ($\bar{x} \pm s$, n [%])

	Control (n=50)	Observation (n=50)	t/x^2	*P*
Gender	–	–	0.161	0.688
Male	28 (56.0)	26 (52.0)	–	–
Female	22 (44.0)	24 (48.0)	–	–
Age (years)	65.75±8.14	66.31±7.98	0.347	0.729
Disease duration (years)	4.53±1.58	4.37±1.67	0.492	0.623
BMI (kg/m²)	23.48±2.54	23.85±2.19	0.780	0.437
Smoking history	21 (42.0)	25 (50.0)	0.644	0.422
Drinking history	10 (20.0)	13 (26.0)	0.508	0.475
Hypertension history	37 (74.0)	32 (64.0)	1.168	0.279
Diabetes history	18 (36.0)	24 (48.0)	1.477	0.224
Hyperlipidemia history	19 (38.0)	22 (44.0)	0.372	0.541
Stroke history	8 (16.0)	7 (14.0)	0.078	0.779

at 3 and 6 months after treatment compared to before treatment ($P < 0.05$). Between-group: There was no significant difference in TCM syndrome scores before treatment ($P > 0.05$), but the observation group had significantly lower scores than the control group at 3 and 6 months after treatment ($P < 0.05$). See Figure 2.

Comparison of Cardiac Function Indicators

Before and after treatment, the LVEF, LVEDD, LVESD, and CO in the control group were (38.86 ± 4.32, 43.51 ± 4.47), (61.17 ± 4.12, 57.08 ± 3.44), (46.35 ± 5.08, 42.57 ± 4.11), and (4.58 ± 0.61, 4.93 ± 0.42), respectively. In the observation group, the corresponding values were (40.12 ± 4.15, 47.68 ± 5.53), (60.79 ± 4.16, 53.21 ± 2.48), (46.49 ± 4.87, 39.14 ± 3.72), and (4.42 ± 0.57, 5.34 ± 0.36). Both groups showed increased LVEF and CO and decreased LVEDD and LVESD after treatment, with greater changes in the observation group ($P < 0.05$). See Figure 3.

Comparison of Blood Lipid Indicators

After treatment, both groups showed decreased levels of TC, TG, and LDL-C, and increased levels of HDL-C. The observation group had more significant changes ($P < 0.05$). See Table 2.

Comparison of Hemorheology Indicators

The levels of PV, Hct, HSBV, and LSBV in both groups decreased after treatment, with a greater degree of change in the observation group ($P < 0.05$), as shown in Table 3.

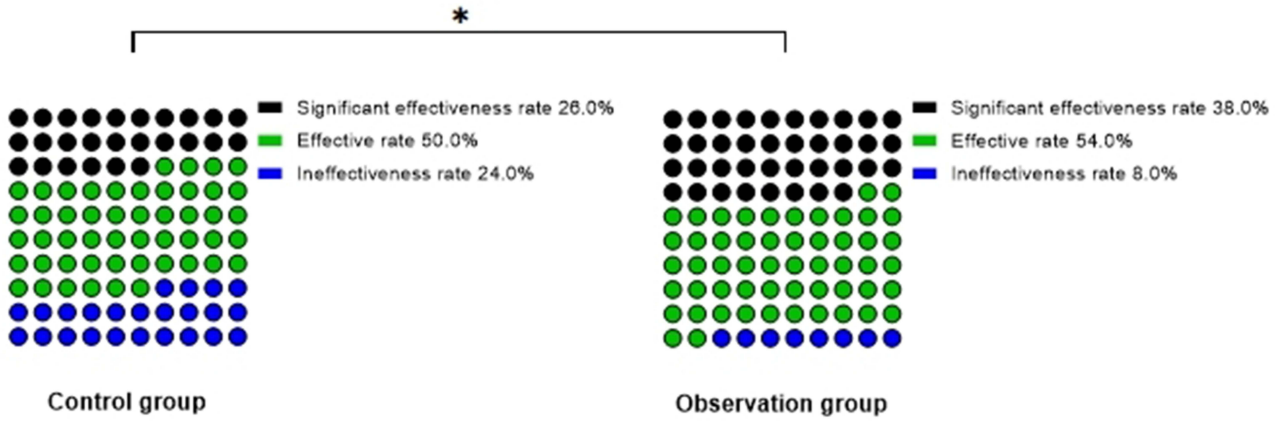

Figure 1 Comparison of Clinical Treatment Effects [n (%)].
Note: * indicates statistical significance in inter-group comparison ($P < 0.05$).

