

Efficacy of Metoprolol Succinate Sustained Release Tablets Combined with Wenxin Granules in the Treatment of Coronary Heart Disease Arrhythmia

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Abstract: Objective: To explore the effect of metoprolol succinate sustained-release tablets combined with Wenxin Granules in the treatment of coronary heart disease patients with arrhythmia. **Methods:** The research objects were 50 patients with arrhythmia who were treated in our hospital from September 2019 to September 2020. According to different treatment methods, they were divided into observation group (Wenxin Granule + metoprolol succinate treatment) and control group (metoprolol succinate treatment), 25 cases in each group. The curative effects of the two groups were compared. **Results:** After treatment, there was no significant difference in rrm50, RMSSD, sdnn and SDANN between the two groups ($P > 0.05$). Compared with the control group, the SDNN in the observation group was higher than that in the control group ($P < 0.05$); Before treatment, there was no significant difference in the above indexes between the two groups ($P > 0.05$); The effective rates of the observation group and the control group were 92.00% and 68.00% respectively, and the curative effect of the observation group was higher than that of the control group ($P < 0.05$); There was no significant difference in the incidence of adverse reactions between the two groups ($P > 0.05$). **Conclusion:** In the treatment of patients with coronary heart disease and arrhythmia, Wenxin Granule Combined with metoprolol succinate sustained-release tablets has significant effect, which can effectively improve the dynamic electrocardiogram indexes of patients, improve the clinical efficacy, and has high safety.

Keywords: Arrhythmia; Coronary heart disease; Wenxin Granule; Metoprolol succinate sustained

release tablets

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1 Introduction

Coronary heart disease myocardial ischemia, easy to cause ventricular premature beats, junctional premature beats, etc., coronary heart disease arrhythmia patients clinical manifestations for palpitation, shortness of breath, chest tightness and chest central crushing pain, if not effectively treated, will directly affect the health and quality of life of patients. At present, the clinical use of beta blockers for its treatment, but the curative effect is not ideal, some scholars pointed out that, on the basis of a single application of beta blockers, combined with new proprietary Chinese medicine preparation, can harvest satisfactory curative effect^[1]. This article will take 50 patients as samples to analyze the clinical application of Wenxin Granules and metoprolol succinate sustained-release tablets.

2 Material and methods

2.1 Basic information

The research objects were 50 patients with arrhythmia who were treated in our hospital from September 2019 to September 2020. According to different treatment methods, they were divided into observation group (Wenxin Granule + metoprolol succinate treatment) and control group (metoprolol succinate treatment), 25 cases in each group. There

was no significant difference in clinical data between the two groups ($P > 0.05$), as shown in Table 1.

Table 1. Clinical data of two groups ($n = 25$)

	Observation group	Control group
Average age (years)	60.22±2.39	61.05±2.24
Average course of disease (years)	3.58±1.04	3.67±1.21
Sex (cases)		
Male	14	15
Female	11	10
Types of premature beat		
Atrial premature beat	6	7
Borderline premature beat	7	8
Ventricular premature beat	12	10

2.2 Method

In the control group: Metoprolol succinate sustained-release tablets were taken orally for 4 weeks (J20150044, produced by AstraZeneca pharmaceutical company), once a day, with a dose of 47.5 ~ 95.0mg each time. Observation group: Oral Wenxin Granules (Chinese medicine Zhunzi: NoZ10950026, produced by Shandong Buchang Pharmaceutical Co., Ltd.), three times a day, one bag for each time, for 4 weeks. The usage and dosage of metoprolol succinate were the same as those in the control group^[2].

2.3 Observation indexes

The indexes of HRV (24 h Holter heart rate variability) were monitored before treatment and 4 weeks after treatment. After 24 h monitoring, the monitoring data were observed and processed. (1) Square root of difference between adjacent RR intervals: RMSSD; (2) The number of adjacent NN difference > 50 ms, the percentage of total sinus beats: RNN50; (3) The standard deviation of RR interval mean value SDANN; (4) The mean value of standard deviation of normal RR interval SDNNI; (5) RR interval of all sinus beats: SDNN. The criteria

of curative effect were as follows. No response, abnormal heart rate, or the number of HRV premature beats decreased by less than 50% compared with that before treatment; Compared with before treatment, the number of HRV premature beats decreased by 50% ~ 90%; Adverse reactions such as nausea and vomiting, bradycardia, etc. were strictly monitored. Meanwhile, blood lipid, blood glucose, liver and kidney function were regularly checked during treatment^[3].

2.4 Statistical methods

SPSS 25.0 software was selected for data processing, and the comparison value was $P < 0.05$, indicating that the difference was statistically significant.

3 Results

3.1 Clinical efficacy

As shown in Table 2, the effective rates of the observation group and the control group were 92.00% and 68.00% respectively, and the curative effect of the observation group was higher ($\chi^2 = 4.5000$, $P = 0.0339$).

Table 2. Comparison of curative effect between the two groups [n (%), $n = 25$]

Group	Invalid	Good	Remarkable effect	Total effective rate
Observation group	2(8.00)	9(36.00)	14(56.00)	23(92.00)
Control group	8(32.00)	7(28.00)	10(40.00)	17(68.00)

3.2 HRV index

After treatment, there was no significant difference in rnn50, RMSSD, sdnni, SDANN between the two groups ($t = 0.3327, 1.6418, 1.9804, 1.6993$, $P = 0.7408, 0.1072, 0.0534, 0.0957$). Compared with the control group, the SDNN in the observation group was higher

than that in the control group ($t = 12.0691$, $P = 0.0000$); Before treatment, there was no significant difference in the above indexes between the two groups ($t = 0.3494, 1.7944, 1.3098, 1.3264, 1.0134$, $P = 0.7283, 0.0791, 0.1865, 0.1910, 0.3159$). See Table 3 for details.

