Int J Clin Exp Med 2019;12(11):12950-12956
www.ijcem.com /ISSN:1940-5901/IJCEM0099452

Original Article

The Prognosis and recurrence risk of patients with cirrhosis are greatly improved by clinical pathway nursing combined with psychological intervention

Zhaoxia Ju[1], Guixiang Wu[2], Qiulan Sun[1]

Departments of [1]Nursing, [2]Hepatology, The Fifth People's Hospital of Jiangsu Wuxi, Wuxi, Jiangsu, China

Received July 9, 2019; Accepted October 3, 2019; Epub November 15, 2019; Published November 30, 2019

Abstract: Objective: This study aimed to investigate the effect of clinical pathway nursing combined with psychological intervention on patients with cirrhosis accompanied by gastrointestinal hemorrhage. Methods: One hundred and forty patients with cirrhosis complicated with gastrointestinal hemorrhage were randomly and equally divided into group A, patients treated with routine nursing, and group B, patients treated with clinical pathway nursing combined with psychological intervention in addition to routine nursing. The self-rating depression scale (SDS) and Self-Rating Anxiety Scale (SAS) scores were measured in the two groups. GQOLI-74 was performed to evaluate quality of life before and after intervention. The recurrence of complications, hospitalization time, expenses, and health knowledge in the two groups were recorded. Results: Group A showed significantly lower SDS, SAS, GQOLI-74, health knowledge scores, and satisfaction of nursing than group B after treatment. The total recurrence rate, hospitalization time, expenses and adverse complications in group B was significantly lower than they were in group A. Conclusion: Clinical pathway nursing combined with psychological intervention can effectively improve the quality of life in patients with cirrhosis and gastrointestinal bleeding.

Keywords: Cirrhosis, gastrointestinal bleeding, clinical pathway nursing, psychological intervention

Introduction

Cirrhosis is a chronic liver disease with a diffuse development [1]. As a chronic disease, cirrhosis is also associated with more concurrent diseases [2]. Studies show that cirrhosis is closely related to hemorrhages from the upper gastrointestinal tract, the gastric varices, or the esophagus. Cirrhosis and related complications are the direct cause of death in patients with cirrhosis, which seriously threatens people's quality of life [3-5]. To make matters worse, the incidence of cirrhosis has been increasing [6]. The treatment time of cirrhosis-related diseases is long, the recurrence risk is high, and the prognosis of patients is poor; therefore, in order to improve the postoperative prognosis quality and the quality of life of patients with cirrhosis and combined gastrointestinal hemorrhage, appropriate and effective nursing intervention is an important option [7].

With the continuous improvement of medical services, the humanistic concerns of nursing and the concept of health popularization are also continuously being developed. Various modern nursing models have been applied in clinical practice, and have achieved satisfactory results [8-10]. Studies had shown that the combination of different nursing interventions is of great significance to improve quality of life [11]. Clinical pathway nursing combined with psychological intervention is patient-centered. It is a new type of hospital care pattern based on different department characteristics and daily care model standards. It can provide patients with high-quality, high-level and low-cost medical services [12]. Conventional nursing intervention was compared with clinical pathway nursing and psychological intervention in this study. It aims to explore the effect of clinical pathway care combined with psychological intervention on the application value and the quality of life in patients with cirrhosis and coronary heart disease.

Materials and methods

General information

140 patients with cirrhosis and gastrointestinal hemorrhage in our hospital were randomly divided. The patients (N=70) in group A were treated with routine nursing methods, while the patients in group B (N=70) were treated with clinical pathway care and psychological intervention.

Exclusion criteria: All included patients were diagnosed with cirrhosis and gastrointestinal hemorrhage. The diagnostic criteria were consistent with the World Health Organization's cirrhosis diagnosis guidelines [13]. The related symptoms included early active compensatory regeneration, which is followed by liver function damage, portal hypertension and finally upper gastrointestinal bleeding, hypersplenism, cancer, etc. [13]; patients with other complications or mental disorders were excluded. The patients and their families were informed in advance, and the study was approved by The Fifth People's Hospital of Jiangsu Wuxi Ethics Committee.

