

Clinical Efficacy of Immediate Rehabilitation Training after Coronary Artery Intervention in Patients with AMI

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This paper investigates the effect of rehabilitation training on the clinical outcome and prognosis of patients with acute myocardial infarction after coronary artery intervention. There was no significant difference in daily living ability score and left ventricular ejection fraction between group A before intervention ($P > 0.05$). The score of daily living ability of group A was (76.58 ± 3.27) significantly higher than that of group B after intervention (73.7 ± 3.4) ($P < 0.05$); left ventricular ejection fraction after intervention (55.75 ± 4.4) was significantly higher than that of group B (52.41 ± 4.19) ($P < 0.05$); total satisfaction rate of patients in group A (93.02%) was significantly higher in group B (69.77%), the difference between the groups was statistically significant ($P < 0.05$); the total incidence of adverse reactions and mortality in group A (11.63%, 2.33%) was significantly lower than that in group B (53.49%, 16.28%).), the difference was statistically significant ($P < 0.05$). In patients with acute myocardial infarction, after interventional coronary artery intervention, immediate intervention with rehabilitation training can improve left ventricular ejection fraction, improve daily living ability and nursing satisfaction, and reduce postoperative adverse reactions and death. Medical staff should be used reasonably in the clinic according to the actual situation of the patient.

Key words: Myocardial infarction; Coronary intervention; Radial artery; Rehabilitation training

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Acute myocardial infarction is a thrombus formed by coronary atherosclerotic rupture and hemorrhage in the heart of the human body, resulting in sudden and severe ischemic necrosis of the myocardium due to sudden reduction of blood supply to the coronary artery and interruption¹. ST-segment elevation acute myocardial infarction has typical symptoms of ischemic chest pain, and ECG has a very obvious ST-segment elevation. In the clinical diagnosis and treatment guidelines for acute ST-segment elevation myocardial infarction, coronary artery interventional surgery is often used for general patients. Because of the rapid hemostasis and small injury, the clinical treatment effect is good². In patients with ST-segment elevation acute myocardial infarction after coronary artery

intervention through the radial artery, the nursing method is more than 1 week after the rehabilitation training method for recovery intervention, which can promote early cardiac rehabilitation³. Cardiac rehabilitation refers to the promotion of cardiac function and daily living ability through various targeted interventions, which stabilizes and reverses arteriosclerosis, effectively avoids cardiovascular events and improves patients' quality of life⁴. Clinically relevant studies have confirmed that early rehabilitation of patients with acute myocardial infarction can help patients recover from the body⁵. Our hospital has further optimized the treatment mechanism and process of coronary artery intervention for acute myocardial infarction, so that patients can receive timely treatment and provide

conditions for early rehabilitation. Based on this, the author combined with his own clinical experience, the early rehabilitation time of patients with ST-segment elevation myocardial infarction undergoing coronary artery intervention through the radial artery was advanced immediately after surgery, and the effect of immediate rehabilitation training on the clinical efficacy and prognosis of patients was evaluated. The results of the study are now reported as follows:

MATERIALS AND METHODS

General Information

Eighty-six patients with ST-segment elevation myocardial infarction undergoing transradial coronary intervention were enrolled in the emergency department of our hospital from November 2016 to September 2017. All patients met the American College of Cardiology for acute myocardial infarction. Infarct diagnostic criteria ^[6]. The subjects were randomly divided into group A (43) and group B (43). There were 32 males and 11 females in group A, aged 45-68 years, with an average of (54.52±11.38) years old. In group B, there were 28 males and 25 females. The age ranged from 42 to 68 years old, with an average of (58.29 ± 13.66) years old. There were no significant differences in the data of age, height and weight between the two groups (P>0.05). The ethics committee of our hospital approved this study.

