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Original Article

Application of individualized nursing intervention in patients with chronic hepatitis B

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Abstract: Objective: To analyze the application of individualized nursing intervention in patients with chronic hepatitis B (CHB), in order to achieve sustained virological responses with the common efforts of nurses and patients. Methods: 180 patients with CHB, who came to our hospital from January 2013 to January 2016, were randomly divided into experimental group (90 cases) and control group (90 cases) according to random number table method. The patients in control group were treated with routine nursing intervention; and patients in experimental group were treated with comprehensive intervention by specially established nursing group on the treatment basis of control group, such as health education, psychological counseling and treatment guidance, etc. Results: In the aspect of treatment compliance, the compliance rate in experimental group (95.6%) was significantly higher than that of control group (77.8%), the difference was statistically significant ($P<0.05$); the experimental group's each index score of living quality was significantly higher than that of the control group ($P<0.05$); each index score and total scores of nursing satisfaction of individualized nursing intervention were also significantly higher than routine nursing intervention ($P<0.05$). Before nursing, there was no significantly difference of liver function index of alanine aminotransferase (ALT) and aspartate aminotransferase (AST) between two groups ($P>0.05$). After nursing, these two indexes of two groups were significantly lower than before. There was more significant descending in the experimental group than the control group ($P<0.05$). Conclusion: Individualized nursing intervention can improve CHB patients' living quality and the satisfaction degree to the nursing work. Besides, it promoted the treatment compliance and enhanced the confidence of antiviral therapy. Therefore, individualized nursing intervention played an important role in nursing CHB patients, and worthy of clinical popularization and application.

Keywords: Individualized nursing intervention, chronic hepatitis B, treatment compliance, living quality, nursing satisfaction, liver function

Introduction

Chronic hepatitis B (CHB) is the chronic disease process after the body infected by hepatitis B Virus (HBV). WHO published that there were about 2 billion people were infected with HBV and 350 million people with CHB around the world [1-3]. Chronic HBV infection could result in severe liver disease, which was extremely easy to develop into cirrhosis. The final consequence of hepatocellular carcinoma set a serious threat to the patient's health and life safety [4]. At present, due to the lack of effective drugs for the treatment of HBV, the long treatment course of antiviral therapy and the high cost, the standardized, effective treatment and management measures for CHB patients and HBV carriers were penurious [5, 6]. Besides, there were some limitations in the understanding of the modern society for CHB patients. The certain discrimination and resistance for the patients with CHB resulted in certain mental disorder for patients. The heavy social pressure affected the patient's compliance, physical and mental health, even directly affected the patients' quality of life in all aspects [1, 2, 7].

Most of the current researches have focused on the clinical treatment of CHB, the research in the factors of the patient's mental health, the medical cooperation conditions and the attitude to the diseases were much less. However, all these factors directly affected the prognosis of patients [8]. Therefore, our hospital specially formulated a set of individualized nursing plan for CHB patients, which mainly aimed at inter-

Table 1. Comparison of basic date between two groups of patients

Group	Cases	Gender		Age (years old)	Course (years)	Marital status (cases)		Educational time (year)	Child-Pugh score (points)
		Men	Women			In marriage	Not in marriage		
Control group	90	53	37	43.00±7.30	4.00±0.19	80	10	13.50±2.72	7.33±0.36
Experimental group	90	55	35	42.60±8.10	4.04±0.25	78	12	13.64±2.47	7.50±0.43
Statistics		χ^2=0.09		t=0.22	t=1.23	χ^2=0.21		t=0.57	t=1.05
P		>0.05		>0.05	>0.05	>0.05		>0.05	>0.05

vening and guiding patient's physiology and psychology, as to reduce the burden of patients and promote the rehabilitation of patients. Clinical practice indicated that individualized nursing intervention significantly improved liver function in the process of antiviral treatment of CHB patients. It was beneficial for patients' treatment and achieved satisfactory results. Specific reports are as follows.

Materials and methods

Subjects

We selected 180 CHB patients who came to infectious disease department in our hospital from January 2013 to January 2016, patients and their families were agreed and signed informed consent.

