

Original Research Article

Comparing the Clinical Effects of Amiodarone and Propafenone in the Arrhythmia's Treatment

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Abstract: Objective: To compare the clinical effects of Amiodarone and Propafenone in the treatment of arrhythmia. Methods: Choose our hospital 100 cases of patients with cardiac arrhythmias. We shall divided into control group (50 cases, Propafenone treatment) and treatment group (50 cases, Amiodarone therapy), to collect the curative effect of two groups of patients, adverse reactions, nausea and vomiting, dizziness, headache, low blood pressure, heart rate slow down) in accordance with the drug treatment and electrocardiogram (ecg) changes before and after the treatment (PR interphase, QT interphase, QRS duration). Results: Control group and the clinical curative effect of treatment group total effectiveness 98%, 86% respectively, the treatment group is significantly higher than the control group. Control group and treatment group the incidence of adverse reactions were 4%, 12%, treatment group was significantly lower than the control group, and two groups of patients duration are improved after treatment stage PR interval and QT, QRS. But the treatment group patients with stage PR interval and QT, such as electrocardiogram QRS duration change was better than control group, which difference has statistical significance ($P < 0.05$). Conclusion: Compared with propafenone, amiodarone in the treatment of arrhythmia patients has better therapeutic effect and higher safety, and improve the clinical symptoms of patients effectively. It is suggested to promote clinical practice.

Keywords: Arrhythmia; Propafenone; Amiodarone; Clinical Curative Effect

Arrhythmia mainly refers to the abnormal rhythm or frequency of the heart beating, which is caused by impulse formation and conduction disorder, mainly manifested as irregular rhythm, and may also be the ectopic of the pacemaker^[1]. Arrhythmias may occur in a variety of organic heart disease, patients can also occur in the heart structure and function of normal people.

Some inducement will cause heart disorder and organic, non-organic heart disease and so on may cause premature beat. At the same time, a few non-disease elements like overwork, improper life and dietary habit also can cause rhythm of the heart to be disturbed. Currently, drugs are mainly used as the preferred treatment for arrhythmia, but different drugs clinical efficacy and safety are vary^[2]. Propafenone has the advantages of fast onset and long lasting efficacy, which makes it a common and effective anti-arrhythmic drug. Amiodarone as III class of rhythm of the heart drug, which unique function and effect, pharmacology, electrophysiology will expand peripheral vascular, reduce cardiac load pressure more effectively and improvement of the heart function. Based on this, this study explored the differences in the clinical effects of amiodarone and propafenone in the treatment of arrhythmia, as follows:

1. Objects and methods

1.1 Object

A total of 100 patients with arrhythmia admitted to our hospital within 1 year from March, 2017 to March, 2018 were selected as the study subjects. All patients were diagnosed with arrhythmia. According to different drug treatment methods, the patients were divided into control group (26 males and 24 females, with an average age of 59.58 ± 8.58 years) and treatment group (27 males and 23 females, with an average age of 59.85 ± 8.17 years). The general information of the two groups was not statistically significant ($P > 0.05$). Meanwhile, all patients and their family members volunteered to participate in this study after understanding the content and criteria of this study in detail. All subjects had no allergy to the drugs used in this study, and the ethics committee of our hospital was fully approved the study.

1.2 Methods

1.2.1 Control group

Patients in the control group were given routine propafenone hydrochloride tablets (Nanjing Baijinyu Pharmaceutical CO.,

LTD; National drug approval H32024070), which were taken orally together with diet, 6 times a day, 100mg each time (2 tablets).

1.2.2 Treatment group

Patients in the treatment group were given oral treatment with amiodarone hydrochloride tablets (Beijing Jialin Pharmaceutical Co., LTD., National drug approval number H20003843), three times a day, one time 200mg (1 tablet). Both groups of patients continued to take the drug for one month.

1.3 Observation target

The therapeutic effects of the two groups were collected. Significant effect: After the end of the treatment cycle, the clinical symptoms of the patients completely disappeared, and 24-hour dynamic electrocardiogram observation showed that the prephase contraction frequency decreased by more than 90%. Effective: After the end of the treatment cycle, the clinical symptoms of the patients were improved, and 24-hour dynamic electrocardiogram observation showed that the pre-phase contraction frequency was reduced by more than 60%. Invalid: no improvement or aggravation of symptoms; Total effective rate = (obvious effect + effective rate)/all cases $\times 100\%$; Adverse reactions (nausea, vomiting, dizziness, headache, hypotension, slow heart rate) and ecg changes before and after treatment (PR interval, QT interval, QRS duration).

1.4 Statistical analysis

SPSS22.0 software was used to analyze the data, t and "x \pm s" were used to represent the measurement data, chi-square and % were used to represent the counting data, and P < 0.05 was considered statistically significant.