https://doi.org/10.2147/IJGM.S510793

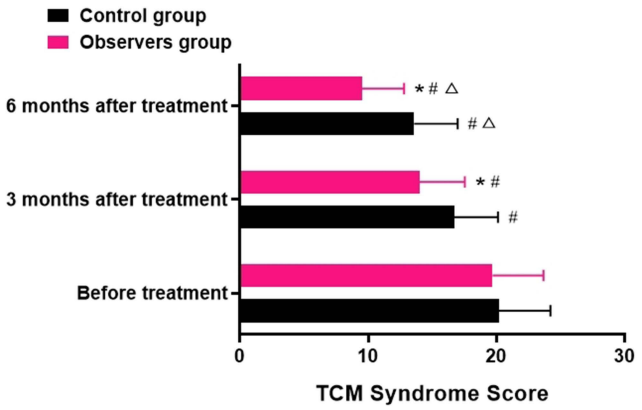

Figure 2 Comparison of TCM Syndrome Scores ($\bar{x} \pm s$, points).
Note: *P < 0.05, compared with the control group at the same time point; #P < 0.05, compared with pre-treatment within the same group; ΔP < 0.05, compared with 3 months post-treatment within the same group.

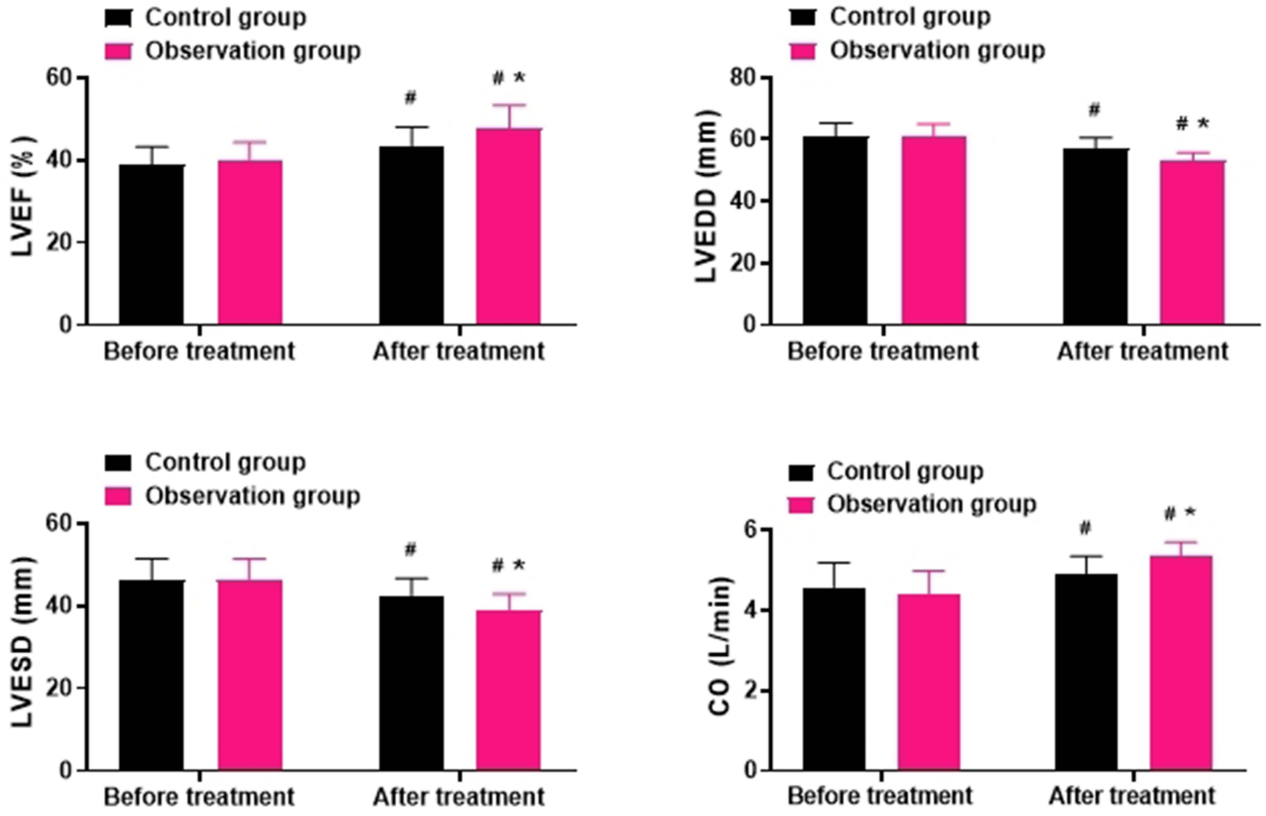

Figure 3 Comparison of Cardiac Function Indicators ($\bar{x} \pm s$).
Note: Compared with the control group at the same time point, P < 0.05; compared with before treatment in the same group, #P < 0.05. *P < 0.05.

Comparison of Adverse Event Incidence

The adverse event incidence in the control group (14.0%) and observation group (22.0%) was compared (P < 0.05). The severity of the adverse events was mild in both groups and improved on its own, as shown in Table 4.

Table 2 Comparison of Blood Lipid Indicators ($\bar{x} \pm s$, mmol/L)

	Control (n=50)	Observation (n=50)	t	P
TC	–	–	–	–
Before treatment	7.49±0.49	7.53±0.61	0.361	0.718
After treatment	5.16±0.64#	4.33±0.17#	8.862	<0.001
TG	–	–	–	–
Before treatment	2.72±0.63	2.78±0.597	0.491	0.624
After treatment	1.57±0.28#	1.02±0.53#	6.488	<0.001
LDL-C	-	-	-	-
Before treatment	3.89±1.54	3.85±1.43	0.134	0.893
After treatment	2.33±1.02#	1.21±0.87#	5.907	<0.001
HDL-C	-	-	-	-
Before treatment	1.24±0.23	1.21±0.26	0.611	0.542
After treatment	1.43±0.38#	1.87±0.32#	6.262	<0.001

Note: Compared with before treatment in the same group, #P < 0.05.