Inclusion criteria: the diagnosis of chronic hepatitis B was in line with the diagnostic criteria established by Academic Branch of Communicable Diseases and Parasitic Disease of Chinese Medical Association in 2000, and the duration was more than 2 years [3, 9]; no hepatic cirrhosis or hepatocellular carcinoma; patients with primary school and above culture; aged 18-75 years old; Child-Pugh scores <10, voluntary consent to participate in this study. Exclusion criteria: patients with mental illness and cognitive dysfunction; the disease was in decompensated liver cirrhosis or hepatocellular carcinoma; patients were in the gestational period and follow-up information was incomplete. There was no significant difference between the two groups. They were randomly divided into control group and experimental group according to the digital random method, each group of 90 cases. The data of the two groups were compared, such as gender ratio, age, duration, marital status, education years and Child-Pugh scores. The difference was not statistically significant (P>0.05), see **Table 1** for details.

Interventions

Two groups of patients were given entecavir (0.5 mg/time/day) + adefovir dipivoxil (10 mg/time/day) conventional drug therapy. In the treatment period, the control group was taken routine care, that is, the health education in conventional way by hospital departments. The patients in the experimental group were treated individually by a specially established nursing group according to the nursing standard developed by our hospital for CHB patients. First of all, we actively promoted and disseminated knowledge of health education to patients, so that they could have a correct understanding of CHB. Secondly, patients with mental disorders were helped by a dedicated psychologist for one-on-one psychological counseling to ensure they had positive mental state. The main methods were as follows.

Health education

Clinical nurses should actively promote health knowledge, so that patients could have a certain degree of understanding with CHB disease etiology, development process, the main clinical manifestations, treatment and prevention, and to ensure that patients can be positive and optimistic about the participation of disease treatment. Their diet should be light, low fat, low salt and high protein, eat fresh fruits and vegetables, and should quit smoking and drinking [10, 11]. According to the daily living habits of patients, clinical nurses should guide the patient's diet correctly. Encourage patients to do moderate exercises and rest on time on the basis of a healthy diet, due to timely intervention, the daily living habits of patients have been effectively changed, which would significantly reduce the liver's physiological burden on the recovery of damaged liver and play a good role in promoting. At the same time, taking good disinfection and quarantine measures to protect themselves and others.

Table 2. Comparison of treatment compliance between two groups (n (%))

Category	Control group	Experimental group	χ^2	*P*
The number of patients	90	90		
Fully compliance	27 (30%)	36 (40%)		
Part compliance	43 (47.8%)	50 (55.6%)		
Completely non-compliance	20 (22.2%)	4 (4.4%)		
Compliance rate	77.8%	95.6%*	12.31	<0.05

Note: *Compared with the control group (P<0.05).

Psychological counseling

Patients with mental disorders should be treated actively, and avoid the occurrence and further exacerbation of depression, anxiety or other negative emotions. The psychologist, when carrying out the psychological counseling for patients, would correctly analyze the patients' psychological states, guide the negative emotions on the basis of their existing problems, explain the related knowledge for them, make an active instruction and then let them know that such disease would not be transmitted in daily life as long as there was no contact with the exposed blood. Improving patients' awareness of the disease can obviously alleviate their negative emotions and lead them to comply with the treatment actively [10]. Besides, the psychologist would tell the patients the harm of informal clinical treatment and correctly guide them to conduct the reasonable protection.

Treatment guidance

First of all, the clinical nursing staffs encouraged the patients to develop concepts and confidence of antiviral therapy and guided them to use the drug scientifically and reasonably according to the clinicians' suggestions, because increasing burden to the liver may exist in patients who have used certain drugs for a long time [12]. Moreover, the clinical nursing staffs needed to guide the patients to complete the medicine records depending on their case conditions, informed them that the casual drug withdrawal and drug dosage change were not allowed, explained patiently to the patients that the antiviral therapy required a comparatively long time and relatively high cost, and also instructed them to choose the antiviral drugs correctly and reasonably based on their case conditions and financial situations. As for the discharged patients, getting to know their case conditions and drug usage situations through regular follow-ups, and reminding them to take regular check-ups were necessary. Patients could consult for the conditions associated with the disease at any time while the nursing staffs were required to provide instructions actively and answer questions seriously.

