Original Article
Clinical effect analysis of nursing measures targeting relapse inducement in patients with ulcerative colitis

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Abstract: Objective: The aim of this study was to investigate risk factors for relapse of ulcerative colitis (UC), provide specific nursing measures based on these factors, and evaluate the results of nursing. Methods: A total of 76 patients with recurrent UC, admitted to Yantai Hospital of Traditional Chinese Medicine from August 2012 to August 2013, and 80 patients without relapse were selected and divided into a relapse group and non-relapse group. This study aimed to, retrospectively, analyze inducement of relapse in patients with UC. Also, 82 patients with UC, treated in Yantai Hospital of Traditional Chinese Medicine from October 2013 to October 2014, were enrolled and randomly divided into observation group and control group (41 cases in each group). Patients in the control group received routine nursing care. For patients in the observation group, specific nursing measures were formulated by summarizing relapse inducement. Relapse conditions and nursing satisfaction of the two groups were compared. Results: Diet, psychological factors, overstrains, and irrational use of drugs led to patient relapse. After adopting specific nursing measures, the relapse rate of observation group was significantly lower than the control group. Differences between the two groups were statistically significant (P<0.05) and nursing satisfaction of observation group was higher than that of the control group. Conclusion: This present study found that certain factors could lead to relapse of UC. Therefore, specific measures adopted in the nursing process are able to reduce relapse rate, to a certain extent, and improve the satisfaction of nursing, making them worthy of clinical promotion.

Keywords: Ulcerative colitis, relapse inducement, specific nursing measures, nursing satisfaction

Introduction

Ulcerative colitis (UC) is a common inflammatory intestinal disease. Currently, the etiology is unknown. It may be associated with change of intestinal microflora, increase of intestinal permeability caused by mucosal inflammation, and dysfunction of the immune system [1]. Main lesions are in the rectum and colon with local ulcers, resulting in repeated pus and blood, diarrhea, abdominal pain, fatigue, and other clinical symptoms. In addition, some patients may also have a combination of varying degrees of parenteral manifestations such as liver and gallbladder disease and arthritis. Eyes and skin can also be affected [2, 3]. Currently, immunotherapy with salicylic acid and corticosteroid is used to control patient

conditions. However, UC will often relapse. It has been reported that the recurrence rate, within 2 years, ranges from 26-41%. There are many factors that induce relapse [4].

At present, nursing care for prevention of relapse in UC is mainly focused on the guidance of patients during hospitalization. However, blindness, weak pertinence, and lack of analysis of relapse factors often leads to the inability to endure effective nursing measures that can reduce the relapse rate of UC.

Therefore, this research explored relapse factors of UC and adopted specific nursing measures to observe and analyze recurrence in patients, providing a reference for clinical practice.

Table 1. Comparison of general data of patients enrolled in nursing study

Items	Gender (male/female)	Age (years)	Course (years)
Observation group (n=41)	25/16	36.7±7.2	3.92±0.91
Control group (n=41)	27/14	39.1±8.4	4.38±0.98
t/χ²	1.460	1.362	1.566
P	0.227	0.262	0.212

Materials and methods

Research objects

A total of 76 patients with relapse of UC, treated in Yantai Hospital of Traditional Chinese Medicine from August 2012 to August 2013, and 80 patients without relapse, in the same period, were selected. Data of the patients were, retrospectively, analyzed. Additionally, 82 patients with UC, diagnosed from October 2013 to October 2014, were selected.

Inclusion criteria: 1) Patients complied with clinical diagnosis criteria of UC; 2) Patients signed informed consent; 3) Relapse ≥1 time; and 4) Patients with normal communication abilities [5].

Exclusion criteria: 1) Patients with infectious enteritis; 2) Patients with irritable bowel syndrome; 3) Patients with Crohn's disease; and 4) UC combined with other organ dysfunctions.

Patients were randomly divided into two groups, according to sequence of hospital admission. General information is detailed in **Table 1**. This research was approved by the Ethics Committee of Yantai Hospital of Traditional Chinese Medicine.

Diagnostic criteria

Criteria established by the Group of Inflammatory Bowel Diseases and Chinese Medical Association in 2012 were adopted, detailed below [5].

Clinical manifestations: The disease lasted for 4-6 weeks with continued clinical symptoms, accompanied by parenteral manifestations (hepatobiliary, skin, joints, and other parts).