Nursing methods

The patients in group A were treated with conventional cirrhosis and gastrointestinal bleeding nursing (routine nursing and psychological intervention); all vital signs of the patients were monitored in real time and administrated with medicines. The patients in group B were treated with clinical pathway care and psychological intervention. (1) The clinical pathway table is a clinical nursing pathway formulated after the analysis and evaluation of the patient's clinical data. It is made up of a medical staff form and a patient form, which is recorded daily. The clinical pathway table of care combines nursing methods with health knowledge education. A clinical pathway team consisting of professionals will analyze and review cases for the purpose of developing the daily nursing content. The clinical pathway table of care is mainly about health knowledge education. All the relevant medical staff implementing the clinical nursing pathway are professionally trained. The nursing activities are strictly implemented in accordance with the contents of the clinical nursing pathway table. At admission, medical staff send relevant clinical pathway tables to patients and their families. Nursing staff l provide them with multi-faceted nursing services and patiently introduce the knowledge of cirrhosis and related complications to the patients and their families. A good doctor-patient atmosphere is established. Meanwhile, the patient should be aware that it is important to combine the treatment process with treatment goals during the hospitalization. Moreover, the nursing during the process is also vital. Before the operation, the preoperative preparation precautions, the operating room environment, the surgical position, the anesthesia method, the surgical method and how to cooperate with psychological counseling are all introduced to the patient in detail. After the operation, the patient's vital signs and wounds are observed. The patient's diet is strictly monitored. Food with a high-fiber content, high-protein, less salt, and less oil are recommended. Regularly follow-up on the patient is performed. The nurses are aware that any discomfort requires immediate treatment.

(2) Psychological intervention nursing: relevant medical staff explain the occurrence and development of cirrhosis and gastrointestinal hemorrhage to the patients with cirrhosis and gastrointestinal hemorrhage and to their families. Therefore, the patients will have a correct understanding of cirrhosis and gastrointestinal hemorrhage. This can relieve the adverse psychological conditions of patients with cirrhosis and gastrointestinal hemorrhage caused by treatment. The patients should be informed of the importance of nursing; if adverse emotions occur in patients with cirrhosis and gastrointestinal hemorrhage, targeted emotional counseling can also be carried out. Successful cure cases can be appropriately described to the patients. Their families can actively encourage the patients with cirrhosis and gastrointestinal hemorrhage. Therefore, the patients with cirrhosis and gastrointestinal hemorrhage can gain confidence in fighting the disease. The patients' psychological burden is reduced, and the treatment compliance is improved.

Outcome measures

The general clinical data, hospitalization time, hospitalization cost, acquisition of related knowledge, the complication recurrence (including irregular bleeding in the digestive tract,

Table 1. General information of the two groups

Group	Group A (n=70)	Group B (n=70)	t/X^2	P
Age (years)	52.18 ± 11.16	52.02 ± 10.35	0.088	0.930
Gender				
Female	18 (25.71)	20 (28.57)	0.145	0.704
Male	52 (74.29)	50 (71.43)		
BMI (kg/m^2)	19.63 ± 2.21	20.25 ± 1.73	1.550	0.123
Smoking situation			0.000	1.000
No	0 (0.00)	0 (0.00)		
Have	70 (100.00)	70 (100.00)		
Drinking situation			0.518	0.472
No	21 (30.00)	25 (35.71)		
Have	49 (70.00)	45 (64.29)		
Blood phosphorus (mmol/L)	1.99 ± 0.42	1.85 ± 0.64	1.530	0.128
Renal function				
BUN (mmol/L)	6.28 ± 3.15	6.26 ± 2.09	0.044	0.965
Cr (mmol/d)	4.97 ± 2.55	5.12 ± 1.32	0.437	0.663

infection, hepatic encephalopathy, and the hepatorenal syndrome) between group A and group B were compared. SDS and SAS were provided to evaluate the unhealthy emotions in group A and group B. The scores were proportional to the degree of anxiety and depression. The GQOLI-74 [14] was used to compare the quality of life between group A and group B (including physical health, mental health, material life, social function; the score is proportional to the quality of life). The nursing satisfaction of the patients between group A and group B was compared.

Statistical methods

Statistical data was analyzed with SPSS 19.0 (Asia Analytics Formerly SPSS China). The enumeration data were indicated by [n (%)] and examined with an χ^2 test; the measurement data was denoted by (X ± S). A paired *t* test was used for the comparisons before and after treatment within the group. An independent sample *t* test was used for comparison between the two groups; when the *P* value was less than 0.05, the difference was statistically significant.