Clinical evaluation standard

Treatment compliance: One year after the individualized nursing intervention, an analysis and comparison about the patients' treatment compliance were conducted through the questionnaires, covering many aspects such as dieting reasonably, resting regularly, giving up smoking and drinking, maintaining a positive and optimistic mood, using drugs reasonably according to the doctors' suggestions, no stopping drug and drug abuse, no changing to drug dosage and taking regular check-ups. Patients who conformed to 5 items or more were identified as full compliance; patients who performed 2 items or less were identified as completely non-compliance; patients who fell in between were identified as incomplete compliance or partial compliance. The compliance rate = (full compliance + partial compliance)/the number of all patients in the group *100%.

Quality of life

As the evaluation criteria of patients' life quality, the life quality scale for patients with chronic hepatitis B (QOL-CHB) covered four aspects: physiological statues, material life, psychological function and social function. The higher the score is, the higher the life quality is [13].

Nursing satisfaction

The patients to be discharged from hospital soon were investigated about their nursing satisfaction. The questionnaires were made by our hospital for the CHB patients only, covering four items: communications between patients and nursing staffs, service attitudes, ability to deal with problems and health education. Each item had 25 points and five detailed questions. In terms of every detailed question, we listed five answers: very satisfied (5 points), satisfied (4 points), fair (3 points), unsatisfied (2 points) and particularly bad (1 point). Patients were required to score their nursing satisfaction in

accordance with their actual situations without noting names.

Assessment of liver function

All the patients were required to take liver function test by the clinical laboratory in our hospital before and after nursing. The main test index included alanine aminotransferase (ALT), aspartate aminotransferase (AST) and so on. This project was assisted by the clinical laboratory in our hospital.

Statistical analysis

Using SPSS16.0 statistic software for statistical analysis. The measurement date were expressed as mean ± standard deviation (x±s), and it were tested by t. Count data were expressed in percentage (%), and it were tested by χ^2. P<0.05 was considered as significant statistical difference.

Results

Comparison of treatment compliance between two groups of patients

As for treatment compliance of patients, the control group was 77.8% while the experimental group was 95.6%. Apparently, the treatment compliance of patients in the experimental group was significantly better than that in the control group and the differences were statistically significant (P<0.05). See **Table 2**.

Comparison of evaluation results in two groups

Through evaluating QOL-CHB scores of two groups, we found that either each index score of life quality or total scores, obviously, the scores of experimental group patients were higher than that of control group (P<0.05). See **Table 3**.

Comparison of nursing satisfaction results between the two groups

The patients had received individualized nursing intervention gave higher scores for the nursing satisfaction compared to those who just had gotten routine nursing intervention. It showed that individualized nursing intervention could improve the nursing satisfaction of patients (P<0.05), which was beneficial to enhance communication between nurses and patients. See **Table 4**.

Comparison of liver functions before and after being nursed in two groups

Before nursing, there was no statistical difference in the liver function index of ALT and AST in two groups (P>0.05). After nursing, the ALT and AST of two groups were significantly decreased compared to before nursing (P<0.05), and the ALT and AST of experimental group decreased more obviously than that of the control group (P<0.05), indicating that individualized nursing intervention was helpful for improving the liver functions (**Figure 1**).

Discussion

CHB is a kind of chronic disease, which is characterized by strong infectivity, high recurrence rate and easy deterioration. With difficult treatment, long time course and high cost, patients with CHB have great economic burden and psychological barriers, and their life qualities were affected [14, 15]. At present there are about 120 million of chronic hepatitis B virus carriers, if they did not receive timely and effective treatment, the risk of developing hepatic cirrhosis and hepatocellular carcinoma may be followed and it will threaten the life safety of patients. It will become one of the major diseases that endangers people's health [2, 13, 16].

Individualized nursing intervention can improve the compliance of patients with CHB

At present, the study of treatment compliance was widely carried out in medical treatment of chronic diseases such as hypertension, elderly chronic bronchitis and diabetes. And the stand or fall of compliance directly affects the therapeutic effects of the diseases [4, 17]. Compliance refers to maintain individual behaviors as well as treatment and health guidance in a consistent level. In this study, through being nursed by individualized nursing intervention, the psychological status of the patients, the cooperation between nurses and patients and the unhealthy lifestyle were improved significantly than the patients in the control group. By actively promoting the health knowledge, patients can have a correct understanding of their diseases and maintained an optimistic attitude. Under the influence of psychological counseling, they adjusted themselves to be in the best state of mind, developed good habits, actively cooperated with the treatment, and

Table 3. Comparison of patients' life quality between two groups (x±s)

Group	The number of patients	Physiology	Material life	Psychological functions	Social functions	Total scores
Control group	90	29.87±2.14	35.31±3.49	45.23±3.30	48.45±4.82	160.4±6.78
Experimental group	90	36.38±1.97*	40.45±3.85*	51.75±2.72*	58.45±3.69*	185.3±6.54*
t		14.17	6.25	9.66	10.42	15.63
P		<0.05	<0.05	<0.05	<0.05	<0.05

Note: *Compared with the control group (P<0.05).