Inclusion and Exclusion Criteria

Inclusion criteria: 1. The patient had a heart attack episode within 12; 2. The patient's electrocardiogram showed that the ST segment elevation of two or more adjacent leads was more than 0.2 mV; 3. After surgical treatment, the cardiac function Killip grading ⁷ was Grade I, grade of coronary artery stenosis ⁸ is grade III with no serious complications. Exclusion criteria: 1. Patients with other types of heart disease other than coronary heart disease. 2. The patient's body is not fully functional. 3. Patients who are unwilling to participate in this study or who have withdrawn from the study for various reasons. 4. The patient's postoperative cardiac function Killip grade is greater than grade I, and the degree of coronary artery stenosis is less than grade

III. 5. Patients over 70 years of age.

Method

Both groups of patients were treated with conventional treatment, including anticoagulation, beta blockers, antiplatelets, angiotensin converting enzyme inhibitors and lipid regulating ⁹. Patients in group A were treated with immediate rehabilitation training after surgery, and patients in group B were given routine rehabilitation training after surgery. The time of rehabilitation nursing intervention was 7 days.

Patients in group A who had no complications after surgery, can sit up 1 day after surgery, can use the toilet, and walk; if the patient has complications, perform appropriate rehabilitation training for patients while performing complications. At the same time, according to the actual situation of the patient and professional knowledge to develop a suitable rehabilitation program for patients, including the establishment of files, rehabilitation exercises, diet nutrition, psychological care, medical care and so on. First of all, for the group's healthy personal rehabilitation files, the doctor evaluates the patient's condition and makes a doctor's advice. The nursing program is based on the doctor's advice and the patient's specific conditions, and the rehabilitation treatment is targeted, and the patient's specific situation is recorded. To ensure that the patient's rehabilitation exercise and various cares are in place, such as patients with adverse conditions during the care and timely feedback to the doctor. Second, the specific implementation of rehabilitation exercise: immediately after the patient performs surgery, according to the actual situation of the patient to turn over, body joint stretching exercise or walking, the pressure device decompression 1 / 2h; on the 1st postoperative, the patient pressure device The patient can exercise on the limbs at a frequency of 3 times/d for about 10 minutes each time. On the 2nd postoperative day, the standing step can be performed at a frequency of 3 times/d for about 10 minutes each time. On the third day after surgery, the patient can be assisted. Under the standing walk, the frequency is 3 times / d, each time about 10min; after that, the patient can perform independent walking exercise, the frequency is 3 times / d, each time about 10min. Third, during the rehabilitation exercise, according

to the patient's exercise situation, the corresponding food, to ensure nutrition and calories, eat more foods containing vitamins and fiber, daily defecation, and quit smoking, abstain from alcohol to maintain good habits. Fourth, health preaching and psychological care, nursing staff need to help patients understand the importance of disease, rehabilitation care, and let patients actively cooperate with rehabilitation care. At the same time, we must also pay attention to the patient's psychological state, promptly explain the patient's bad mood, communicate with the patient, understand the patient's psychological appeal, and let the patient maintain a good mood. Fifth, the exercise intensity of the first 3 days of rehabilitation cannot be very high. Before training, the caregiver should record the heart rate, blood pressure and electrocardiogram of the patient in detail. Immediately after 6 minutes of stopping after training, the patient's heart rate, blood pressure, and electrocardiogram were observed. For the occurrence of adverse conditions during rehabilitation exercise, the exercise can be stopped in time and processed accordingly, and then the training period can be extended according to the specific situation.

Patients in group B underwent bed rest in the first three days after surgery. They were absolutely bedridden within 1 day after surgery. The bed was used at the bedside 2 days after surgery. The bed was started on the 4th day after surgery, and the routine rehabilitation training method was carried out. The specific method is as follows: First, guide the patient's early rehabilitation exercise, and at the same time give the patient a corresponding disease presentation. Second, the psychiatrist provides psychological counseling to the patient to relax their psychological situation and help them establish a good mentality. Third, the caregiver should closely monitor the patient's condition during the rehabilitation process and record the patient's condition. Fourth, the caregiver should take care of the patient and guide him to take the medicine when taking the medicine every day. Fifth, the dietitian evaluates the patient's nutritional status on a daily basis and adjusts the patient's diet based on the patient's nutritional status²¹.