Results

General clinical data of group A and group B

There were no dramatic differences in the baseline data, including age, gender, BMI, smoking and drinking habits, blood phosphorus, and renal function between the two groups (P>0.05) (**Table 1**).

Comparison of hospitalization time, cost and acquisition of related knowledge between group A and group B

The hospitalization time (days), hospitalization cost (yuan), and health knowledge scores of group A were (9.13 ± 1.25), (4826.29 ± 400.25), (30.69 ± 2.84). The hospitalization time (days), hospitalization cost (yuan), and health knowledge scores of group B were (5.15 ± 1.90), (2832.66 ± 315.83), and (23.04 ± 2.53), respectively. The hospitalization time (days) and hospitalization cost (yuan) in group B were lower than those in group A. The health knowledge scores in group B were higher than those in group A (P<0.001) (**Table 2**).

Psychological status of the patients in group A and group B before and after nursing

SAS changes of patients before and after nursing in group A and group B: The SAS before and after nursing intervention in group A were (54.48 ± 7.01) and (40.13 ± 7.94), respectively. The SAS before and after nursing intervention in group B were (55.38 ± 7.06) and (30.27 ± 6.18), respectively. The SAS scores were lower than those before nursing, (P<0.001). The SAS scores in group B were lower than they were in group A (P<0.001) (**Figure 1**).

The SDS changes of the patients before and after nursing in group A and group B: The SDS in group A before and after nursing intervention were (60.38 ± 4.23) and (51.82 ± 4.51), respectively. The SDS in group B before and after nursing intervention were (59.66 ± 5.93) and (32.54 ± 5.03), respectively. The SAS scores after nursing were lower than those before nursing (P<0.001). The SDS scores after nursing in group B were lower than they were in group A (P<0.001) (**Figure 2**).

Table 2. Comparisons of hospitalization time, expenses, and related knowledge in group A and group B

Group	Group A (n=70)	Group B (n=70)	t	P
Hospital stay (days)	9.13 ± 1.25	5.15 ± 1.90	14.640	<0.001
Hospitalization cost (yuan)	4826.29 ± 400.25	2832.66 ± 315.83	32.720	<0.001
Health knowledge score	30.69 ± 2.84	23.04 ± 2.53	16.830	<0.001

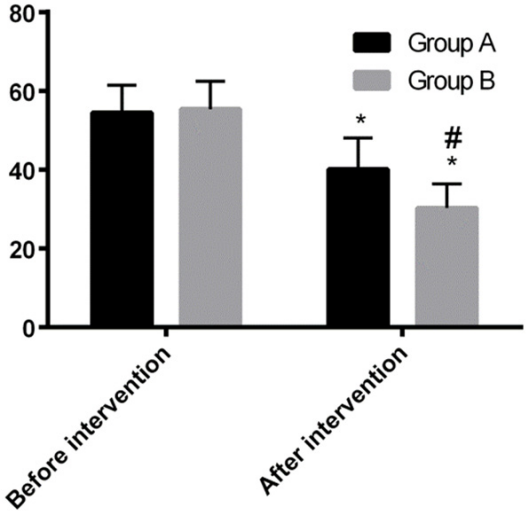

Figure 1. SAS changes before and after nursing in group A and group B. *Indicated that the SAS levels after nursing of the two groups were lower than those before nursing, and the difference was statistically significant (*P*<0.001); #Indicated that the SAS level after nursing in group B was lower than it was in group A, and the differences was statistically significant (P<0.001).

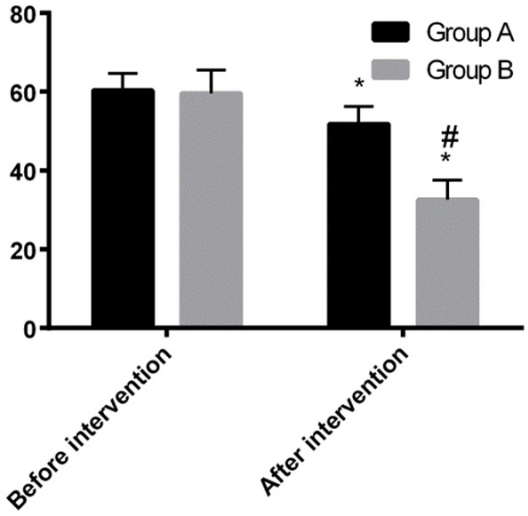

Figure 2. SDS changes before and after nursing in group A and group B. *Indicated that the SDS levels after nursing of the two groups were lower than those before nursing, and the differences were statistically significant (*P*<0.001); #Indicated that the SDS level after nursing in group B was lower than that in group A, and the differences were statistically significant (*P*<0.001).

