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Clinical effect and pharmaceutical study of amiodarone in the treatment of chronic heart failure complicated with chronic atrial fibrillation

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Abstract: *Objective: To analyze the clinical therapeutic value of amiodarone in patients with chronic heart failure complicated with chronic atrial fibrillation, and to evaluate the pharmacology of the drug. Methods: a total of 86 patients with chronic heart failure complicated with chronic atrial fibrillation admitted to our hospital from October 2019 to March 2021 were selected, and the control group received conventional treatment, including furosemide tablets, benazepril and isosorbide mononitrate sustained-release capsules, all orally administered. The observation group was treated with amiodarone on the basis of the above treatment methods, and the clinical efficacy of the two groups was evaluated. Results: Compared the data of left ventricular diameter and left ventricular ejection fraction after treatment, the observation group was better than the control group ($P < 0.05$);The heart rate and blood pressure of the patients before and after treatment showed that the blood pressure of the observation group was significantly higher than that of the control group, and the heart rate was lower than that of the control group, with significant differences between the groups ($P < 0.05$).Drug safety evaluation showed that the rate of adverse reactions in the observation group was only 16.28% (7/43), and there was no significant difference between the observation group and the control group ($P > 0.05$).The total effective rate in observation group was higher ($P < 0.05$).Conclusion: Amiodarone can improve the therapeutic effect of drugs and improve the problems of low blood pressure in patients with chronic heart failure complicated with chronic atrial fibrillation during the clinical treatment, which is a safe medication regimen and deserves attention.*

Keywords: *chronic heart failure; Chronic atrial fibrillation; Amiodarone; Cardiac function*

1. Introduction

Chronic heart failure is common in the elderly and in patients with history of hypertension, coronary heart disease, etc, will show a complex clinical syndrome, possesses the advantages of slow development, but it may pose a threat to life safety of patients, also is the important cause of death in patients with cardiovascular diseases, against the disease patients treated in clinical intervention is feasible[1].Chronic atrial fibrillation is a common complication of patients with chronic heart failure, which will further affect cardiac ejection function after onset. For such patients, attention should be paid not only to anti-heart failure treatment, but also to understand the changes of patients' arrhythmia and other symptoms, so as to improve the prognosis after strict control of patients' clinical symptoms. With the development of modern medical technology, the role of β -blockers in the treatment of cardiovascular diseases has been widely concerned by the medical community, from which a series of scientific treatment methods have been derived to effectively guarantee the recovery of patients. In this context, the advantages of amiodarone and other drugs in clinical treatment have attracted more scholars' attention. Drug combination has also become a common method for the clinical treatment of arrhythmia and other diseases.[2] In order to further understand the clinical application value of this drug, 86 patients were selected as the research object in this paper, and the clinical treatment information of the patients is as follows.

2. Data and methods

2.1 Clinical Data

A total of 86 patients with chronic heart failure complicated with chronic atrial fibrillation admitted

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to our hospital from October 2019 to March 2021 were selected, and the patients were divided into average groups according to random number table method. There were 43 patients in observation group, male/female =48/35, age 52-74 years old, average age (63.35±4.11) years old; The results of cardiac function grading showed that 21 cases were grade iii and 22 cases were grade ⅳ.In the control group, there were 43 patients with chronic heart failure complicated with chronic atrial fibrillation, male/female =46/37, age 50-78 years old, average age was (63.52±4.18) years old; Cardiac function grading was grade iii in 24 cases and grade ⅳ in 19 cases. There was no significant difference in the general information of cardiac function grading between the two groups ($P > 0.05$).

Inclusion criteria :(1) patients with chronic heart failure combined with chronic atrial fibrillation related indicators, including decreased apical beat, ecg examination showed tachycardia, different types of arrhythmias and myocardial damage, accompanied by left ventricular hypertrophy and other symptoms;(2) Patients voluntarily participated in the study;(3) Patients had good compliance with the treatment plan, and could cooperate with the evaluation of clinical indicators. Exclusion criteria :(1) allergic to known drug ingredients;(2) incomplete clinical data;(3) cognitive dysfunction;(4) Accompanied by dysfunction of vital organs, etc.