Abbreviations: TC, Total Cholesterol; TG, Triglycerides; LDL-C, Low-Density Lipoprotein Cholesterol; HDL-C, High-Density Lipoprotein Cholesterol.

Table 3 Comparison of Hemorheology Indicators ($\bar{x} \pm s$)

	Control (n=50)	Observation (n=50)	t	P
PV (mPa·s)	–	–	–	–
Before treatment	1.42 ± 0.05	1.41 ± 0.06	0.905	0.367
After treatment	1.25 ± 0.12#	1.17 ± 0.15#	2.944	0.004
Hct (%)	–	–	–	–
Before treatment	47.85 ± 5.12	48.12 ± 4.79	0.272	0.786
After treatment	44.07 ± 5.58#	41.23 ± 6.05#	2.440	0.016
HSBV (mPa·s)	–	–	–	–
Before treatment	5.47 ± 0.56	5.58 ± 0.54	0.999	0.319
After treatment	5.09 ± 0.44	4.92 ± 0.37	2.091	0.039
LSBV (mPa·s)	–	–	–	–
Before treatment	14.16 ± 1.87	14.07 ± 1.93	0.236	0.813
After treatment	13.02 ± 2.05	11.42 ± 1.94	4.008	<0.001

Note: Compared with before treatment in the same group, #P < 0.05.
Abbreviations: PV, Plasma Viscosity; Hct, Hematocrit; HSBV, High-Shear Whole Blood Viscosity; LSBV, Low-Shear Whole Blood Viscosity.

Table 4 Comparison of Adverse Event Incidence [n (%)]

Adverse Event	Control (n=50)	Observation (n=50)	x^2	P
Gastrointestinal Reaction	2 (4.0)	2 (4.0)	–	–
Hepatic and Renal Dysfunction	1 (2.0)	2 (4.0)	–	–
Abnormal Blood Pressure	0 (0.0)	1 (2.0)	–	–
Dizziness and Headache	1 (2.0)	2 (4.0)	–	–
Skin Reaction	0 (0.0)	2 (4.0)	–	–
Acute Myocardial Infarction	1 (2.0)	1 (2.0)	–	–
Acute Heart Failure	1 (2.0)	0 (0.0)	–	–
Arrhythmia	1 (2.0)	1 (2.0)	–	–
Total Incidence	7 (14.0)	11 (22.0)	1.084	0.297