2. Consequence

2.1 Treatment effect analysis of two groups of patients

The total effective rate of clinical efficacy in the control group and the treatment group was 98% and 86%. The treatment group was significantly higher than the control group, with statistically significant differences (P < 0.05), as shown in Table 1:

Table 1. Comparison of treatment effect between treatment group and control group [n, (%)]

Group	Cases number	Apparent effect	Valid	Invalid	Effective rate
Control group	50	11 (22.00)	32 (64.00)	7 (14.00)	43 (86.00)
Treatment group	50	27 (54.00)	22 (44.00)	1 (2.00)	49 (98.00)
χ^2	-	21.732	8.052	9.783	9.783
P	-	0.000	0.005	0.002	0.002

2.2 Analyzed incidence of adverse reactions in the two groups

The incidence of adverse reactions in the control group and the treatment group was 4% and 12%, respectively. The treatment group was significantly lower than the control group, with statistically significant differences (P < 0.05), as shown in Table 2:

Table 2. The incidence of adverse reactions was compared between the treatment group and the control group [n, (%)]

Group	Cases number	Nausea vomiting	Dizziness headache	Low blood pressure	decreased heart rate	total occurrence rate
Control group	50	3 (6.00)	2 (4.00)	1 (2.00)	1 (2.00)	6 (12.00)
Treatment group	50	1 (2.00)	1 (2.00)	0 (0.00)	0 (0.00)	2 (4.00)
χ^2	-	2.083	0.687	2.020	2.020	4.348
P	-	0.149	0.407	0.155	0.155	0.037

2.3 Analyzed ecg changes of patients before and after treatment in two groups

PR interval, QT interval and QRS duration were improved in both groups after treatment. However, the ecg changes of PR interval, QT interval and QRS duration in the treatment group were significantly better than those in the control group. The difference was statistically significant (P < 0.05), as shown in Table 3:

Table 3. Comparison of ecg changes treatment between treatment group and control group before and after (x \pm s)

Group	Period	PR interphase	QT interphase	QRS interphase
Control group(n=50)	Before treatment	0.15 \pm 0.01	0.37 \pm 0.03	0.08 \pm 0.01
	After treatment	0.16 \pm 0.01	0.38 \pm 0.01	0.09 \pm 0.01
t	-	5.000	2.236	5.000
P	-	0.000	0.028	0.000

Treatment group (n=50)	B e f o r e treatment	0.15±0.01	0.37±0.04	0.08±0.01
	A f t e r treatment	0.14±0.01*	0.44±0.02*	0.09±0.01
t	-	5.000	11.068	5.000
P	-	0.000	0.000	0.000

Note: * represents to comparison with the control group after treatment, $p < 0.05$.

3. Discussion

The normal beating of the human heart is controlled by the Sinoatrial (SA), which beats at a resting rate of 60 to 100 beats per minute with a regular rhythm. And the abnormal of heart impulse frequency, rhythm, place of origin, conduction speed and excited order in patients with arrhythmia. Arrhythmia may directly affect the hemodynamics and cardiac function of patients, which always presenting symptoms such as hypotension, palpitation and chest tightness, etc. If patients not to be treated in time, it may lead to syncope or even shock^[3,4]. In addition, the onset of arrhythmia is rapid, if the elderly patients are prone to heart failure, resulting in the patient's death. Therefore, it is very important to select safe and effective Antiarrhythmic drugs to timely control patients when they come on.

As the first class of anti-arrhythmia drugs, Propafenone is mainly used to block the sodium ion channels in the heart muscle and heart conduction system, and has a membrane stability effect^[5]. As an IC drug, Propafenone can obviously block the sodium ion channel, slow down the conduction and delay the action potential duration, and it effectively for all kinds of arrhythmias complicated by pre-excitation syndrome. However, long-term use of large dose of Propafenone will lead to decreased cardiac output, greater side effects, and increased patient pain.

As a broad-spectrum anti-arrhythmia drug, Amiodarone is mainly used in pre-excitation syndrome with atrial fibrillation and atrial flutter. Amiodarone belongs to class III anti-arrhythmic drugs, mainly electrophysiological effect is to prolong the action potential of the myocardial tissue and effective refractory period, is helpful to eliminate the turn-back excited^[6]. At the same time, it has a mild noncompetitive and adrenal blockers and mild class I and class IV anti-arrhythmic drugs, will reduce the sinoatrial node self-discipline. The conduction inhibition of bypass precursors for pre-excitation syndrome is greater than the reverse, so it is usually used in patients with arrhythmia who are unable to respond to other treatments or are not suitable to take other drugs.

The results of this study showed that the therapeutic effect of Amiodarone on arrhythmia patients was up to 98%, which was significantly higher than that of the patients treated with Propafenone (86%). The incidence of adverse reactions in patients treated with Amiodarone was only 2 (4%), which was significantly lower than that in 6 patients treated with Propafenone (12%), and the changes in Electrocardiogram (ECG) such as PR interval, QT interval and QRS duration, etc. in patients treated with Amiodarone were significantly better than those treated with Propafenone.

In summary, Amiodarone is more effective than Propafenone in the treatment of arrhythmias. And it is not only safer, but also can effectively improve the clinical symptoms of patients, which is suggested that clinical promotion.

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