2.2 Drug treatment regimen

The routine treatment regimen for patients with chronic heart failure complicated with chronic atrial fibrillation in the control group included: (1) oral furosemide tablets (manufacturer: Shanghai Zhaohui Pharmaceutical Co., LTD., State drug approval H31021074), 20mg/ time, twice a day;(2) Isosorbide mononitrate sustained-release capsule (manufacturer: Zhuhai Rundu Mintong Pharmaceutical Co., LTD., National Drug Approval H20073914), oral administration, 50mg/ time, once a day;(3) Benazepril (manufacturer: Shenzhen Xinlitai Pharmaceutical Co., LTD., National Drug Approval H20043648), oral administration 10mg/ time, once a day.

Observation group was given amiodarone (manufacturer: sanofi pharmaceutical co., LTD., national drug approval letter H19993254), 200mg/ time, 3 times a day on the basis of routine medication regimen.

The treatment period was 30 days.

2.3 Observation Indicators

Echocardiography was used to analyze the left ventricular ejection fraction, left ventricular diameter and other cardiac function indexes of the two groups. Adverse drug reactions, heart rate, blood pressure and other indicators were recorded. To evaluate the total effective rate, the judgment criteria were: (1) significant improvement. The patient's heart function returned to normal after treatment, and no abnormality was found in clinical indicators such as heart rate.(2) General remission, heart function significantly improved, atrial fibrillation frequency decreased by more than 60%, ecg examination was basically normal, ECG QT dispersion index increased significantly;(3) invalid. The above standards are not met.

2.4 Statistical methods

SPSS 25.0 software was used to process the data. T-test was used for measurement data and Chi-square test was used for counting data. $P < 0.05$ was considered as significant difference.

2.4.1 Cardiac function

Table 1: Cardiac function index () $\bar{x} \pm s$

group	Left ventricular diameter (mm)		Left ventricular ejection fraction (%)	
	Before the treatment	After treatment	Before the treatment	After treatment
Observation group	35.02 + / - 1.34	32.57 + / - 0.71	41.35 + / - 4.25	51.22 + / - 4.06
The control group	35.17 + / - 1.29	33.32 + / - 0.68	41.41 + / - 4.31	45.59 + / - 4.27
t	0.529	5.003	0.065	6.266
P	0.598	0.000	0.948	0.000

Cardiac function evaluation results showed that after treatment, left ventricular diameter was smaller in the observation group, and left ventricular ejection fraction was higher than that in the

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control group ($P < 0.05$), with significant differences ($P < 0.05$), as shown in Table 1.

2.4.2 Heart rate and blood pressure

Comparison of heart rate and blood pressure showed that blood pressure in the observation group was higher than that in the control group, while heart rate was lower than that in the control group, with significant differences ($P < 0.05$), as shown in Table 2.

Table 2: Blood pressure and Heart rate $\overline{x} \pm s$

group	Diastolic pressure (mmHg)		Systolic blood pressure (mmHg)		Heart rate (times /min)	
	Before the treatment	After treatment	Before the treatment	After treatment	Before the treatment	After treatment
Observation group	75.33 + / - 3.27	82.74 + / - 3.65	105.51 + / - 10.29	120.45 + / - 9.42	106.48 + / - 5.46	80.71 + / - 3.49
The control group	75.41 + / - 3.36	78.60 + / - 3.49	105.44 + / - 10.35	115.71 + / - 9.16	106.71 + / - 5.34	92.09 + / - 3.54
t	0.112	5.376	0.031	2.366	0.197	15.012
P	0.911	0.000	0.975	0.020	0.844	0.000

2.4.3 Total effective rate

Data showed that the total effective rate of patients with chronic heart failure combined with chronic atrial fibrillation in the observation group was higher than that in the control group ($P < 0.05$), as shown in Table 3.

Table 3: Total effective rate (n)

group	Significant improvement	General relief	invalid	The total effective
Observation group (n=43)	29	13	1	97.67%
Control group (n=43)	11	25	7	83.72%
x2value				3.446
P				0.063

2.4.4 Adverse drug reactions

In this paper, data showed that amiodarone was a safe medication regimen, and there was no significant difference in the incidence of adverse reactions between patients and control group after treatment ($P < 0.05$), as shown in Table 4.