Colonoscopy: Continuous diffuse ulceration or erosion. Veins of the intestinal mucosa were blurred, disordered, or disappeared. In addition, congetion, bleeding by touch, or spontaneous bleeding could be seen.

Pathological examination: Mucosa with chronic inflammatory cells infiltration.

A total of 41 cases in the observation group received specific nursing measures while 41 cases in the control group adopted conventional nursing measures.
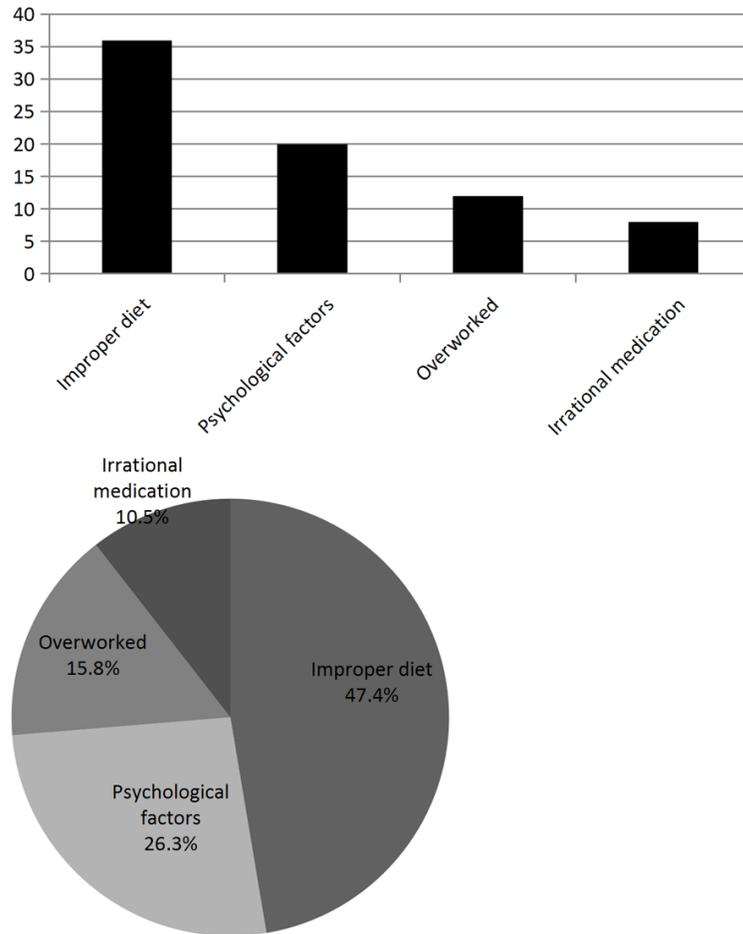
Methods

A retrospective analysis of 76 cases of relapse patients and 80 patients without relapse was conducted. The aim was to explore inducement of relapse in patients with UC. A total of 82 cases of UC patients were randomly divided into an observation group and control group, according to patient hospitalization sequence, with 41 cases in each group. Observation group received specific nursing measures, according to the inducement of relapse. Control group received conventional nursing measures, in the Department of Gastroenterology, including disease awareness, observation of conditions, and psychological care, etc. [6].

A retrospective study method was used to record inducement of UC. An improper diet was noted if it involved wine, strong tea, coffee and other beverages, irritant food, and seafood, etc. Hamilton Depression scale (HAMD) and Hamilton Anxiety Scale (HAMA) were adopted to evaluate depression and anxiety of patients. Results showed that improper diet was the main inducement of relapse. Other factors were psychological factors, excessive exertion, and improper use of drugs (excessive reduction or withdrawal of hormone drugs). See **Figure 1**.

Specific nursing measures

Diet care: Improper diet is the major cause of relapse. An improper diet increases gastrointestinal burden and hinders its function. A personalized diet is recommended including these criteria: 1) Eat easily digestible, high energy, high protein, and high fiber foods with frequent small meals. The food should be as light as possible with no seafood, cold, hot, or sour food; 2) Ensure food hygiene and safety, preventing intestinal infections.

Figure 1. Composition ratio of relapse factors in patients with ulcerative colitis.

counseling for depressed patients by giving examples of patients whose condition is under control, showing the treatment effect of such patients, and sharing treatment experiences. This step is to increase patient confidence in the cure of the disease. For severe conditions, psychiatric consultations could be invited by the tube bed doctor to provide collaborative treatment. Through the above methods, patient tension, anxiety, irritability, and other negative emotions can be alleviated; 2) It is important to encourage patients in life and to increase patient confidence in overcoming the disease by introducing them similar patients undergoing rehabilitation.