Discussion

Patients undergoing PCI (Percutaneous Coronary Intervention) for coronary heart disease often face a range of complex complications, among which the pattern of Qi deficiency, phlegm, and blood stasis is one of the more common

pathological conditions.[21] This condition, characterized by a combination of Qi deficiency, phlegm dampness, and blood stasis, manifests with symptoms such as shortness of breath, fatigue, chest tightness, excessive phlegm, palpitations, and pale complexion.[22] For patients post-PCI, the occurrence of Qi deficiency, phlegm, and blood stasis not only affects their postoperative recovery but also directly impacts their quality of life and prognosis.[23] Therefore, effectively intervening and treating this pattern is crucial for promoting comprehensive recovery in these patients, making it a key issue in clinical treatment. Although traditional Western medicine can alleviate symptoms, it often focuses on a single pathological mechanism and is typically accompanied by various toxic side effects. In contrast, TCM can treat the disease through syndrome differentiation, comprehensively adjusting factors such as Qi and blood, phlegm dampness, and blood stasis, offering a more personalized and systematic therapeutic effect.[24,25] While some studies[26,27] have explored the use of TCM in treating coronary heart disease, there is still limited research on treating Qi deficiency, phlegm, and blood stasis in post-PCI patients. Thus, this study aims to assess the efficacy of combining Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills in patients with Qi deficiency, phlegm, and blood stasis after PCI and explore their effects and mechanisms in improving cardiac function, blood lipids, blood rheology, and other clinical indicators.

The results of this study show that the total effective rate in the observation group (92.0%) was higher than that in the control group (76.0%) ($P < 0.05$). Furthermore, the TCM syndrome score in the observation group was lower than that in the control group both at 3 months and 6 months after treatment ($P < 0.05$). The observation group had higher levels of LVEF, CO, and HDL-C, while LVEDD, LVESD, TC, TG, LDL-C, PV, Hct, HSBV, and LSBV were significantly lower than those in the control group ($P < 0.05$). The adverse event incidence was compared between the control group (14.0%) and the observation group (22.0%) ($P < 0.05$). The findings of this study are consistent with previous related studies,[28,29] indicating that the combination of Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills can significantly improve clinical symptoms, cardiac function, blood lipid levels, and blood rheology in post-PCI patients, with a good safety profile. TCM regards coronary heart disease as belonging to the categories of "chest obstruction" and "heart pain" with the disease mainly affecting the heart, closely related to the liver, spleen, and kidneys. The pathological mechanism often involves both deficiency and excess, with Qi deficiency as the root and phlegm and blood stasis as the manifestations.[30] Factors such as old age, physical weakness, emotional imbalance, and improper diet can lead to spleen dysfunction, water and dampness accumulation, and phlegm formation. Phlegm and blood stasis can block the heart's vessels, thereby inducing the disease.[31] Therefore, treatment should focus on resolving phlegm, eliminating blood stasis, tonifying Qi, and activating blood circulation to enhance the therapeutic effect. This study used Banxia Gualou Xiebai Tang combined with Qishen Yiqi Dropping Pills to treat Qi deficiency, phlegm, and blood stasis in post-PCI coronary heart disease patients, guided by TCM theory and modern pharmacological research, forming an integrated treatment approach targeting multiple levels and pathways. Banxia Gualou Xiebai Tang originates from Jinkui Yaolüe, consisting of Gualou (Trichosanthes fruit), Xiebai (Chinese garlic), Fabanxia (Pinellia tuber), and Baijiu (Chinese white wine).[32] Gualou has the effect of broadening the chest, dissolving masses, and resolving phlegm; Xiebai warms and promotes the circulation of Yang, resolves phlegm, and facilitates Qi flow; Fabanxia dries dampness, resolves phlegm, and, when combined with Baijiu, enhances the effect of promoting Yang. Modern pharmacological studies[33,34] show that Gualou has anti-inflammatory, antioxidant, and vasodilation effects, while Xiebai improves coronary blood flow and alleviates myocardial ischemia. While Banxia Gualou Xiebai Tang is effective in resolving phlegm and promoting the circulation of Qi and blood, its blood-activating effect is relatively insufficient. Therefore, Qishen Yiqi Dropping Pills, which supplements this deficiency, is used in conjunction. Qishen Yiqi Dropping Pills contains Huangqi (Astragalus), Danshen (Salvia miltiorrhiza), Jiangxiang (Incense), and Sanqi (Panax notoginseng). Huangqi tonifies Qi, strengthens the spleen, and astringes sweat; Danshen activates blood, removes blood stasis, and improves myocardial ischemia; Jiangxiang and Sanqi promote blood circulation, remove blood stasis, and relieve pain. Modern studies[35,36] show that Huangqi reduces peripheral resistance, reduces cardiac load, and protects myocardial cell structure, while Danshen improves myocardial energy metabolism and reduces ischemic myocardial injury. Furthermore, the combined application of Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills can exert a synergistic effect through dual mechanisms. Banxia Gualou Xiebai Tang focuses on resolving phlegm, promoting Qi, and unblocking the chest, suitable for alleviating symptoms such as chest tightness and shortness of breath caused by Qi stagnation, blood stasis, and phlegm dampness. In contrast, Qishen Yiqi Dropping Pills tonifies Qi, nourishes Yin, and activates blood, helping to regulate the spleen and stomach