Table 4: Adverse Reactions (N)

group	constipation	Nausea and vomiting	Allergic rash	Pulmonary adverse reaction	The incidence of
Observation group (n=43)	3	2	1	1	16.28%
Control group (n=43)	2	1	1	0	9.30%
x2value					0.417
P					0.518

3. Discuss

Heart failure is the main cause of death in the elderly. Heart failure is an important manifestation of the development of cardiovascular disease at the end stage, and patients with this disease may have arrhythmia, ventricular fibrillation and other diseases in clinical treatment.And so on.Modern medical research, points out that the etiology of heart failure in complex, mainly by myocardial infarction, inflammation, and cardiomyopathy and other causes of cardiac dysfunction, under the influence of this condition can lead to lack of ventricular pump function, thus affect the cardiac output, with the development of the disease, may lead to more serious cardiac function deterioration;Chronic heart

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failure is caused by primary cardiomyopathy and the decrease of myocardial contractility caused by long-term pressure overload of the ventricle. Under the influence of long-term insufficiency of cardiac blood supply, chronic ventricular fibrillation is prone to occur. The occurrence of this complication will seriously affect the cardiac function and increase the mortality of patients.With the development of modern medical technology, the total effective rate of medical treatment of cardiovascular diseases has been significantly improved, further prolonging the survival time of patients, but the incidence of heart failure has not decreased significantly, and heart failure also increases the incidence of sudden cardiac death caused by ventricular arrhythmia. However, previous studies generally aim to improve the clinical symptoms of patients with chronic heart failure combined with chronic atrial fibrillation. The myocardial damage caused by this disease is often ignored, which is also an important reason why traditional therapies cannot achieve satisfactory efficacy. Therefore, in the current clinical treatment of this patient, For patients with end-stage heart failure complicated by ventricular fibrillation, it is necessary to closely monitor the changes of patients' conditions and find a new treatment process, which will ultimately be regarded as the key to promote recovery.

Clinical treatment of chronic heart failure with chronic atrial fibrillation (af) method is diversiform, but different drugs clinical therapeutic effects of different intervention methods, in this disease long-term treatment, cefuroxime plug crunching of cornflakes + bei that captopril + isosorbide mononitrate sustained release capsule treatment, normal blood supply can maintain a patient's body, controlling ventricular conduction, reducing vascular resistance, aldosterone secretion, And control the degradation of kinin and other substances, maintain normal vascular resistance function, improve cardiac output, which is of great significance for improving clinical symptoms of patients.However, considering the complexity of chronic heart failure complicated with chronic atrial fibrillation, it is difficult for the above drugs to achieve stable clinical efficacy during clinical treatment, and innovation is still needed on the basis of drug intervention programs.