Recurrence status of complications in group A and group B

The total recurrence rate of the adverse complications such as irregular bleeding, infection, hepatic encephalopathy and hepatorenal syndrome in group B was lower than that in group A, and the difference was statistically significant (P<0.001) (**Table 3**).

Comparison of quality of life between group A and group B

Group B showed significantly higher quality of life scores than group A (P<0.001) (**Table 4**).

Nursing satisfaction in group A and group B

The total satisfaction in group B was higher than it was in group A, and the difference was statistically significant (P<0.05) (**Table 5**).

Discussions

In this study, patients with cirrhosis and gastrointestinal hemorrhage treated in our hospital were randomly divided into two groups. The patients undergoing the routine nursing method were included in group A. The patients undergoing clinical pathway nursing and psychological interventions were included in group B. The general clinical data of all the patients were compared. There was no statistically significant difference in the baseline data such as age, gender, and weight between the two groups. The randomized groups were comparable. First, before and after nursing, the hospitalization time, hospitalization cost, and the acquisition of related knowledge of the patients with cirrhosis and gastrointestinal hemorrhage between group A and group B were compared. It was found that the hospitalization time and

Table 3. Comparisons of adverse complications between patients in group A and group B

Group	Group A (n=70)	Group B (n=70)	X^2	P
Irregular bleeding of the digestive tract	8 (11.43)	2 (2.86)	-	-
Infection	4 (5.71)	2 (2.86)	-	-
Hepatic encephalopathy	2 (2.86)	1 (1.43)	-	-
Hepatorenal syndrome	2 (2.86)	1 (1.43)	-	-
Total incidence	16 (22.86)	6 (8.57)	5.393	0.020

Table 4. Comparisons of the quality of life between the patients in group A and group B

Group	Group A (n=70)	Group B (n=70)	t	P
Physical health	72.72 ± 8.13	81.64 ± 6.06	7.772	<0.001
Mental health	69.22 ± 8.10	80.51 ± 7.09	8.775	<0.001
Material life	68.90 ± 7.34	80.91 ± 7.22	9.760	<0.001
Social function	71.43 ± 8.54	80.54 ± 8.83	6.205	<0.001

Table 5. Care satisfaction of the patients in group A and group B

Group	Group A (n=70)	Group B (n=70)	X^2	P
Very satisfied	25 (35.71)	40 (57.14)	-	-
Satisfied	20 (28.57)	10 (14.29)	-	-
General	7 (10.00)	13 (18.57)	-	-
Not satisfied	18 (25.71)	7 (10.00)	-	-
Total satisfaction	52 (74.29)	63 (90.00)	5.892	0.015

hospitalization cost of the patients with cirrhosis and gastrointestinal bleeding in group B were lower than those in group A. The health knowledge scores of the patients with cirrhosis and gastrointestinal hemorrhage in group B were higher than they were in group A. The difference was statistically significant. The cost of surgical treatment for patients is too high. What's more, the burden on patients is too heavy, and this has always been an important health and economic problem to be solved. Related research also mentioned that reasonable postoperative care cannot only shorten the hospitalization time, but it can also reduce hospitalization costs [15, 16]. Therefore, it is believed that high-quality nursing intervention can shorten the hospitalization times and reduce the hospitalization costs of patients with cirrhosis and gastrointestinal hemorrhage. It also alleviates the economic burden of patients to a certain extent; if patients have a better understanding of health knowledge, their treatment confidence and compliance will also increase. Subsequently, before and after nursing, the mental health status and complication recurrence between group A and group B were compared. Group B exhibited lower SAS scores after nursing than group A. The SDS levels of the two groups after nursing were lower than those before nursing. Group B showed significantly lower SDS scores after nursing than group A. Adverse emotions such as anxiety and depression may induce a poor prognosis in patients [17, 18]. In recent years, with the continuous quality improvement of nursing, a large number of clinical studies have shown that appropriate psychological intervention can effectively improve treatment compliance and recovery.

