ORIGINAL RESEARCH

Clinical Efficacy of Detailed Intervention After Clopidogrel Treatment and Analysis of Angina Relief in Patients with CHD

Yuya Yang, MM; Xiang Mei, MM; Xinbing Liu, MM; Tianhua Liu, MM; Yanyan Bai, MM; Liuliu Feng, MM

ABSTRACT

Objective • Coronary heart disease is incurable and prone to recurrence, and long-term dependence on medication and good nursing management to improve the prognosis. The effect of clopidogrel in the treatment of coronary heart disease is affected by many factors, so paying more attention to details in the process of patient care is conducive to creating more ideal recovery conditions for patients. The purpose of this study is to conduct detailed intervention for coronary heart disease (CHD) after clopidogrel treatment, and to analyze the clinical efficacy of this intervention mode on CHD patients and the relief of angina pectoris.

Methods • A total of 120 patients with coronary heart disease who were diagnosed and treated in our hospital from May 2020 to March 2022 were selected as the research objects and divided into a detail group (n=60) and a routine group (n=60) according to the computer randomization method, All research subjects were given clopidogrel intervention, followed by routine intervention in the routine group, and detailed intervention in the detail group. Detailed intervention includes specific measures such as psychological intervention, life intervention, health education, medical assessments, personalized care. The control of angina pectoris of the subjects was analyzed, and the daily life, motor function, quality of life score, negative emotion score and complications were observed.

Results • The dimension score of TS [(83.50±5.14) points vs (77.42±4.35) points], DP [(85.59±5.78) points vs (80.14±5.43) points], PL [(79.62±5.19) points vs (74.18±5.04) points], AS [(90.69±6.35) points vs (85.57±6.12) points], AF[(83.54±5.22) points vs (77.51±5.16) points] in the detail group were higher than those of conventional group ($P < .001$). The differences in daily life, motor function of the subjects before the intervention were not comparable ($P > .05$), and the scores of daily life [(86.14±5.52) points vs (65.48±5.17) points] and motor function [(88.97±5.34) points vs (70.58±5.46) points] in the detail group at 4 weeks after intervention were higher than those in the routine group ($P < .001$). The quality of life in the detail group [mental state of (17.56±2.12) points vs (20.13±2.09) points, mental health of (15.62±2.34) points vs (18.09±2.06) points, social function of (15.86±2.41) points vs (18.11±2.14) points, emotional function of (14.36±3.45) points vs (16.78±3.69) points] were lower than those of the conventional group ($P < .001$). The negative mood scores [SAS score of (41.70±3.14) points vs (67.14±3.25) points, SDS score of (39.59±4.11) points vs (60.58±4.54) points] in the detail group were lower than those of the conventional group ($P < .001$). In addition, the total incidence of complications (3.33% vs 13.33%) in the detail group was significantly lower than that in the regular group ($P < .001$).

Conclusions • Detailed intervention after clopidogrel treatment in CHD patients can significantly improve the efficacy of patients, reduce angina pectoris, and at the same time can effectively improve various physical functions and relieve their negative emotions, which is worthy of being widely used in clinical practice. Better control of angina pectoris is beneficial to reduce the frequency of hospital admission and save medical resources. The sample size of this study is small, and the sample size will be further expanded in the future to improve the scientific conclusion.

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INTRODUCTION

Coronary heart disease (CHD) is a heart disease caused by stenosis or occlusion of the coronary lumen.[1] At present, the number of coronary heart disease patients in the world has reached 190 million, and about 9 million people die from coronary heart disease every year.[2] The main clinical features are chest pain, chest tightness, and aggravation after activities, and CHD is more common in middle-aged and elderly people men. The high blood pressure is one of the main causes of coronary heart disease, other causes include high cholesterol, obesity, family history and so on, while men face greater pressure in daily life and work, and men smoke, drink and other unhealthy lifestyles are significantly more than

