

## Observation on the Application Effect of Atorvastatin combined with Trimetazidine on Myocardial Ischemia

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**Keywords:** Atorvastatin; Trimetazidine; Myocardial Ischemia; Application Effect

**Abstract: Objective:** To observe the application effect of atorvastatin combined with trimetazidine on myocardial ischemia. **Methods:** 140 patients with myocardial ischemia admitted in our hospital between August 2017 and August 2018 were randomly divided into two groups (experimental group and control group), 70 patients in each group. Patients in the experimental group were treated with atorvastatin and trimetazidine, while patients in the control group were treated with atorvastatin only. The therapeutic effects of the two therapeutic schedules were compared. **Results:** The total effective number of patients in the experimental group and the control group was 66 and 53 respectively, and the total effective rate of treatment was 94.28% and 75.71%, respectively. To the patients of the experimental group and the control group, their blood glucose level was  $(5.38 \pm 0.26)$  mmol/L and  $(6.17 \pm 1.99)$  mmol/L respectively; the total cholesterol level was  $(4.71 \pm 0.61)$  mmol/L and  $(4.88 \pm 0.75)$  mmol/L respectively, and the triglyceride level was  $(1.37 \pm 0.54)$  mmol/L and  $(1.49 \pm 0.78)$  mmol/L respectively. The patients suffering cardiovascular diseases in the experimental group and in the control group were 4 and 11 respectively, and the total incidence of cardiovascular disease was 5.71% and 15.71% respectively,  $P < 0.05$ . **Conclusion:** Treating patients suffering from myocardial ischemia with atorvastatin and trimetazidine can improve the efficiency of patients' treatment and effectively improve their blood lipid levels. It can also reduce the incidence of cardiovascular disease in patients, helps to shorten the disease course, improve the quality of life of patients and reduce the economic burden of these patients, and thereby this therapeutic schedule is worth applying in clinical treatment and promoting.

### 1. Introduction

Coronary heart disease is also called coronary arterial heart disease. The incidence of this disease has been increasing in recent years, and its main clinical symptoms are chest tightness, thoracodynia, fatigue, myocardial infarct, and so on <sup>[1]</sup>, and it is easy to cause myocardial ischemia. Myocardial ischemia can lead to myocardial infarction, arrhythmia, heart failure and many other symptoms, which poses serious threats to the health and life of patients <sup>[2]</sup>, and thus it is significant to thoroughly explore the treatment of myocardial ischemia. In this study, 140 patients with myocardial ischemia in our hospital were randomly divided into two groups and given different therapeutic methods. The therapeutic effects of the two groups were compared.

### 2. Data and methods

#### 2.1 General data

140 patients with myocardial ischemia received and cured between August 2017 and August 2018 in our hospital were included in this study, and all these patients gave informed consent for this study. The 140 patients were divided into experimental group and control group with the method of random number table, 70 patients in each group. In the experimental group, the number of male and female patients was 42 and 28 respectively, all aged  $56.4 \pm 13.2$ ; in the control group, the number of male and female patients was 39 and 31 respectively, all aged  $55.7 \pm 14.0$ . This study has been approved by the Ethics Committee of our hospital. The general data of all patients is  $P > 0.05$ , and thus it can be compared.

## 2.2 Therapeutic methods

### 2.2.1 Basic therapeutic methods

After the admission to the hospital, all patients were given symptomatic treatments such as diuresis, oxygen inhalation, vasodilator, calcium antagonist, etc.

### 2.2.2 Therapeutic methods for patients of the control group

On the basis of the basic treatment method, the patients were treated by monotherapy of taking atorvastatin orally, once a day and 10mg each time. They were continuously treated for two weeks.

### 2.2.3 Therapeutic methods for patients of the experimental group

On the basis of the basic treatment method, the patients were given atorvastatin combined with trimetazidine, wherein the atorvastatin was used in the same way as that in the control group. The trimetazidine was taken orally, 3 times a day and 20mg each time. They were continuously treated for two weeks.

## 2.3 Observation targets

The treatment effect, blood lipid changes and cardiovascular disease incidence of the two groups were compared.

Therapeutic effect criteria: The treatment was regarded to be significantly effective when the following conditions were achieved: the patients' clinical symptoms were well controlled; angina pectoris did not occur within a week; the ECG was erect; the ST retraction segment reached at least 0.15mV and the T wave inversion could achieve at least 50.00%. The treatment was regarded to be effective when the following conditions were achieved: the clinical symptoms of the patients were controlled to a certain extent; the incidence of angina pectoris was significantly reduced and the degree is relieved; the ECG band was rebounded. The treatment was regarded to be ineffective when the following conditions were achieved: the clinical symptoms of the patients had not been significantly improved, or even the condition was aggravated; the frequency and extent of angina pectoris was alleviated and the ECG results showed no change. The total effective rate of treatment in patients was (significantly effective + effective) / total number of cases $\times$ 100.00%.

## 2.4 Statistical methods

SPSS was adopted in this study to analyze the data. When  $P < 0.05$ , there was a significant difference between the groups; and the enumeration data was tested with  $X^2$ , and the measurement data was tested with t.

## 3. Results

### 3.1 Comparison of total treatment efficiency between the two groups

The total effective number of patients in the experimental group and the control group was 66 and 53 respectively, and the total effective rate of treatment was 94.28% and 75.71% respectively,  $P < 0.05$ . The specific results are shown in Table 1.