By analyzing the recurrence of complications in the two groups of patients, it was found that the total recurrence rate of adverse complications such as irregular bleeding, infection, hepatic encephalopathy, and hepatorenal syndrome in group B was lower than that in group A. The difference was statistically significant. Adverse complications such as irregular bleeding, infection, hepatic encephalopathy, and hepatorenal syndrome are the risk factors of recurrence or worsening for patients with cirrhosis [7, 19]. Therefore, it is considered that the clinical pathway care combined with psychological intervention can better improve the treatment of patients with cirrhosis and gastrointestinal hemorrhage. It effectively reduces the recurrence of adverse complications such as irregular bleeding, infection, hepatic encephalopathy, and hepatorenal syndrome. The GQL-74 scale was used to compare the patients' quality of life. The scores of physical health, mental health, material life and social function in group B were higher than those in group A, and the difference was statistically significant.

A good psychological state also promotes the patient's physical health and affects the patient's prognosis [20]. Relevant reports show that the relevant medical staff involved in clinical pathway care and psychological intervention are patient-centered. Measures based on clinical reality can maximize the clinical efficacy of the patient; psychological intervention not only improves the patient's bad emotional or psychological state, but also has a positive effect on the patients' quality of life [21, 22]. Therefore, it is thought that clinical pathway care combined with psychological intervention are better at improving the quality of life in patients with cirrhosis and gastrointestinal hemorrhage. Finally, the nursing satisfaction of the two groups of patients was compared. Among the patients with cirrhosis and gastrointestinal hemorrhage, the total satisfaction of clinical pathway nursing and psychological intervention was higher. Therefore, in patients with cirrhosis and gastrointestinal hemorrhage, it is considered that the acceptance and recognition degree of clinical pathway care and psychological intervention is higher than that of conventional nursing intervention. In recent years, relevant clinical studies have also confirmed that postoperative patients are more satisfied with clinical pathway nursing and psychological intervention than with routine nursing intervention [23, 24].

The shortcomings of our study are that some other biochemical indicators of patients were not determined; as the nursing plan was also affected by the local medical level, it may be different from other areas. Also, the follow-up time was too short; for these defects, in order to improve the research, the latest relevant research results will be continuously focused on, and a regularly review the prognosis will also be performed.

In summary, clinical pathway nursing and psychological intervention can effectively improve the quality of life of patients with cirrhosis and combined upper gastrointestinal hemorrhage, alleviate anxiety and depression, enhance patient satisfaction, and reduce patient treatment cost and hospitalization time.

Acknowledgements

This work was supported by the scientific research project of the Wuxi Hospital Management Center (Grant No. YGZXM14010).

Disclosure of conflict of interest

None.

Address correspondence to: Qiulan Sun, Department of Nursing, The Fifth People's Hospital of Jiangsu Wuxi, No. 1215, Guang Rui Road, Wuxi 214000, Jiangsu, China. Tel: +86-13961862697; E-mail: qiulansun@163.com

References

[1] Baron PW, Amankonah T, Cubas RF, Kore AH, Elihu A, de Vera ME and Perez MC. Diffuse hepatic epithelioid hemangioendothelioma developed in a patient with hepatitis C cirrhosis. Case Rep Transplant 2014; 2014: 694903.

[2] Stokkeland K, Lageborn CT, Ekbom A, Höijer J, Bottai M, Stål P and Söderberg-Löfdal K. Statins and ACE inhibitors are associated with reduced mortality and morbidity in chronic liver disease. Basic Clin Pharmacol Toxicol 2018; 122: 104-110.

[3] Vanhuyse F, Maureira P, Portocarrero E, Laurent N, Lekehal M, Carteaux JP and Villemot JP. Cardiac surgery in cirrhotic patients: results and evaluation of risk factors. Eur J Cardiothorac Surg 2012; 42: 293-299.