women.[3,4] Angina pectoris not only seriously affects the daily life of patients, but also is an early warning signal of adverse cardiac events. Clinical treatment and treatment of angina pectoris should be paid attention to, which is of great significance for improving the prognosis of patients with coronary heart disease.[5] Clopidogrel, an anti-platelet agglutination drug, is often used in clinical intervention. It can block the writing platelet receptor and further inhibit thrombosis. It is often used in the treatment of CHD patients, but certain accidents will occur during treatment, so effective nursing intervention is required for patients after treatment. Clopidogrel is of great significance for the prevention of angina pectoris and anti-platelet aggregation in patients with coronary heart disease, but the therapeutic effect will also be affected by daily habits, psychology and other aspects. Therefore, the use of clopidogrel in the treatment of coronary heart disease coupled with effective nursing intervention should not be ignored, and is one of the key factors to ensure the efficacy of drug therapy.[6-8] Detailed intervention can provide patients with more comprehensive care, effectively control the patient's condition, and have a significant prognostic effect. Based on this, this study explored the clinical efficacy of detailed intervention after clopidogrel treatment and the remission of angina pectoris in patients with CHD.

MATERIALS AND METHODS

Baseline data

A total of 120 CHD patients admitted to our hospital from May 2020 to March 2022 were included in the study, and they were randomly divided into a detail group and a routine group, with 60 cases in each group. Inclusion criteria: (1) meet the diagnostic criteria for coronary heart disease;[9] (2) no mental illness, can communicate normally; (3) complete data, informed about the research, and signed the consent form; (4) no other cardiovascular disease; (5) Patients with liver and kidney insufficiency. Exclusion criteria: (1) in critical condition and unable to communicate; (2) combined with other malignant tumors; (3) allergic to the drug in this study; (4) unable to participate in the study throughout the course.

Methods

All patients took clopidogrel orally, 2 tablets/time, once/day, for 4 weeks. The routine group received routine nursing intervention, (1) The medical staff regularly checked the body temperature, blood pressure, and other vital signs of the research subjects and informed the doctor of the abnormal situation in time; (2) The research subjects are instructed to take the medicine in the correct way and various contraindications, Indicate the method of use on the outer package of the drug; (3) Assist the research subjects to inhale oxygen, connect the device, and turn off the device after the oxygen inhalation is completed; (4) Improve the self-management and supervision of wards and patients, keep wards clean and tidy, and supervise patients to carry out reasonable diet and healthy lifestyle. Routine nursing is mainly effective nursing care for patients after treatment.

The detail group gives detailed nursing intervention, (1) Set up a detailed intervention group divided into 3 groups. A senior nurse heads the group and leads 4 responsible nurses to provide services for the research subjects. Members need to announce to patients and their families; (2) Full-time responsibility system, team members rotate for 8 hours, the team leader arranges the work content and shifts, and pays attention to holidays and special circumstances; (3) Special nursing, the medical staff will conduct individualized psychological and physiological intervention and health education according to the personal characteristics of the research subjects, such as their condition, personality, and living habits; (1) Psychological intervention: Medical staff pay close attention to the psychological state of the research subjects, and resolve negative emotions in a timely manner when they find negative emotions. (2) Life intervention. Regularly measure the blood pressure and blood sugar levels of the research subjects. After the vital signs of the research subjects are stable, help them to perform appropriate exercises (jogging, badminton). If the patient does not defecate well, massage the patient's abdomen and instruct him not to defecate vigorously; (3) Health education, regular one-on-one health lectures are held in the group to inform patients about disease-related knowledge and drug use, and at the same time explain the prohibited items in life for patients. The educational knowledge can be made into a book for easy viewing. Detailed intervention after treatment can provide special nursing care for patients with a whole-day responsibility system and effectively control patients' condition. (4) Medical assessments. Pay attention to the patient's heart rate and pain relief after medication, and strengthen night rounds to prevent early morning or night angina. To evaluate the severity and duration of angina pain, ECG should be performed and reported to the doctor when angina is aggravated. (5) Personalized care. Help patients adjust reasonable dietary structure according to patient preferences, avoid tobacco, alcohol, spicy food. At any time can not be too hungry too full, especially before going to bed should not be too full, at the same time should guide the patient to do appropriate exercise, gradually exercise the body's ability to adapt, should rest early at night, maintain adequate sleep.

