

Clinical Analysis of Ventricular Arrhythmia Treatment

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Abstract Objective to analyze the outcome at follow-up of patients with premature ventricular assigned to drug therapy or Radiofrequency ablation. **Methods** Retrospectively compared the outcome of 580 patients with premature ventricular in our hospital during 2007-2012 of who received drug treatment is divided into a group and who underwent radiofrequency ablation were divided into another group. **Results** There is a big difference in treatment success between two groups after one month treatment, which makes it statistically significant ($P < 0.05$), while there is no clear difference in the incidence of premature ventricular with no statistical significance ($P > 0.05$). **Conclusions** Radio frequency catheter ablation is useful to alleviate the suffering of patients with technical reliability and relatively heavy economic burden. While drug therapy is convenient but takes too long. However, the two methods have no clear difference after long-term follow-up, but there exists certain risks by taking antiarrhythmic drugs for a long time.

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1. Introduction

At the present, transcatheter techniques are quite widely used. In clinical work, most patients diagnosed with idiopathic ventricular tachycardia and cicatricial ventricular tachycardia accept the Radiofrequency Catheter Ablation. there is some disagreement about frequent premature ventricular treatment between doctors and patients. After reviewing the medical history of 580 frequent premature ventricular -patients treated b in our hospital from the year 2007 to 2012 and analyzing statistically the the clinical curative effect of radio frequency catheter ablation and antiarrhythmic drugs, the author wrote the report as follows.

2. Material and Methods

2.1 General information

580 patients were diagnosed with frequent premature ventricular treated in our hospital from the year 2007 to 2012. According to analysis of electrocardiogram ,tissue doppler in position oriented diagnosis existed in right ventricular outflow tracts, inter-ventricular septums, left coronary sinus and non coronary sinus and other positions. subject inclusion criteria[1] : ① related symptoms of patients diagnosed with frequent premature ventricular in clinical work include chest congestion and palpitations; ② Frequent premature ventricular does exist proved by dynamic electrocardiogram and bodysurface ECG, mainly being simplex sex room early and some multiform PVC; ③ all patients went through conventional biochemical inspection, electrocardiogram, 3 d piece of heart, dynamic

electrocardiogram and supersonic and enchanted the graph ; ④ build a one-year profile about all patients follow-up.

2.2 Methods

Patients in the ablation group had Pathologic Ventricular Tachycardia treatment after stopping taking antiarrhythmic drugs. According to analysis of electrocardiogram, Simplex classical part mainly chooses common standard measurement method-line of radiofrequency ablation; while multiform PVC, ventricular premature originated from atypia parts adopts radiofrequency catheter ablation at the criterion of Carto. Patients in the drug therapy group were given amiodarone according to the our national amiodarone anti-arrhythmic treatment application guide. Disappearance of electrocardiogram (ecg) in premature ventricular and reduction of ventricular premature beyond 90% compared to dynamic electrocardiogram are regarded as efficacy.

2.3 Observation index

All patients went through dynamic electrocardiogram and blood biochemical indicators monitoring after one week. Six months later, they also had dynamic electrocardiogram, blood biochemistry and chest water monitoring. All follow-up records included whether involved in treatment , related symptom, complication during the treatment period and the number of premature beats relatively before and after treatment.

2.4 Statistical analysis

All information were recorded to build a data base by using SPSS 17.0 statistical software, measurement data showed mean value and standard deviation, using t test and count data using X2 test with no statistical significance ($P < 0.05$)

3. Results

3.1 To compare the treatment conditions between two groups

To calculate the treatment success and recurrence rate of frequent premature ventricular and to compare the incidence of complications in two groups are as follows (Table 1). The treatment success in Ablation group and the drug treatment group are relatively 97.1% and 1.7%, the recurrence rate of frequent premature ventricular being 26.7% and 1.7%. There exists statistical differences ($P < 0.05$) in this two groups. While there are no statistical differences in terms of the incidence of complications in two groups ($P > 0.05$).

Table 1 To compare the treatment conditions between two groups[n(%)]

Group	n	Success	Recurrence rate	Adverse drug reaction
Ablation group	280	272	5	5
The drug treatment	300	200	80	10

3.2 To compare the follow-up results in two groups

After a long time follow-up, the treatment success in two groups are relatively 96.8 and 89.3%, the recurrence rate of frequent premature ventricular being 25% and 3.3%. There exists statistical differences ($P < 0.05$) in this two groups. While there are no statistical differences in terms of complication(adverse drug reaction) in two groups ($P > 0.05$) (Table 2).

Table 2 the follow-up results with a long time in two groups

Group	n	incidence of complications	Success	Recurrence
Ablation group	280	1	271	7
The drug treatment	300	18	268	10

The treatment success in Ablation group

4. Discussions

Ventricular premature beat is quite common in clinics and most patients' ventricular premature can be found and recorded by dynamic electrocardiogram. Frequent ventricular premature

beat (FVPB) can cause cardiac dilatation and cardiac insufficiency[2-4], that is, premature ventricular tachycardia of heart disease and sudden cardiac death[5-6]. The way to treat it includes radiofrequency catheter ablation and drug therapy. In the clinical practice process, most doctors suggest we should adopt radiofrequency catheter ablation to treat frequent ventricular premature beat. However, some patients choose to take drugs instead of radiofrequency catheter ablation for a variety of reasons (economic factors, fear of radio frequency).

Frequent ventricular extrasystole changes the right order of physiological excitement from heart, causes myocardial contraction at different pace, ventricular ejection fraction reducing and finally leads to cardiomyopathy. Moreover, with the DM course being longer, damage from ventricular premature to cardiac muscle will increase. So early discovery and early treatment are particularly important. At present, catheter ablation proves to be safe and effective and have got recognition and praise from counterparts at home and abroad. ventricular premature brings about the heart muscle to contract in the interval between the right and left ventricles and layers of the left free ventricular wall at different pace, shunting in cardiac chamber, mitral regurgitation the increase of end-diastolic volume load, ventricular wall tension and ventricular filling resistance, and also leads to left ventricular diastolic dysfunction , finally causing cardiac dilatation.

Frequent premature ventricular can also lead to the damage of myocardial cell by increasing intracellular calcium load and changing the cardiac muscle cell membrane potassium channels, which causes the cardiac functional damage. Amiodarone is mainly drug-like cardiac ion of multi -channel blockers and also had electrophysiological function of I、 II、 IV antiarrhythmic drugs, including block sodium channels (I class effect) , retardation potassium channels (II class effect) , L-type calcium channel blocker (IV class effect) to inhibit early afterdepolarization and delayed afterdepolarizations. It also includes noncompetitively inhibiting α_1 、 β receptors , dilating coronary arteries, increasing the blood flow, and reducing cardiac muscle oxygen consumption together with the expansion of the peripheral arteries and reduction the peripheral resistance. Amiodarone is effective to treat the myocardial damage caused by frequent premature ventricular.

We had a long-term follow-up during this research, only to find radiofrequency ablation catheter is safe, quick and effective method commonly used in a wide range of clinical application. Moreover, taking drug therapy, due to

restriction by all sorts of conditions, is also an effective method after a long-term follow-up. The weakness of this research lack prospective studies because the follow-up was not elaborate enough with small sample capacity.

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