[4] González-González JA, García-Compean D, Vázquez-Elizondo G, Garza-Galindo A, Jáquez-Quintana JO and Maldonado-Garza H. Nonvariceal upper gastrointestinal bleeding in patients with liver cirrhosis. Clinical features, outcomes and predictors of in-hospital mortality. A prospective study. Ann Hepatol 2011; 10: 287-95.

[5] Askgaard G, Tolstrup JS, Kjær MS and Leon DA. Number of hospital contacts with alcohol problems predicts later risk of alcoholic liver cirrhosis. Scand J Public Health 2019; 47: 417-419.

[6] de Almeida Ferreira Braga DP and Borges E. Chapter 32 - Environmental factors, food intake, and social habits in male patients and its relationship to intracytoplasmic sperm injection outcomes. Handbook of Fertility 2015; 97: 355-367.

[7] Biecker E. Gastrointestinal bleeding in cirrhotic patients with portal hypertension. ISRN Hepatol 2013; 2013: 541836.

[8] Rothrock JF. Your visit to the doctor: achieving a satisfactory result. Headache 2009; 49: 495-496.

[9] Friganovic A. Nursing and implementation of modern technology. Signa Vitae 2016; 12: 23-27.

[10] Lu J, Grypma S, Cao Y, Bu L, Shen L amd Davidson PM. Historically-informed nursing: a transnational case study in China. Nurs Inq 2018; 25.

[11] Li C, Qi Z, Ng L, Needleman I, Lin J and Walsh T. Oral care measures for preventing nursing home-acquired pneumonia. Cochrane Database Syst Rev 2018; 9: CD012416.
[12] Thomas SL. The cost-effectiveness of primary care for Indigenous Australians with diabetes living in remote Northern Territory communities. Med J Aust 2014; 201: 450.
[13] Ge PS and Runyon BA. Treatment of patients with cirrhosis. N Engl J Med 2016; 375: 2104-2105.
[14] Duan S, Xiao J, Zhao S and Zhu X. Effect of antidepressant and psychological intervention on the quality of life and blood pressure in hypertensive patients with depression. Zhong Nan Da Xue Xue Bao Yi Xue Ban 2009; 34: 313-317.
[15] Sessler DI. Perioperative thermoregulation and heat balance. Lancet 2016; 387: 2655-2664.
[16] Smith KE, Mason TB, Crosby RD, Cao L, Leonard RC, Wetterneck CT, Ber S, Farrell NR, Riemann BC and Wonderlich SA. A comparative network analysis of eating disorder psychopathology and co-occurring depression and anxiety symptoms before and after treatment. Psychol Med 2019; 49: 314-324.
[17] Denollet J, Tekle FB, van der Voort PH, Alings M and van den Broek KC. Age-related differences in the effect of psychological distress on mortality: type D personality in younger versus older patients with cardiac arrhythmias. Biomed Res Int 2013; 2013: 246035.
[18] Baker C, Worrall L, Rose M, Hudson K, Ryan B and O'Byrne L. A systematic review of rehabilitation interventions to prevent and treat depression in post-stroke aphasia. Disabil Rehabil 2018; 40: 1870-1892.
[19] Yang Y, Hu X, Zhang Q, Cao H, Li J, Wang J, Shao Y and Xin S. Effect of clinical nursing pathway for endoscopic thyroidectomy in Chinese patients: a meta-analysis. Int J Nurs Pract 2016; 22: 224-31.
[20] Kozlowska K. The developmental origins of conversion disorders. Clin Child Psychol Psychiatry 2007; 12: 487-510.
[21] Diamond LM and Aspinwall LG. Emotion regulation across the life span: an integrative perspective emphasizing self-regulation, positive affect, and dyadic processes. Motiv Emot 2003; 27: 125-156.
[22] Yazdani N, Hosseini SV, Amini M, Sobhani Z, Sharif F and Khazraei H. Relationship between body image and psychological well-being in patients with morbid obesity. Int J Community Based Nurs Midwifery 2018; 6: 175-184.
[23] Price J, Butler R, Hatcher S and Von Korff M. Depression in adults: psychological treatments and care pathways. BMJ Clin Evid 2007; 2007.
[24] Xin L, Xu H, Ling L, Huang LL and Liu ZJ. Influence of continuous nursing on the psychological state and coping style of patients undergoing pacemaker implantation. Iran J Public Health 2015; 44: 953-61.