Observation indicators

(1) The Seattle Angina Questionnaire (SAQ) was used to assess patients' control of angina symptoms, which includes treatment satisfaction (Treatment Satisfaction, TS), disease awareness (Disease Awareness, DP), and physical activity satisfaction. Physical activity Limitation (PL), angina pectoris Stable state (AS) and angina attack (Angina Attack, AF) 5 items, the full score is 100 points; the higher the score, the better the control of angina pectoris.[10]

(2) The modified Barthel Index (MBI) was used to assess the subjects' ability to perform daily living, and the Fugel-

Meyer (FMA) was used to assess the subjects' ability to perform physical movements, both with an overall score of 100 points, with the higher the score, the better the daily activity ability and motor function.[11,12]

(3) Since angina pectoris symptoms can significantly affect patients' quality of life, simple Quality of life Rating Scale (QOL) was used to evaluate patients' quality of life after intervention, mainly including mental health, mental state, social function and emotional function, with a full score of 100 for each. The lower the score, the better the quality of life.[13]

(4) Patients with coronary heart disease usually have obvious negative emotions. Self-rating Anxiety Scale (SAS) and self-rating Depression Scale (SDS) were used to evaluate the emotional state of patients. The higher the score, the more severe the bad mood.[14,15]

(5) Patients with coronary heart disease are prone to adverse cardiac events, so the complications of the study subjects were observed, including heart failure, myocardial infarction, and angina pectoris.

Statistical analysis

Statistic Package for Social Science (SPSS) 26.0 software (IBM, Armonk, NY, USA) was used for data processing, mean±standard deviation ($\bar{x} \pm s$) represents measurement data, an independent samples t test was used for group comparisons of measurement data, and F test was used for multiple groups; between groups repeated measures analysis of variance was used for comparison of each time period, and spherical test was performed; percentage (%) represented count data, the χ^2 test was used for group comparisons of count data; $P < .05$, the difference was statistically significant.

RESULTS

Baseline data

There were no differences in baseline data such as age, gender, body weight, disease course and cardiac function classification among the study subjects ($P > .05$). Table 1.

Comparison of angina pectoris control

The SAQ scale showed that the detail group's TS, DP, PL, AS and AF indexes were significantly higher than those of the routine group ($t = 6.758, 7.341, 7.692, 6.337, 6.284$, $P < .05$). Table 2.

Daily life and motor function

Before the intervention, the MBI and FMA scores of the research subjects were not comparable ($P > .05$); After 2 weeks and 4 weeks of intervention, the scores of the subjects were improved compared with those before the intervention, and the scores of daily life ($F_{\text{time point}} = 125.117$, $F_{\text{time point * group}} = 184.206$, $P < .001$) and motor function in the detail group were higher than those in the conventional group ($F_{\text{time point}} = 154.028$, $F_{\text{time point * group}} = 173.226.206$, $P < .001$). Table 3, Figures 1, 2.

Table 1. Baseline data comparison of research subjects [n, % ($\bar{x} \pm s$)]

Project		Detail group (n = 60)	Regular group (n=60)	t/χ^2	P value
Age		59.49±2.24	58.79±2.17	0.132	.079
Gender	Female	26 (43.33)	28 (46.67)	0.214	.068
	Male	34 (56.67)	32 (53.33)		
Body mass (kg/m²)		22.43±1.68	22.09±1.34	0.117	.085
Disease duration (years)		3.79±0.04	3.24±0.05	0.098	.091
Cardiac function classification	Class II	23 (38.33)	25 (41.67)	0.076	.096
	Class III	18 (30.00)	19 (31.67)		
	Class IV	19 (31.67)	16 (26.66)		

Table 2. Comparison of SAQ scale scores of research subjects ($\bar{x} \pm s$, points)

Project	Detail group (n = 60)	Regular group (n = 60)	t	P value
TS	83.50±5.14	77.42±4.35	6.758	<.001
DP	85.59±5.78	80.14±5.43	7.341	<.001
PL	79.62±5.19	74.18±5.04	7.692	<.001
AS	90.69±6.35	85.57±6.12	6.337	<.001
AF	83.54±5.22	77.51±5.16	6.284	<.001

Table 3. Comparison of MBI and FMA scores before intervention, 2 weeks and 4 weeks after intervention ($\bar{x} \pm s$)

