

# Application Analysis of Cardiac Rehabilitation Nursing in Patients with Acute Myocardial Infarction

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## Abstract

**Objective:** Application analysis of cardiac rehabilitation in patients with acute myocardial infarction. **Methods:** A total of 102 patients with acute myocardial infarction admitted to our hospital from January 2020 to January 2022 were retrospectively selected as the observation objects. According to the nursing measures taken, they were divided into a control group and an observation group, with 51 cases in each group. A total of 51 patients in the control group received routine nursing, while 51 patients in the observation group were guided to actively participate in the cardiac rehabilitation nursing plan. The hospitalization conditions and effects of the two groups were compared. **Results:** The cardiac function index, bed time, hospitalization time, anxiety score and depression score of the observation group were significantly better than those of the control group, and the differences were statistically significant ( $P < 0.05$ ). **Conclusion:** The application of cardiac rehabilitation nursing in patients with acute myocardial infarction has a good effect. The patients' cardiac function recovers faster, they feel more comfortable, and they also reduce the time of hospitalization and bed rest, which is conducive to improving the psychological and anxiety state of patients and improving the quality of life.

## Keywords

Acute Myocardial Infarction, Cardiac Rehabilitation Nursing, Application Analysis

## 1. Introduction

At present, acute myocardial infarction is a very common critical acute disease in clinical cardiovascular department, which is caused by the sudden reduction

and interruption of coronary artery blood supply, leading to severe persistent myocardial ischemia and related myocardial necrosis [1]. With the growth of the elderly population and the change of people's lifestyle, the incidence of the disease is increasing, and the age of onset is young. Cardiac rehabilitation is a comprehensive intervention method, including medication, exercise, nutrition, life guidance and other aspects, to promote patients to build a healthy behavior and improve the prognosis and outcome. So as to return to social life as soon as possible. Many studies have pointed out that early cardiac rehabilitation intervention can reduce the incidence of reinfarction in patients, and has a positive impact on the mental health of patients, which has been promoted and applied in primary hospitals [2]. This study aims to study the effect of cardiac rehabilitation nursing on patients with acute myocardial infarction, and to provide a basis for clinical nurses to formulate effective cardiac rehabilitation nursing service strategies for patients with acute myocardial infarction. 102 patients with acute myocardial infarction in our hospital were observed and studied to analyze the effect of cardiac rehabilitation nursing. The report is as follows.

## **2. Materials and Methods**

### **2.1. General Information**

A total of 102 patients with acute myocardial infarction admitted to our hospital from January 2020 to January 2022 were selected and divided into a control group and an observation group according to the nursing methods used by the patients, with 51 cases in each group. There were 30 males and 21 females in the control group, aged from 39 to 71 years, with an average age of  $(59.80 \pm 7.62)$  years. There were 28 males and 23 females in the observation group, aged from 40 to 73 years, with an average age of  $(58.16 \pm 8.53)$  years. There was no significant difference in gender, age and other data between the two groups ( $P > 0.05$ ).

### **2.2. Nursing Methods**

The patients in the control group were given routine nursing care, including condition monitoring, oxygen inhalation, pain relief, anticoagulation and other medication nursing. The observation group was given routine nursing and cardiac rehabilitation nursing. The specific measures were as follows: 1) Psychological nursing: According to the patient's culture, age, etc., the patient was evaluated, and the appropriate communication methods were selected to communicate with the patient, and a good doctor-patient relationship was established with the patient. At any time, the patient's emotional changes were paid attention to, the patient's psychological state was adjusted, the patient's thoughts were understood in the communication process, the psychological problems were analyzed, and the psychological counseling was carried out, the patient was comfort-encouraged, and the tone was as approachable as possible. 2) Deep breathing training: in a quiet ward, the patient was given separate deep breathing training guidance. The patient was supine on the bed according to the instruc-

tions, the eyes were gently closed, the muscles of the whole body were gradually relaxed, and the inhalation and exhalation were slowly performed. The first inhalation was through the nose, and then the gas was exhaled through the mouth.

3) Music intervention: In recent years, many studies have shown that music therapy, as a non-pharmacological intervention, has many advantages such as safety, simplicity and low cost. It can stabilize the patient's mood easily and happily, so as to play a good auxiliary treatment role [3].

4) Exercise training: exercise training methods include Baduanjin, Seven-step rehabilitation training, etc., let the family members of the patients accompany the patients to exercise together, do a good job of assisting and cooperating with the work, and pay attention to monitoring the heart rate. In case of abnormal heart rate or chest tightness, chest pain, palpitation, vertigo and other symptoms, the exercise should be immediately suspended. Baduanjin of traditional Chinese medicine originated from the Daoyin technique of traditional Chinese medicine. The specific contents include: the hands support the three jiao of heaven, the left and right open bow is like shooting sculpture, the spleen and stomach must be treated by single lifting, the five labor and seven injuries must be looked backward, the head and tail must be wagged to the heart, the hands climb the foot to fix the kidney waist, the fist is angry, and the back seven diseases are eliminated. As a kind of qigong therapy, it is a gentle and gentle aerobic exercise. Long-term adherence to training can effectively regulate the breathing form, increase lung ventilation and gas exchange function, and reduce heart pressure and improve cardiopulmonary circulation function through long-term cardiopulmonary function exercise [4]. Seven-step rehabilitation training is a kind of progressive low-intensity physical activity training. Through passive and active activities, it can reduce the adverse effects of long-term bed rest on cardiovascular function, shorten the degree of continuous decline in physical fitness after surgery, and promote the effective rehabilitation of cardiac function [5].

5) Smoking and drinking cessation: psychological, behavioral guidance and drug assistance comprehensive intervention for patients to quit smoking and drinking, inform patients of the harm of the behavior, formulate inquiry, advice, evaluation, help, follow-up and other procedures to help patients to quit smoking and drinking step by step.

