Study on the Effect and Value of Guizhi Licorice Dragon Bone Oyster Modified Decoction in the Treatment of Ventricular Premature Beats in Coronary Heart Disease

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Abstract: Objective: To investigate the efficacy and value of Guizhi Gancao Longgu Muli Jiawei Tang in the treatment of premature ventricular complexes (PVCs) in coronary heart disease. Method: From January 2022 to August 2024, 96 patients with PVCs in our hospital were selected as the research subjects. The patients were randomly divided into a reference group (n=48, treated with conventional therapy) and a study group (n=48, treated with Guizhi Gancao Longgu Muli Jiawei Tang) using a random number table method. Compare the clinical efficacy, pre - and post-treatment electrocardiogram indicators, blood lipid levels (triglycerides, low-density lipoprotein, high-density lipoprotein), traditional Chinese medicine syndrome scores, and incidence of adverse reactions between two groups. The total clinical effective rate of the research group was 95.83% (46/48), which was higher than the reference group's 75.00% (36/48), and the difference was significant (P<0.05). The electrocardiogram of the research group was superior to that of the reference group, with a significant difference (P<0.05). After treatment, the levels of triglycerides, low-density lipoprotein, and high-density lipoprotein in the study group were significantly lower than those in the reference group (P<0.05). After treatment, the TCM syndrome score of the study group was lower than that of the reference group, and the difference was significant (P<0.05). The incidence of adverse reactions in the study group (2.08%) was significantly different from that in the reference group (16.66%) (P<0.05). Conclusion: Guizhi Licorice Dragon Bone Oyster Modified Decoction has a significant effect in assisting the treatment of PVCs, which can effectively improve the condition, alleviate clinical symptoms, regulate blood lipid levels, and reduce the incidence of adverse reactions.
***Keywords*:** Guizhi Licorice Dragon Bone Oyster Modified Soup; Coronary heart disease; Ventricular premature beats

1. Introduction

Premature ventricular complexes (PVCs) in coronary heart disease are caused by abnormal cardiac rhythms and are closely related to damage to the cardiac conduction system. Patients with coronary heart disease experience abnormal blood supply to the myocardium due to coronary artery occlusion and stenosis, leading to abnormal discharge of cardiac conduction and causing premature ventricular contractions. Clinical manifestations often include palpitations, chest pain, fatigue, and difficulty breathing, which seriously affect the patient's physical health. At present, PVCs are mainly treated with diuresis, cardiotonic effects, and vasodilation. Although they can improve the condition to a certain extent, some patients are prone to recurrent attacks after treatment and may also cause complications. At present, traditional Chinese medicine has been widely used in clinical practice to treat ventricular premature beats in coronary heart disease, and has achieved good results. Traditional Chinese medicine believes that PVCs belong to the categories of "palpitations" and "heartache", which are attributed to Yang Qi deficiency, poor blood flow, obstructed meridians, combined with invasion of external pathogens and excessive fatigue, resulting in heart meridian obstruction. Therefore, it is advocated to treat them with the method of unblocking the heart meridian. Guizhi Licorice Dragon Bone Oyster Modified Soup is composed of traditional Chinese medicinal herbs such as Guizhi, Paeonia lactiflora, and oysters. It has the effects of calming the mind, promoting blood circulation, nourishing the heart muscle, tonifying the heart and kidneys, and calming and nourishing qi. Based on this, this study selected 96 patients with PVCs from our hospital, aiming to explore the application value of Guizhi Gancao Longgu Oyster Modified Decoction in the treatment of PVCs. The analysis is as follows.