Group	Time point	MBI (Score)	FMA (Score)
Detail group (n = 60)	before intervention	55.72±4.17	60.11±4.24
	2 weeks after intervention	68.43±5.34	74.32±5.16
	4 weeks after intervention	86.14±5.52	88.97±5.34
Regular group (n = 60)	before intervention	55.58±4.13	60.35±4.48
	2 weeks after intervention	60.72±5.07	64.33±5.11
	4 weeks after intervention	65.48±5.17	70.58±5.46
$F_{\text{time point}}$		125.117	154.028
$P_{\text{time point}}$		<.001	<.001
$F_{\text{time point * group}}$		184.206	173.226
$P_{\text{time point * group}}$		<.001	<.001

Figure 1. MBI scores of the subjects before the intervention, 2 weeks and 4 weeks after the intervention

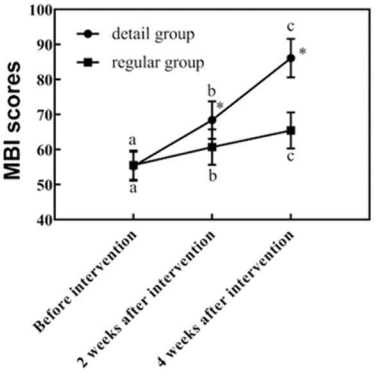

Figure 2. FMA scores of the subjects before the intervention, 2 weeks and 4 weeks after the intervention

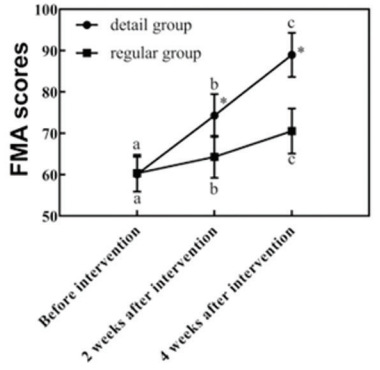

Table 4. QOL scores of study subjects after intervention ($\bar{x} \pm s$)

Project	Detail group	Regular group	*t*	*P* value
Number of cases	60	60		
Mental state	17.56±2.12	20.13±2.09	7.814	<.001
Mental health	15.62±2.34	18.09±2.06	8.772	<.001
Social function	15.86±2.41	18.11±2.14	8.013	<.001
Emotional function	14.36±3.45	16.78±3.69	7.647	<.001

Table 5. Comparison of SAS and SDS of research objects ($\bar{x} \pm s$)

Group	Number of cases	SAS (score)	SDS (score)
Detail group	60	41.70±3.14	39.59±4.11
Regular group	60	67.14±3.25	60.58±4.54
t		8.742	8.694
P value		<.001	<.001

Table 6. Comparison of complication rates among study subjects (n, %)

Group	Number of cases	Heart failure	Angina pectoris	Myocardial infarction	Total incidence
Detail group	60	1 (1.67)	0 (0.00)	1 (1.67)	2 (3.33)
Regular group	60	3 (5.00)	2 (3.33)	3 (5.00)	8 (13.33)
χ^2		6.547	6.382	7.118	6.324
P value		<.001	<.001	<.001	<.001

Quality of life

The scores of mental state, mental health, social function and emotional function in the detail group were lower than those in the routine group (t = 7.814, 8.772, 8.013, 7.647, P < .001). Table 4.

Bad mood

The bad mood in the study group was significantly lower than that in the conventional group (t = 8.742, 8.694, P < .001). Table 5.

Complications

The incidences of heart failure, angina pectoris and myocardial infarction in the detail group were lower than those in the routine group (χ^2=6.547, 6.382, 7.118, 6.324, P < .001). Table 6.

DISCUSSION

Clinical use of antithrombotic drugs (clopidogrel) can inhibit platelet aggregation, avoid thrombosis, reduce the occurrence and progression of coronary heart disease, combined with effective nursing intervention can strengthen the effect.[16,17] Previous studies have shown that paying attention to detail nursing can benefit patients with coronary heart disease from both physical and mental aspects.[18] The results of this study also show that compared with conventional nursing, detailed nursing has more advantages in improving patients' negative emotions, enhancing daily living ability and motor function, and can effectively improve patients' quality of life and control effect of angina pectoris, which is consistent with the results of previous studies.