Evaluation and Judgment Indicators

The daily living ability scores, left ventricular ejection fraction, patient care satisfaction, and prognosis were observed before and after nursing intervention in the two groups. The ability of daily living is evaluated using the Barthel Index¹⁰. The higher the score, the better the ability to live. Patient care satisfaction evaluation is mainly carried out by the hospital's self-made satisfaction evaluation form. The content mainly includes the hospital environment, nursing staff working attitude, rehabilitation exercise, diet nutrition nursing, psychological nursing, medical care and treatment effect. The evaluation criteria included very satisfied, satisfied and dissatisfied, the first two being total satisfaction. The prognosis of this study was an annual follow-up of patients, recording the occurrence of adverse reactions and deaths in patients, and the overall assessment of patients' quality of life.

Statistical Analysis

Statistical analysis of all patient data was performed using SPSS 22.0 software. The use of count data (n,%) indicates that the measurement data used ($\bar{x} \pm s$) indicates that the patient's adverse reaction, death, and nursing satisfaction were compared using the independent sample χ^2 test, and the daily living ability scores and left ventricle of the two groups before and after the intervention. The ejection fraction was measured by independent sample t test, and $P < 0.05$ was considered statistically significant.

RESULTS

Comparison of Daily Life Ability and Left Ventricular Ejection Score between the Two Groups

There was no significant difference in the daily living ability score of group A before intervention ($P > 0.05$). The score of group A was significantly better than that of group B after intervention ($P < 0.05$). There was no significant difference in left ventricular ejection fraction between the two groups ($P > 0.05$); patients in group A were significantly higher than group B after intervention ($P < 0.05$). See Table 1 for details.

Table 1. Comparison of the Ability of Daily Life and the Score of Left Ventricular Ejection in the Two Groups of Patients ($\bar{x} \pm s$)				
Group n	Daily life ability score (minutes)		Left ventricular ejection fraction (%)	
	Before	After intervention	Before	After intervention
Group A 43	60.65±3.37	76.58±3.27	50.31±2.32	55.75±4.4
Group B 43	60.42±3.35	73.7±3.4	50.97±3.06	52.41±4.19
t value	-	0.317	4.003	1.127
P value	-	0.752	<0.001	0.263

Comparison of Nursing Satisfaction between the Two Groups

The total satisfaction of patients in group A was 40 (93.02%), and the total satisfaction of patients in group B was 30 (69.77%). It can be seen that the total satisfaction rate of patients in group A was significantly higher than that in group B, and the difference between the groups was statistically significant ($P<0.05$). See Table 2 for details.

Table 2. Comparison of Nursing Satisfaction between the Two Groups (example /%)				
Group n	Very satisfied	Satisfaction	Not satisfied	Total satisfaction
Group A 43	36(83.72)	4(9.3)	3(6.98)	40(93.02)
Group B 43	28(65.12)	2(4.65)	13(30.23)	30(69.77)
X ² value	-	3.909	0.717	7.679
P value	-	0.048	0.397	0.006

Comparison of Prognosis between the Two Groups

The total incidence and mortality of group A adverse reactions were 5 cases (11.63%) and 1 case (2.33%). The total incidence and death of group B were 23 cases (53.49%) and 7 cases (16.28%). It can be seen that the total incidence and mortality of adverse reactions in group A were significantly lower than those in group B, and the difference was statistically significant ($P<0.05$). See Table 3 for details.