In current clinical treatment of cardiovascular disease, beta blockers are recommended in the treatment of heart failure drugs, according to a large number of clinical experience, found that such drugs in patients with lower mortality, sudden death risk, and improve the quality of life plays an important meaning, and the rational use of beta blockers can inhibit the beta receptors stimulate the harmful effect of for a long time, Such as arrhythmia, atrial fibrillation, etc., so it has become the preferred drug in the clinical treatment of chronic heart failure complicated with chronic atrial fibrillation. Amiodarone is a new method for the clinical treatment of chronic heart failure combined with chronic atrial fibrillation. According to the results of this study, the heart rate and blood pressure of patients with chronic heart failure combined with chronic atrial fibrillation in the observation group were significantly better than those in the control group after amiodarone treatment, and the cardiac function evaluation data of patients proved that, After treatment, the left ventricular inner diameter and left ventricular ejection fraction of the observation group were (32.57 ± 0.71) mm and (51.22 ± 4.06) %, respectively, which were better than those of the control group ($P < 0.05$), proving that amiodarone had significant clinical effect.From the perspective of pharmacological effects, amiodarone, as a new anti-arrhythmia drug, can help patients prolong the duration of action potential, and then block potassium channel, and then strengthen the heart function, and help relieve arrhythmia and other symptoms.In addition, amiodarone improves the inflow of sodium into the heart, controlling atrial tachycardia and thus cardiac conduction velocity.As α and β adrenergic receptor blockers, it can relieve the self-discipline problems of the SINOatrial node, which is the key to improve the clinical symptoms of patients.At the same time, according to relevant scholars' pharmacology of the drug, it can effectively dilate coronary arteries and peripheral blood vessels, improve coronary blood flow after short-term drug use, and have a positive impact on thyroxine metabolism, which has the advantages of a wide spectrum of anti-arrhythmia, ensuring the effect of drug treatment.At the same time, amiodarone, as a safe drug, shows good affinity in human body. From the perspective of pharmacokinetics, amiodarone has a fast drug metabolism during its half-life period in human body, ensuring the clinical treatment effect.However, the safety of this drug still cannot be ignored. According to the data in Table 4, there was no significant difference in the incidence of adverse drug reactions in the observation group ($P > 0.05$), which proved that the safety of the drug was satisfactory and feasible.At the same time, for patients with chronic heart failure combined with chronic atrial fibrillation, considering the particularity of the disease, atrial fibrillation and other causes should be controlled in the treatment process. For example, only after improving myocardial blood supply and correcting the symptoms of heart failure, can the treatment effect of this disease be further improved.With the development of clinical treatment, this treatment method can effectively promote atrial fibrillation cardioversion and control ventricular rate deceleration, so it can achieve satisfactory clinical efficacy in clinical treatment.In this study, in this paper, observation group of patients on the basis of conventional treatment combined amiodarone

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treatment, final data prove that observation group patients were more satisfied treatment effect, the collaborative mechanism may be related to many drugs there is a close relationship, this suggests that the combination in the treatment of this disease effect is remarkable, the reason may be: After the combination of drugs can significantly strengthen the inhibition of myocardial β receptors, so it can improve the cardiac oxygen consumption and contribute to the improvement of cardiac function;At the same time, drug combination can help to improve heart function. For patients with chronic heart failure complicated with chronic atrial fibrillation, drug combination can reduce the injury of the disease to the heart function of patients, accelerate the improvement of the heart function of patients, and meet the basic requirements of clinical treatment.And according to the relevant academic research results can be found that the effects of amiodarone in the treatment of cardiovascular disease, the clinical curative effect evaluation results can be found that the drug can quickly correct arrhythmia, for patients with serious cardiovascular diseases such as heart failure, the drug can improve patients' electrocardiogram (ecg), after treatment patients ecg QT dispersion degree was better than control group, such as This indicates that the drug can significantly improve the symptoms of patients, in line with the treatment requirements of cardiovascular diseases, which is the same as the research results in this paper[3].Therefore, in order to comprehensively improve the clinical treatment effect of similar diseases, it is necessary to deeply understand the clinical treatment plan of amiodarone.

Certain deficiencies still exist in this paper, it is because the current lack of basic clinical treatment of chronic heart failure with chronic atrial fibrillation (af) method, the results confirmed that amiodarone satisfactory therapeutic effect can be obtained in the short term, but doesn't forward the way of clinical effect assessment of drugs, to a certain extent, affected the drug promotion.Therefore, in future studies, the time range of case studies will be extended, the number of samples will be increased, and the influence of amiodarone on long-term efficacy of patients with chronic heart failure complicated with chronic atrial fibrillation will be further understood, which is of great significance for guiding clinical rational drug use.

4. Conclusions

In conclusion, amiodarone has significant clinical treatment effect in patients with chronic heart failure complicated with chronic atrial fibrillation.[3]The emergence of amiodarone has become the key to comprehensively improve the clinical treatment effect, which is closely related to the pharmaceutical characteristics of the drug. Therefore, relevant personnel should understand the pharmaceutical characteristics of amiodarone, It is recognized that amiodarone can improve patients' cardiac function and clinical efficacy, and finally promote the improvement of patients' clinical symptoms.Therefore, in the treatment of patients with chronic heart failure complicated with chronic atrial fibrillation, amiodarone should be the first choice in the clinical treatment of patients, and it is worth promoting.

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