The Shi G team[19] study found that humanized nursing intervention can effectively control angina pectoris in CHD. The results of this study are similar. The author's experiment found that the control of angina pectoris in the detailed nursing intervention was significantly higher than that in the conventional group. The reason is that detailed nursing intervenes the research objects in the whole process from the aspects of psychophysiology and education, and each research object can receive targeted intervention to effectively control the disease. The on-the-job system ensures that study subjects receive round-the-clock care, further accelerating angina control. In addition, through comparison, the author found that the daily living ability, motor function and quality of life of the detailed group were better than those of the routine group, which was similar to the conclusion of the scholars in Wang C Y[20], indicating that the detailed intervention during the treatment of CHD patients can effectively improve their daily living ability and motor function, thereby improving the quality of life. The reasons may be as follows: the detailed intervention emphasizes life care, pays attention to the reasonable combination of diet and exercise of the research subjects, develops good living habits and diet structure, and ensures a balanced diet and exercise, thereby improving daily living ability and motor function, and regularly. Health education can improve the overall literacy of the research subjects, increase the awareness of disease-related knowledge, promote treatment compliance, speed up recovery, and further improve the quality of life. Compared with conventional nursing, detailed nursing can extend the details of life, which is conducive to helping patients achieve good disease management through the adjustment of diet and activities in their daily life, and has positive significance for improving prognosis.

Zhou X[21] Scholars' studies have shown that predictive intervention can effectively reduce the negative emotions of CHD patients. The author also confirmed this conclusion during the experiment. The results show that detailed intervention can effectively regulate the negative emotions of the research subjects. The reason is that detailed intervention can provide high-quality psychological intervention for patients. Active communication between doctors and patients can reduce the psychological pressure of patients so that they can maintain a relatively stable attitude in the face of diseases, actively preach disease-cure pathology, and increase research subjects' confidence in treatment. The author also found that detailed intervention can effectively reduce the occurrence of adverse reactions, It mainly relies on detailed nursing to provide comprehensive and professional help to the research subjects, reasonably speed up the recovery of the disease, and instruct the patients to live a healthy life to avoid a series of adverse reactions. The results of this study confirm that detailed nursing can improve the quality of life of patients by improving negative emotions and enhancing the life ability and motor function of patients, strengthen the control effect of angina pectoris in patients with coronary heart disease, and bring significant benefits to patients.

The sample size of this study is small, and there is no specific intervention items in psychological intervention and life details, which is the shortcoming and needs to be improved in the future. In addition, considering that the quality of life of patients has been greatly improved after the improvement of negative emotions, psychological

intervention can be strengthened for patients with coronary heart disease, supplemented by appropriate psychological treatment, and the physical and mental state of patients can be improved to the maximum extent.

CONCLUSION

In conclusion, the detailed intervention of patients with coronary heart disease after clopidogrel treatment can improve negative emotions, enhance daily living ability and motor function, improve quality of life, strengthen the control effect of angina pectoris, and reduce adverse cardiac events compared with conventional care. This result also shows that the application of detailed care in the prevention of angina pectoris attack has more advantages, can reduce the readmission of patients, and thus save medical resources. Detailed nursing creates better rehabilitation conditions for patients through psychological intervention, health education, life intervention, medical evaluation and personalized intervention, benefits patients from both physical and psychological aspects, and is conducive to reducing the attack of angina pectoris, with high safety and clinical feasibility, and has a high application prospect. The study also had some limitations, such as a small sample size and no classification of coronary heart disease severity. In the future, the sample size should be expanded and stratified analysis should be carried out to highlight the application effect of detailed nursing in patients with different degrees of coronary heart disease.

There are still some limitations in this study. The results may be biased due to the small selection of subjects or uncertain factors. Further studies can be conducted to avoid the above situations to provide a more accurate basis for treatment and intervention of CHD patients.

ETHICAL COMPLIANCE

This study was approved by the ethics committee of Shidong Hospital affiliated to University of Shanghai for Science and Technology. Signed written informed consents were obtained from the patients and/or guardians.

CONFLICT OF INTEREST

The authors have no potential conflicts of interest to report relevant to this article.

AUTHOR CONTRIBUTIONS

YY, XM, YB and LF designed the study and performed the experiments, YY, XM and XL collected the data, YB, LF and TL analyzed the data, YY, XM, YB and LF prepared the manuscript. All authors read and approved the final manuscript. YY and XM contributed equally to this work

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