Table 3. Comparison of Prognosis between the Two Groups (example /%)	
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Group n	Angina pectoris	Arrhythmia	Heart failure	Coronary restenosis	Total incidence	Death situation
Group A 43	2(4.65)	1(2.33)	1(2.33)	1(2.33)	5(11.63)	1(2.33)
Group B 43	9(20.93)	7(16.28)	5(11.63)	2(4.65)	23(53.49)	7(16.28)
X ² value	-	5.108	4.962	2.867	0.345	17.158
P value	-	0.024	0.026	0.090	0.557	<0.001

DISCUSSION

In China, myocardial infarction has a high incidence rate. The middle-aged and elderly people over 40 years old are high-risk groups of myocardial Infarction. The incidence of males is significantly higher than that of females. The main causes of myocardial infarction are emotional ups and downs, uncontrolled diet and overwork. et al¹¹. Acute myocardial infarction has a certain suddenness. The patient has strong persistent pain in the chest when the disease occurs, and the condition is dangerous, with high morbidity and mortality, which seriously affects patients' daily living ability and life safety¹².

In the clinical treatment of acute myocardial infarction, coronary interventional surgery is often performed. The operation is often performed by radial artery puncture, and its clinical treatment effect is better¹³. Related clinical studies have found that effective clinical nursing intervention in patients undergoing coronary intervention can promote cardiac rehabilitation and reduce postoperative adverse reactions¹⁴⁻¹⁵. At present, the routine nursing intervention for patients with acute myocardial infarction undergoing coronary artery intervention is the 7-day postoperative rehabilitation nursing intervention, that is, the absolute bed rest within 1 day after surgery, the use of the comfy chair at the bedside 2d after surgery, and the start of bed on the 4th postoperative day. Carry out routine rehabilitation training. Because the patient intervenes in the multi-bed rest in the routine rehabilitation training method, this greatly reduces the rehabilitation time of the patient, which in turn affects the rehabilitation effect of the patient. In recent years, studies have shown that patients undergoing coronary artery intervention after transradial coronary intervention require early

rehabilitation training. Patients undergoing coronary intervention require active rehabilitation and the patient's physical recovery is much better than expected¹⁶⁻¹⁷. Small-scale recovery of physical fitness in patients with acute myocardial infarction can assist in cardiac rehabilitation. In this regard, the author of the ST-segment elevation myocardial infarction undergoing coronary artery intervention for early rehabilitation time immediately after surgery, that is, according to the actual situation of the patient to carry out the corresponding physical recovery exercise, and evaluate the immediate clinical effect of immediate rehabilitation training And the impact of prognosis. The study found that the scores of daily living ability and left ventricular ejection fraction of group A were significantly higher than those of group B after intervention. This indicates that patients with acute myocardial infarction undergo rehabilitation training immediately after coronary artery intervention through the radial artery. It should be significantly better than the postoperative routine rehabilitation training method, and is more conducive to the recovery of patients' daily living ability, which is consistent with the results of other scholars¹⁸⁻¹⁹. In addition, the immediate post-operative rehabilitation training method is to make full use of the patient's postoperative time for rehabilitation treatment, mainly based on the actual situation of the patient and professional knowledge to develop a suitable rehabilitation program for the patient, including the establishment of files, rehabilitation exercises, diet nutrition, psychological care, medical treatment. Nursing, etc., and optimize the process, put the rehabilitation nursing intervention in place, solve the problem in time, pay attention to the patient's feelings, and greatly improve the nursing effect and nursing satisfaction²⁰. In this study, the total satisfaction rate of patients in group A was significantly higher than that in group B. The total incidence and mortality of group A were significantly lower than those in group B, indicating that patients with acute myocardial infarction undergo coronary artery intervention through the radial artery. The immediate rehabilitation training method can improve the prognosis of patients and improve the satisfaction of nursing.

CONCLUSION

In summary, patients with acute myocardial infarction undergoing immediate rehabilitation training after coronary artery intervention through the radial artery can not only improve left ventricular ejection fraction, daily living ability and nursing satisfaction, but also reduce postoperative adverse reactions. And the situation of death.

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