and improve symptoms such as fatigue and palpitations caused by Qi deficiency. The combination of the two medicines helps to adjust the patient's Qi and blood status from different angles, thus enhancing the therapeutic effect.

Despite the promising results, this study has several limitations: (1) Relatively small sample size: Although this study was conducted on a certain number of post-PCI patients with Qi deficiency, phlegm, and blood stasis, the sample size remains limited, which may affect the statistical significance of the results and introduce potential biases. (2) Short study duration, long-term effects not assessed: The observation period in this study was short, and the long-term efficacy of the combined treatment was not systematically evaluated. Although significant effects were observed in the short term, the long-term effects, prognosis, and recurrence risks in post-PCI patients with Qi deficiency, phlegm, and blood stasis have yet to be fully verified. (3) Lack of in-depth exploration of the specific doses and compatibility mechanisms of the herbal treatment: While this study observed the combined use of Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills, the discussion on the specific doses and compatibility mechanisms of these formulas was relatively simple. Different doses and formulas may affect the therapeutic effect of the medicines. (4) No in-depth pharmacological mechanism exploration: Although this study demonstrated the efficacy of the combined treatment from a clinical perspective, its specific pharmacological mechanisms have not been explored at the cellular or molecular level. For instance, how the drugs work through specific pathways such as regulating inflammatory factors, oxidative stress, and microcirculation is not yet clear. (5) Lack of subgroup analysis of different patient populations: Clinical manifestations of coronary heart disease vary among individuals, and the presentation, severity, and comorbidity of Qi deficiency, phlegm, and blood stasis can differ. This study did not perform a subgroup analysis, which may limit the applicability of the results to different types of coronary heart disease patients (eg, with or without diabetes, hypertension, or other cardiovascular diseases). In summary, although this study demonstrates the efficacy of combining Banxia Gualou Xiebai Tang and Qishen Yiqi Dropping Pills in treating Qi deficiency, phlegm, and blood stasis in post-PCI coronary heart disease patients, there are still limitations such as the small sample size, lack of long-term effect evaluation, and insufficient exploration of the pharmacological mechanisms. Future research should focus on overcoming these limitations, further exploring the mechanisms of Chinese herbal compound treatment, and assessing the long-term effects, to provide more reliable and in-depth theoretical support for the clinical treatment of Qi deficiency, phlegm, and blood stasis after coronary heart disease surgery.

Conclusion

This study demonstrates that combining Banxia Gualou Xiebai Tang with Qishen Yiqi Dropping Pills significantly improves symptoms and clinical outcomes in post-PCI CHD patients with Qi deficiency, phlegm, and blood stasis syndrome. By regulating Qi, blood, and phlegm, this treatment enhances cardiac function, blood rheology, and lipid profiles, supporting better recovery compared to Western medicine alone. The combined approach offers a holistic, personalized treatment strategy with strong clinical potential for long-term post-PCI recovery.

Funding

Study on the effect of Banxia Gualou Xyebai Decoction combined with Qishenyiqi dropping pill in treating the syndrome of Qi deficiency and phlegm stasis after PCI of coronary heart disease.

Disclosure

The authors report no conflicts of interest in this work.

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