6) Diet management: good dietary habits can help to control body weight and three highs. According to the risk factors of patients, foods with low salt and fat content should be adopted, and the intake of coarse grains and fresh fruits and vegetables should be increased to avoid constipation.

7) Weight management: According to the World Health Organization standard, the normal range of BMI is 18.5 - 24.9 kg/m<sup>2</sup>, and BMI can be controlled in the normal range through exercise and diet control [6]. In addition, nurses need to use health education videos, on-site education, popular science articles and other means to help patients and their families to popularize related health knowledge.

### 2.3. Observation Indicators

The cardiac function index, bedtime, length of hospital stay, anxiety score and

depression score were compared between the two groups. 1) Cardiac function indexes included Tei index, left ventricular ejection fraction (LVEF) and 6-minute walk test (6MWT). GE color Doppler ultrasound was used to detect Tei index and LVEF. 2) The bed rest time and hospitalization time of the two groups were observed and recorded and compared. 3) Hamilton Anxiety Scale (HAMA) and Hamilton Depression Scale (HAMD) were used to evaluate the patients' anxiety and depression. HAMA scale: a score  $\geq 7$  indicates the presence of anxiety symptoms, and a higher score indicates more severe anxiety. HAMD scale: score  $\geq 7$  indicates the presence of depressive symptoms, and the higher the score, the more severe the depression [7].

## 2.4. Statistical Methods

In this study, SPSS 20.0 was used to summarize the information data generated in the process of research, and the measurement data were represented by ( $\bar{x} \pm s$ ), the t test was used to compare the data between the two groups when the difference was statistically significant  $P < 0.05$ .

## 3. Results

1) Comparison of cardiac function indexes between the two groups showed that the cardiac function indexes of the observation group were better than those of the control group ( $P < 0.05$ , **Table 1**).

2) The bed rest time and hospitalization time of the observation group were significantly less than those of the control group, and the difference was statistically significant ( $P < 0.05$ , **Table 2**).

3) Compared with the depression and anxiety scores of the two groups, the anxiety and depression scale scores of the observation group were better than those of the control group, and the difference between the two groups was prominent, with statistical advantages ( $P < 0.05$ , **Table 3**).

## 4. Discussion

Acute myocardial infarction (AMI) is an acute myocardial ischemic necrosis

**Table 1.** Comparison of cardiac function indexes between the two groups ( $\bar{x} \pm s$ ).

Group	Cases (n)	Tei index	Left ventricular ejection fraction (%)	6 MWT (m)
Control group	51	0.45 $\pm$ 0.13	48.19 $\pm$ 4.92	408 $\pm$ 50.41
Observation group	51	0.33 $\pm$ 0.10	57.44 $\pm$ 4.15	496.15 $\pm$ 65.75

**Table 2.** Comparison of bed rest time and hospitalization time between the two groups ( $\bar{x} \pm s$ ).

Group	Cases (n)	Bedtime (h)	Length of hospital stay (d)
Control group	51	66.23 $\pm$ 7.68	11.12 $\pm$ 3.23
Observation group	51	42.52 $\pm$ 7.95	7.65 $\pm$ 3.14

**Table 3.** Comparison of depression and anxiety scores between the two groups ( $\bar{x} \pm s$ ).

Group	Cases (n)	Depression score (score)	Anxiety score(score)
Control group	51	6.26 ± 1.98	32.16 ± 3.57
Observation group	51	4.74 ± 1.12	23.44 ± 4.15

caused by the interruption of myocardial blood perfusion caused by complete occlusion of the coronary artery. The patients have a sudden onset and seriously affect the physical and mental health of the patients. With the progression of the disease, patients with acute myocardial infarction are prone to adverse cardiovascular events, which increase the risk of sudden cardiac death. The main clinical manifestations of patients are arrhythmia, chest pain, heart failure and circulatory dysfunction, which have acute onset, rapid development and serious condition, which seriously threaten the physical health and life safety of patients [8].

In recent years, with the continuous development of reperfusion therapy for acute myocardial infarction, cardiac rehabilitation as a treatment method has gradually attracted people's attention. Cardiac rehabilitation is not only an early exercise training, but also a comprehensive program of rehabilitation education, lifestyle guidance, risk factor control and psychological intervention [9]. In this study, the use of cardiac rehabilitation nursing in the treatment of patients with acute myocardial infarction can significantly improve the prognosis of patients. Cardiac rehabilitation nursing can improve the activity tolerance of patients through targeted rehabilitation training, reduce the impact of the disease on body and mind, accelerate the recovery of patients, and shorten the time of hospitalization. The cardiac function index, bedtime, hospitalization time, anxiety score and depression score of the observation group were significantly better than those of the control group. Analysis of the reasons: during the implementation of cardiac rehabilitation nursing plan, psychological nursing can eliminate the potential or existing negative psychology of patients, help them solve psychological problems and eliminate negative emotions; Deep breathing training, music intervention and other measures can make patients into a relaxed state. Exercise training (such as Baduanjin and seven-step method) can help patients enhance exercise endurance, cardiopulmonary function, improve myocardial blood perfusion, reduce the risk of myocardial ischemia again, and have better rehabilitation effect [10]. At the same time, cardiac rehabilitation exercise therapy can help postoperative patients overcome anxiety, depression and other negative emotions, help patients actively cooperate with cardiac rehabilitation exercise, and enhance the rehabilitation effect of cardiac function (The last sentence was deleted here).

In conclusion, cardiac rehabilitation nursing on the basis of routine nursing guidance can improve the quality of life of patients with acute myocardial infarction, such as psychological state and cardiac function index level, and promote the body to maintain a healthy state, which has great clinical application

value.

### Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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