Table 2. Comparison of HRV indexes between the two groups ($\bar{x} \pm s$, $n = 25$)

	Observation group		Control group	
	Before treatment	After treatment	Before treatment	After treatment
PNN50(%)	5.02±1.61	9.87±1.24	4.87±1.42	9.74±1.51
RMSSD(ms)	21.46±2.34	28.14±1.88	22.71±2.58	29.02±1.91
SDNNI(ms)	37.12±3.85	49.21±2.95	38.45±3.31	51.02±3.49
SDANN(ms)	79.52±2.18	128.46±5.20	80.39±2.45	125.89±5.49
SDNN(ms)	87.92±2.46	135.28±3.22*	88.68±2.83	122.62±4.14

Note: After treatment, compared with the control group, * $P < 0.05$

3.3 Adverse reactions

During the treatment, 2 cases of nausea and vomiting, 1 case of alanine aminotransferase elevation and 1 case of bradycardia occurred in the observation group, and the incidence of adverse reactions was 16.00% (4/25); In the control group, there was 1 case of sinus bradycardia and 2 cases of nausea and vomiting, and the incidence of adverse reactions was 12.00% (3/25); There was no significant difference between the two groups ($\chi^2 = 0.1161$, $P = 0.6836$).

4 Discussion

Patients with coronary heart disease due to myocardial cell metabolic disorders, hypoxia and ischemia, resulting in decreased stability of myocardial cells, abnormal operation of cell membrane electric ion current, thus inducing different types of arrhythmia, patients with ventricular fibrillation, ventricular tachycardia, ventricular premature beat performance, not only clinical treatment is difficult, and easy to cause a series of malignant cardiovascular events, and even endanger the life of patients^[4]. HRV has the characteristics of strong repeatability, quantifiable and noninvasive. It can be used to evaluate the severity and prognosis of organic heart disease. It can represent the balance and coordination of sympathetic and parasympathetic nerves and the activity of autonomic nervous system. It is a new prognostic index and a new method to predict autonomic nervous system activity. Myocardial ischemia in patients with coronary heart disease will lead to the decrease of HRV value, causing autonomic nerve endings injury. When sympathetic nerve tension increases and vagal nerve tension decreases, the threshold of arrhythmia occurrence will decrease, thus increasing the risk of arrhythmia in coronary heart disease^[5].

As a class II antiarrhythmic drug commonly used in clinic, metoprolol belongs to beta blocker, and its main mechanism of action is as follows: (1) It can

reduce the oxygen consumption of myocardial cells and increase the blood supply of myocardial cells; (2) It can prolong the conduction time of excitation, reduce the frequency of ectopic pacemaker, and then increase the excitation threshold of ventricular cells. Metoprolol sustained-release tablets used in this study have stronger beta blocker effect, and the effective blood concentration can reach 24 h. It is a long-term dosage form, which can effectively prevent the influence of blood concentration fluctuation on the curative effect^[6]. Zhongwenxin granule has ion channels, which can inhibit fast sodium current. It is one of the first choice of Chinese patent medicines for antiarrhythmia^[7]. Wenxin granule is extracted from Rhizoma Polygonati, Radix Codonopsis, amber, Radix notoginseng, Pinus tabulaeformis, etc. it has the effects of Supplementing Qi and nourishing Yin, nourishing yin and tonifying deficiency, activating blood circulation and removing blood stasis. Among them, Panax notoginseng has the effects of regulating qi and removing blood stasis, opening depression and invigorating spleen, relaxing channels and activating blood circulation. It can improve myocardial ischemia and hypoxia, regulate myocardial microcirculation, improve blood flow velocity and inhibit platelet aggregation; Gansong could prolong the conduction time of cell potential and inhibit the excitability of ventricular cell membrane; Dangshen has the effect of nourishing blood and Qi. Modern pharmacology has proved that dangshen can reduce oxygen consumption of myocardial cells, increase coronary blood flow, reduce blood viscosity and inhibit platelet aggregation; Amber has the effect of dispersing meridians, relieving depression, calming and activating blood circulation; It can reduce blood pressure and blood lipid, prevent thrombosis and improve coronary blood circulation; The combination of traditional Chinese medicine and traditional Chinese medicine can play a synergistic effect, and then play a good therapeutic effect^[8].

The results showed that there was no significant difference in rnn50, RMSSD, sdnni and SDANN between the two groups after treatment ($P > 0.05$). Compared with the control group, the SDNN in the observation group was higher than that in the control group ($P < 0.05$); Before treatment, there was no significant difference in the above indexes between the two groups ($P > 0.05$); The effective rates of the observation group and the control group were 92.00% and 68.00% respectively, and the curative effect of the observation group was higher than that of the control group ($P < 0.05$); There was no significant difference in the incidence of adverse reactions between the two groups ($P > 0.05$). Compared with single treatment, Wenxin Granule Combined with metoprolol succinate sustained-release tablets has better effect in the treatment of coronary heart disease with arrhythmia, and has a wide application prospect. In conclusion, Wenxin Granule Combined with metoprolol succinate sustained-release tablets has significant effect in the treatment of patients with coronary heart disease and arrhythmia, which can effectively improve the dynamic electrocardiogram indexes of patients, improve the clinical efficacy, and has high safety.

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