2. Data and Methods

2.1 General Information

From January 2022 to August 2024, 96 patients with PVCs in our hospital were selected as the research subjects. The

patients were randomly divided into a reference group (n=48, treated with conventional therapy) and a study group (n=48, treated with Guizhi Gancao Longgu Muli Jiawei Tang) using a random number table method. Among them, there were 26 males and 22 females in the research group, aged 52-73 years, with a median value of (61.65 ± 4.09) years; The duration of the disease ranges from 1 to 9 years, with a median value of (5.08 ± 1.25) years; There were 28 males and 20 females in the reference group, aged 51-74 years, with an average age of (61.78 ± 4.24) years; The course of illness ranges from 1 to 8 years, with an average duration of (5.07 ± 1.39) years. The baseline data of the two groups were balanced and comparable (P>0.05).

2.2 Selection criteria

Inclusion: (1) meeting the diagnostic criteria for PVCs [5-6]; (2) Lown classification (1-4 A) for ventricular premature beats; (3) The patient is informed and signs a consent form. Exclusion: (1) Severe malignant tumors; (2) Drug allergy; (3) Poor compliance; (4) Liver and kidney dysfunction; (5) Patients with multiple organ failure; (6) Cognitive and mental disorders.

2.3 Method

The reference group was administered aspirin enteric coated tablets (Lepu Hengyuan Pharmaceutical Co., Ltd., national drug approval number H20227122) 100mg/time, once daily, orally; Nitroglycerin tablets (Shandong Xinyi Pharmaceutical Co., Ltd., national drug approval number H37021445), 0.5mg/time, once daily, sublingual administration; Wenxin Granules (Shandong Changbu Pharmaceutical Co., Ltd., National Medical Products Administration Approval No. Z10950026), 9g/time, 3 times a day, orally. Treat for a total of 4 weeks.

On the basis of the reference group, the research group added Guizhi Gancao Longgu Oyster Modified Decoction for treatment. The formula consists of 30g of raw dragon bone and oysters, 20g of Guizhi, 10g of Danshen, Yanhusuo, and Yuanzhi each, 12g of peach kernels and night wisteria each, 5g of licorice, and 400mL of water decoction. One dose is taken daily, divided into morning and evening, for a total of 4 weeks of treatment.

2.4 Efficacy evaluation criteria

Both groups of efficacy were evaluated after treatment, and according to the clinical disease diagnosis and efficacy judgment criteria [7], patients with complete disappearance of palpitations, disappearance of ventricular premature beats, and recovery of ST-T on two electrocardiograms were considered cured; Significant improvement in dynamic and electrocardiogram, disappearance of palpitations, an 80% increase in ST-T (compared to before treatment), and occasional occurrence of ventricular premature beats as a significant effect; The dynamic and electrocardiogram have improved, palpitations have disappeared, the number of ventricular premature beats (compared to before treatment) has decreased by more than 50%, the duration has been shortened by 50%, and the number of ventricular premature beats has been reduced by 1 degree, which is considered effective; Palpitations and electrocardiogram examination did not improve, and even worsened to be ineffective. Include recovery, significant improvement, and effectiveness in the total effective rate.

2.5 Observation indicator

(1): Total effective rate of two groups. (2) Comparison of two groups of electrocardiogram indicators. (3) Two groups of triglycerides, low-density lipoprotein, and high-density lipoprotein levels were measured before and after treatment. 3mL of venous blood was collected, and serum was separated and measured using a blood lipid monitor. (4) Two groups of traditional Chinese medicine syndrome scores are graded according to the severity of symptoms [8]. The main symptoms are scored as 6, 4, 2, and 0 for severe, moderate, mild, and none, respectively. The higher the score, the more severe the symptoms. (5) Comparison of the incidence of adverse reactions between two groups, including gastrointestinal discomfort, dizziness, nausea, and angina pectoris.

2.6 Statistical analysis

Statistical analysis was performed using SPSS 22.0 software for data processing. n (%): count data, chi square false test was performed, (± s): measure data, t-test was performed, P<0.05: significant difference.

3. Results

3.1 Comparison of clinical efficacy between two groups

The total clinical effective rate of the research group was 95.83%, which was higher than the reference group's 75.00% (P<0.05). See Table 1.