Reasonable amount of exercise: Literature has confirmed that regular aerobic exercise contributes to rehabilitation. The perceived exertion scale was used to assess degree of fatigue. They were advised to adjust their exercise based on the scale. The course of rehabilitation of patients with UC is closely related to sleep. Adequate sleep ensures physical and gastrointestinal peristalsis of patients [8]. For patients with poor sleep, in addition to providing a comfortable and quiet sleeping environment, auxiliary sleeping drugs can be provided. At the same time, it is suggested that patients employ proper physical exercise on the basis of maintaining a regular life.

Rational guidance of drug usage: Irrational use of drugs includes stopping medicine without permission, reducing dosage, and not taking medicine regularly. Rational use of drugs is a prerequisite for treatment of disease. For rational use of drugs, the following medication guidelines were followed: 1) Emphasized to patients the importance of following doctor's advice, specifically the importance of implementation of medical advice regarding the patient's condition; 2) Patients should follow

Psychological care: First, patient psychological status was investigated. HAMD scores were used to assess levels of depression (>8 points considered depression); and HAMA scores were used to assess patient anxiety (>7 points considered anxiety). Patients meeting one of the above two scores needed psychological care [7]. The same two rating scales were also used to evaluate the psychological improvement of patients.

Psychological factors induce relapse of UC. They stimulate gastrointestinal motility changes. Visceral sensitivity could increase gastrointestinal symptoms. Therefore, nursing intervention is very important in reducing relapse of UC.

The specific measures were as follows: 1) Communication with patients, helping them to understand the changes of their psychological status. It is important to provide psychological

Table 2. Comparison of inducement of ulcerative colitis (case)

Factor	Relapse group (n=76)	Non-relapse group (n=80)	χ^2	P
Improper diet	36	15	7.530	0.001
Psychological factors	20	8	5.981	0.014
Overworked	12	3	5.189	0.023
Irrational medication	8	1	4.581	0.032

Table 3. Comparison of rate of relapse in two groups (n%)

Group	Case	Relapse	No relapse
Observation group	41	7 (17.1)	34 (82.9)
Control group	41	15 (36.6)	26 (63.4)
χ^2		3.976	
P		0.046	

Table 4. Single factor analysis results of relapse factors

Items	Case	Relapse (n)	χ^2	P
Gender			0.052	0.819
Male	25	4		
Female	16	3		
Age (years)			6.204	0.045
≤30	12	1		
30-50	10	5		
≥50	19	1		
Course (years)			4.120	0.042
≤5	23	1		
>5	18	6		
Diabetes mellitus			2.141	0.143
Yes	5	3		
No	36	4		
Hypertension			1.573	0.186
Yes	12	4		
No	29	33		

the doctor's advice when adjusting dosage of drugs. It was strictly forbidden to add or reduce drug dosage without permission; and 3) Advised patients to take medication regularly to maintain treatment effect, guided patients to review regularly once a month.

Observation index

Patient relapse conditions, within two years, were followed up. The diagnostic basis for relapse included reappearance of diarrhea, abdominal pain, and systemic symptoms during the remission period [5]. Additionally, colonoscopies revealed intestinal mucosal congestion, ulcers, erosion, and so forth.

Satisfaction of nursing was based on a questionnaire commonly used in China. The contents mainly included satisfaction with nursing staff attitude, nursing comprehensiveness, and nursing operation skills, etc.; 1-4 points for each item with a total 25 items; each item with full credit of 100 points, total 300 points. Higher scores indicated higher nursing satisfaction [9].

Statistical methods

SPSS 17.0 software was used to analyze data. Normal measurement data of the two groups of patients are expressed as mean ± sd. The two groups of independent, normal, and variance data were compared by paired t-test. The independent, normal, variance data of three groups were compared using analysis of variance test. Count data are expressed by rate. Comparison between groups was performed using Chi-square test. P<0.05 was considered to be a statistically significant difference.

Results

General data

Comparing general data of the observation group and control group, there was no statistically significant differences in gender, age, and course of disease between observation group and control group (all P>0.05) See **Table 1**.