Table 1 Comparison of the therapeutic effect between the two groups of patients, n (%)

Group	n	Significantly effective	Effective	Ineffective	Total effective rate
Experimental group	70	43 (61.42)	23 (32.85)	4 (5.71)	66 (94.28)
Control group	70	21 (30.00)	32 (45.71)	17(24.28)	53 (75.71)
$X^2$					12.102
P					<0.05

### 3.2 Comparison of blood lipid changes between two groups of patients

There were no significant differences in the indicators between the two groups before treatment. To the patients of the experimental group and the control group, their blood glucose level was  $(5.38 \pm 0.26)$  mmol/L and  $(6.17 \pm 1.99)$  mmol/L respectively; the total cholesterol level was  $(4.71 \pm 0.61)$  mmol/L and  $(4.88 \pm 0.75)$  mmol/L respectively; and the triglyceride level was  $(1.37 \pm 0.54)$  mmol/L and  $(1.49 \pm 0.78)$  mmol/L respectively,  $P < 0.05$ . The specific results are shown in Table 2.

Table 2 Comparison of blood lipid changes between the two groups, ( $\bar{x} \pm s$ , mmol/L)

Group	n	GLU		Total cholesterol		Triglyceride	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Experimental group	70	$7.29 \pm 2.40$	$5.38 \pm 0.26$	$5.47 \pm 0.68$	$4.71 \pm 0.61$	$1.78 \pm 1.15$	$1.37 \pm 0.54$
Control group	70	$7.15 \pm 2.06$	$6.17 \pm 1.99$	$5.38 \pm 0.87$	$4.88 \pm 0.75$	$1.69 \pm 1.16$	$1.49 \pm 0.78$
t		2.745	11.432	3.068	12.522	1.093	10.734
P		$>0.05$	$<0.05$	$>0.05$	$<0.05$	$>0.05$	$<0.05$

### 3.3 Incidence of cardiovascular disease in two groups of patients

The number of patients attacked by cardiovascular diseases in the experimental group and the control group was 4 and 11 respectively, and the total incidence was 5.71% and 15.71% respectively,  $P < 0.05$ . The specific data is shown in Table 3.

Table 3 Incidence of cardiovascular disease in two groups of patients, n (%)

Group	n	Cerebral stroke	Stenocardia	Myocardial infarcts	Total incidence
Experimental group	70	1 (1.42)	1 (1.42)	2 (2.85)	4 (5.71)
Control group	70	3 (4.28)	4 (5.71)	4 (5.71)	11 (15.71)
$\chi^2$					13.036
P					$<0.05$

## 4. Discussion

The so-called myocardial ischemia refers to the reduction of the blood perfusion of a patient's heart, thereby leading to the reduction of oxygen supply to the heart and causing abnormal myocardial energy metabolism, which may have serious impacts on the normal work of the patient's heart<sup>[3]</sup>. Under normal circumstances, all the energy required for heart to perform activities must be provided by aerobic metabolism; the myocardium has a high blood oxygen uptake rate even when the body is completely quiet, but the body can achieve a balance of blood supply and demand by adjusting itself<sup>[4]</sup>. However, myocardial ischemia may occur if some factors cause the imbalance of the supply and demand of the body's myocardial blood. So far, it is believed that coronary heart disease is the most common and leading cause of myocardial ischemia. And with the rapid development of the economy in recent years, people's quality of life has gradually improved. The incidence of myocardial ischemia has increased significantly and mainly occurs in the middle-aged and aged population, and it can pose serious threats to the health and life of patients<sup>[5]</sup>.

At present, the research on clinical treatment methods of myocardial ischemia has been widely concerned in the medical domain. And according to research, we believe that the use of atorvastatin combined with trimetazidine for the treatment of myocardial ischemia can play a significant therapeutic effect.

Statins are clinically common drugs for the treatment of myocardial ischemia. It has a good anticoagulant effect and can effectively inhibit platelet aggregation, thereby effectively regulating the patients' blood lipids, reducing their blood viscosity, and ultimately improving their blood flow<sup>[4]</sup>. The atorvastatin used in this study is a statin with good functions of anti-hyperlipidemia

and anti-cancer. The application of it into the clinical treatment of patients with myocardial ischemia can effectively protect the blood vessels of patients, helps to the smooth reperfusion of myocardial ischemia and increase the speed of blood clot dissolution, effectively avoiding atherosclerosis<sup>[6]</sup>.

The application of trimetazidine can effectively improve the patients' myocardial metabolism and inhibit fatty acid metabolism in patients. And in combination with the basic treatment method, heart failure symptoms of the patients can be effectively alleviated, and their hemodynamics can be effectively prevented from being drastically changed. Application of atorvastatin combined with trimetazidine in the clinical treatment of patients with myocardial ischemia can effectively improve the patients' blood lipid indexes, reduce the frequency of angina pectoris and the degree of angina pectoris, which can significantly promote the treatment effect and the living quality of patients<sup>[3]</sup>.

The study in this paper shows that the total effective number of patients in the experimental group and the control group was 66 and 53 respectively, and the total effective rate of treatment was 94.28% and 75.71%, respectively. To the patients of the experimental group and the control group, their blood glucose level was (5.38±0.26) mmol/L and (6.17±1.99)mmol/L respectively; the total cholesterol level was (4.71±0.61)mmol/L and (4.88±0.75)mmol/L respectively; and the triglyceride level was (1.37±0.54)mmol/L and (1.49±0.78)mmol/L respectively. The number of patients attacked by cardiovascular diseases in the experimental group and in the control group was 4 and 11 respectively, and the total incidence of cardiovascular disease was 5.71% and 15.71% respectively,  $P < 0.05$ .

## 5. Conclusion

Treating patients suffering from myocardial ischemia with atorvastatin and trimetazidine can improve the efficiency of treatment and effectively improve their blood lipid levels. It can also reduce the incidence of cardiovascular disease in patients, help to shorten the disease course, improve their quality of life and reduce the economic burden of these patients, and thereby this therapeutic method is of great value to apply in clinical treatment and be promoted.

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