Table 1. Comparison of clinical efficacy between two groups n (%)

Group	Example number	Invalid	Effective	Significant effect	Recovery	Overall effective
Research group	48	2(4.16)	8(16.66)	28(58.33)	10(20.83)	46(95.83)
Reference group	48	12(25.00)	17(35.41)	16(33.33)	3(6.25)	36(75.00)
χ^2						8.362
P						0.003

3.2 Comparison of two groups of electrocardiogram indicators

The electrocardiogram of the research group was superior to that of the reference group (P<0.05). See Table 2.

Table 2. Comparison of ECG indicators between two groups ($\bar{x} \pm s$)

Group	Example number	T-wave change number	ST segment depression number	ST segment depression amplitude	Number of premature ventricular contractions (24 hours)
Research group	48	2.11±1.29	0.87±0.49	0.39±0.19	1115.49±909.21
Reference group	48	5.21±2.21	1.78±0.91	0.87±0.29	2154.30±611.78
t		8.393	6.100	9.592	6.567
P		<0.001	<0.001	<0.001	<0.001

3.3 Comparison of Blood Lipid Levels between Two Groups

After treatment, the blood lipid levels in the study group were significantly lower than those in the reference group (P<0.05). See Table 3.

Table 3. Comparison of blood lipid levels between two groups ($\bar{x} \pm s$, mmol/L)

Group	Example number	Triglyceride		Low density lipoprotein		High density lipoprotein	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Research group	48	2.19±0.49	1.84±0.29	3.99±0.32	3.51±0.32	0.79±0.14	0.49±0.21
Reference group	48	2.21±0.32	2.09±0.32	3.87±0.49	3.79±0.49	0.78±0.17	0.65±0.32
t		0.237	4.011	1.421	3.315	0.315	2.896
P		0.813	<0.001	0.159	0.001	0.754	0.005

3.4 Comparison of Traditional Chinese Medicine Syndrome Points between Two Groups

After treatment, the TCM syndrome score of the study group was lower than that of the reference group, and the difference was significant (P<0.05). See Table 4.

Table 4. Comparison of Traditional Chinese Medicine Syndrome Scores between Two Groups ($\bar{x} \pm s$, points)

Group	Example number	Before treatment	After treatment
Research group	48	24.66±5.62	12.32±3.62
Reference group	48	25.11±5.43	19.33±6.63
t		0.399	6.429
P		0.691	<0.001

3.5 Comparison of Adverse Reaction Rates between Two Groups

The incidence of adverse reactions in the study group (2.08%) was significantly different from that in the reference group (16.66%) (P<0.05). See Table 5.

Table 5. Comparison of Adverse Reaction Rates between Two Groups n (%)

Group	Example number	Dizzy	Angina pectoris	Nausea	Gastrointestinal discomfort	Always occurring
Research group	48	0(0.00)	0(0.00)	1(2.08)	0(0.00)	1(2.08)
Reference group	48	1(2.08)	4(8.33)	2(4.16)	1(2.08)	8(16.66)
$\chi 2$						6.007
P						0.014

4. Discussions

PVCs are common cardiovascular diseases, which are mainly caused by myocardial ischemia, leading to the improvement of self-discipline, and then affecting the heart conduction system. The incidence rate of PVCs in patients with ischemic heart disease and cardiac insufficiency is about 90% [9]. At present, although Western medicine can improve the condition of PVCs to a certain extent, there are significant adverse reactions and they cannot be used for a long time. Therefore, traditional Chinese medicine has been widely concerned about the treatment of PVCs.