Analysis of relapse inducement

Results of comparison between the relapse group and non-relapse group revealed that improper diet, psychology, diet, overexertion, and irrational use of drugs were the main relapse factors for UC. See **Table 2**. Results of retrospective analysis showed that improper diet was the main inducing factor for UC (36/76, 47.4%). Other factors were psychological factors (20/76, 26.3%), overwork (12/76, 15.8%), and irrational use of medication (8/76, 10.5%). See **Figure 1**.

Table 5. Comparison of nursing satisfaction in two groups of patients

Group	Nursing staff attitude	Nursing comprehensiveness	Operant skill
Observation group	96.10±3.24	95.92±4.01	94.76±3.02
Control group	91.91±4.33	90.12±3.12	89.53±2.19
t	4.973	7.310	8.977
P	<0.001	<0.001	<0.001

Comparison of rate of relapse in two groups

Relapse rate of the observation group was lower than control group (17.1% vs. 36.6%). The difference was statistically significant (P<0.05). See **Table 3**.

Single factor analysis results of relapse factors

Further analysis of patients in observation group showed no significant differences in gender (male and female, P>0.05), but age (≤30, 30-50 and ≥50 years old), and course of disease (≤5 and >5 years) were statistically significant (both P<0.05). See **Table 4**.

Comparison of results of nursing satisfaction in two groups of patients

These results showed that satisfaction components of the observation group were all higher than those of control group. The differences were statistically significant (all P<0.05), as shown in **Table 5**.

Discussion

A repeated cycle of relief and relapse is characteristic of UC, mainly related to the immune system, intestinal flora, and genetic factors [10, 11]. Repeated illness affects the life of patients and increases the social burden. According to research in the United States, the annual cost of treating UC is up to $7,948 per patient [12]. In China, incidence of UC is increasing year by year. Combined with use of electronic colonoscopy, detection rates have been improving [13]. Treatment of UC has become more mature. However, the special nature of this disease, coupled with patient compliance, has led to a high relapse rate [14].

Due to the particularity of UC (which cannot be completely cured and is easily repeated), both the characteristics of the disease and adverse factors affecting the stability of the disease contribute to relapse.

Characteristics of this disease include age and course of disease, while adverse factors include diet, psychology, and other factors.

This study analyzed the inducement of relapse in patients with UC. Results showed that improper diet ranks first, in line with the research conclusion of Wang et al. [15]. Patients were guided through scientific diets, with personalized programs (patients with high uric acid should avoid high purine food), supporting food rich in butyrate (such as soybean, oat, etc.), effectively protecting the gastrointestinal mucosa and reducing risk of relapse [16]. The course of UC is long and often repeated, bringing many negative emotions and causing psychological problems in patients. This study's data indicated that 20 patients relapsed due to psychological factors, accounting for 26.3% of relapse factors. These results are similar to Zhu's research conclusion [17]. Existence of negative emotions such as anxiety, stress, and depression delays the recovery process and increases risk of recurrence. A possible reason is that negative emotions reduce patient compliance with treatment [17, 18]. A series of measures have been adopted to enable patients to develop healthy and positive emotions, complemented by social support, so that patients can receive treatment in a healthy state of mind.

Medication is the main treatment for UC. Regular medication compliance is an important prerequisite for sustained clinical effect. Poor compliance could increase the relapse of UC by 1.4-5.5 times [19]. This research improved compliance of the patients and reduced risk of relapse by requiring patients to take medication under the guidance of a doctor.

In this study, about 15% of patients relapsed due to overexertion. Therefore, appropriate exercise is recommended to increase body resistance, helping to reduce the inflammatory response. Additionally, regular rest and work strikes a proper balance between works and relaxation, helping to prevent relapse of the disease. Domestic research by Xing et al. drew the same conclusion [20, 21].

This present study focused on relapse factors and showed that gender, hypertension, and diabetes mellitus did not affect relapse of patients. Course of disease and ages ranging from 30-50 years old, however, were the main factors of relapse. Nursing work towards these kinds of patient should strengthen the clinical work and reduce inducement of relapse in patients, thereby reducing the relapse rate of patients with UC.

In summary, this study analyzed inducement of relapse in patients with UC and the influencing factors of relapse. This study concludes that improving the effective pertinence of clinical nursing work can reduce the relapse rates patients, to a certain extent. At the same time, it also improves nursing satisfaction and promotes the harmonious relationship between doctors and patients. However, the number of individual subjects enrolled in this research was relatively small, involving a single center. Multi-center cooperation will be necessary in future research.

Disclosure of conflict of interest

None.

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