Traditional Chinese Medicine believes that PVCs belong to the category of "palpitations", which are mainly manifested clinically as restlessness, anxiety, lack of autonomy, accompanied by restlessness, chest tightness, chest pain, shortness of breath, fatigue, dizziness, sweating, dark red and light red tongue, pulse stimulation, generation, stagnation, and counting. They are mainly attributed to the loss of nourishment in the heart, disturbance of the mind and spirit by evil, blood stasis in the heart, Yang and Yin strings, disorder of qi and blood, and poor emotions, leading to abnormal heartbeat, damage to qi, blood, and yin and yang, resulting in palpitations due to the loss of nourishment in the heart; The stagnation of the heart and blood vessels, as well as the obstruction of phlegm and dampness, can lead to the obstruction of qi and blood flow. Therefore, the main treatment principles advocated are to calm the mind, invigorate qi, and promote blood circulation. In Guizhi Licorice Dragon Bone Oyster Modified Soup, Guizhi can promote blood circulation and warm meridians; Having a dragon bone can lead to a peaceful sleep; Raw oysters can quench the wind, calm the liver, and lower and upper the body; Yejiaoteng can calm the mind, nourish the heart, dispel wind and unblock meridians; Peach kernels can dispel blood stasis and promote blood circulation; Yanhusuo can promote qi, relieve pain, and activate blood circulation; Danshen can warm the meridians, promote blood circulation, remove blood stasis, calm the mind, and nourish the blood; Yuanzhi can enhance intelligence, calm the mind, dispel phlegm, and open up the body; Licorice can nourish qi, restore pulse, and alleviate medicinal properties. Mainly used in conjunction with the functions of calming the mind and regulating qi, promoting blood circulation and removing blood stasis [11]. Modern pharmacological research has shown that cinnamaldehyde, the main component of cinnamon twigs, can inhibit inflammatory reactions in blood vessels and the body, thereby exerting vascular protective effects; At the same time, it has the effects of lowering blood pressure, relieving pain, inhibiting platelet aggregation, and protecting nerves; Oysters and dragon bones have calming, sedative, and anticonvulsant effects; Peach kernels can inhibit platelet aggregation, exert anticoagulant effects, delay renal interstitial fibrosis, lower blood sugar, and have anti-inflammatory effects; Substances such as berberine in Corydalis yanhusuo have the effects of reducing pain threshold, increasing coronary flow, lowering blood lipids, and improving myocardial ischemia; Danshen Danshenfen Acid B has a protective effect on vascular endothelial cells, can inhibit calcium influx, and dilate blood vessels; At the same time, it inhibits the migration and reproduction of vascular smooth muscle cells, thereby improving vascular stenosis, reducing the size of atherosclerotic plaque under the vascular endothelium, and effectively protecting the blood vessels; Licorice can inhibit the activity of phospholipase A2 and lipoxygenase, and has anti-inflammatory effects [12-13]. The results of this study showed that the total clinical effective rate of the study group was higher than that of the reference group, and the electrocardiogram was better than that of the reference group. The levels of triglycerides, low-density lipoprotein, and high-density lipoprotein were all lower than those of the reference group. The TCM syndrome score of the study group was lower than that of the reference group, and the incidence of adverse reactions was compared between the two groups ($P<0.05$). This proves that Guizhi Licorice Dragon Bone Oyster Modified Decoction can effectively improve the condition, alleviate clinical symptoms, regulate blood lipid levels, and reduce the incidence of adverse reactions. The reason for this is that Guizhi Licorice Dragon Bone Oyster Modified Soup contains Guizhi and oysters, which can regulate yin and yang and improve heart and kidney function; Yanhusuo, Danshen, and Yejiaoteng can reduce the frequency of ventricular premature beats, protect the heart meridian, and regulate qi and blood; Yuanzhi can dispel phlegm and improve swelling and pain; Danshen and peach kernels can effectively alleviate ischemic symptoms, while the combination of licorice, yuanzhi, dragon bone, and oyster can inhibit sympathetic nervous activity and improve electrocardiogram symptoms.

In summary, the application of Guizhi Licorice Dragon Bone Oyster Modified Decoction to PVCs has a significant therapeutic effect, which can effectively improve the condition, alleviate clinical symptoms, regulate blood lipid levels, and reduce the incidence of adverse reactions.

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