Table 4. Comparison of patients' nursing quality between two groups (x±s)

Group	The number of patients	The communication between nurses and patients	The service attitude	The ability to solve problems	The health guidance	Total scores
Control group	90	17.80±3.89	19.73±5.50	17.58±4.19	16.50±3.33	73.63±4.25
Experimental group	90	24.80±3.92*	24.68±3.34*	24.15±3.16*	24.48±3.32*	97.20±4.08*
t		8.02	4.87	7.93	10.73	21.20
P		<0.05	<0.05	<0.05	<0.05	<0.05

Note: *Compared with the control group (P<0.05).

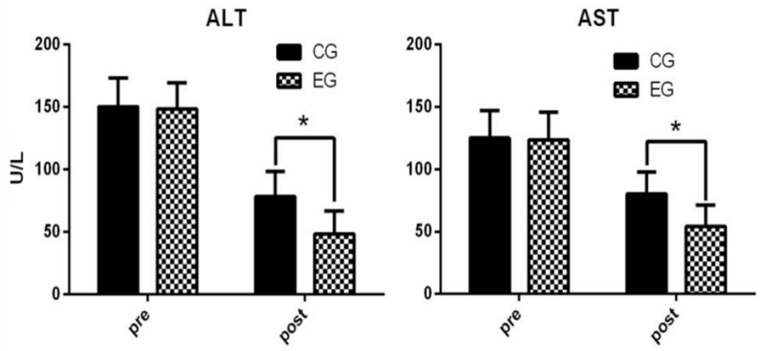

Figure 1. Comparison of liver function index between pre and post-care. Note: CG, control group; EG, experimental group; *Compared with the control group P<0.0.

improved the ability of self-protection. Thus, patients' nursing compliance can be improved.

Individualized nursing intervention is beneficial to improve the quality of life of patients with CHB

Patients with CHB have poor quality of life, and their own physical conditions, the severity of the disease, treatment and disease progression significantly affected their quality of life [18]. The severity level of disease shows a significantly negative correlation with the quality of life. A long-term treatment can also cause certain burden to patients economically and unfavorable progress in treatment to the disease can hurt the confidence of patients further. Finally, it can lead patients to have unhealthy emotions such as depression and anxiety [9, 19]. Normal nursing measurements just give people health education and information consultation, but it makes little difference in the part of improving life quality. However, the specialized nursing group of our hospital adopts comprehensive nursing intervention to improve the patients' conditions completely and ensure the patient's early recovery. First, a positive health promotion can ensure patients learn about the development process and premunition of diseases, increase the patient's confidence of treatment and release the psychological pressure; psychological counseling and treatment intervention can ensure the patients have the positive attitude to face the disease, improve the communicative ability and physiological conditions of the patients and improve their life quality.

Individualized nursing intervention can improve the patient's satisfaction to nursing job

CHB is still a clinical problem at present. It is always delayed healing and easy recurrence. It can lead patients to depression, low self-esteem and other negative mentalities, so that nursing can hardly reach the level of satisfac-

tion [20]. This study also found that the control group of nursing satisfaction was extremely low and it would influence the recovery of patients [21, 22]. However, under the individualized nursing intervention, the communication between nurses and patients increase, and nurses can answer patients' questions positively and give them the appropriate health guidance. The ability of the team to work together to deal with problems also significantly enhances and getting a high satisfaction of patients which also increases patients' treatment compliance. Thus, these actions promote the recovery of patients on the whole.

Individualized nursing intervention promote the improvement liver function

The condition of liver function is a significant index of chronic hepatitis B, so we also focus on the protective effects of liver function in individualized clinical intervention measurement [5]. In the area of health education, we focus on improving the diets of patients, abandoning their bad habits and increase the amount of exercise and other ways to release the pressure of patients' liver. For negative patients, the psychological doctor professionally has one to one psychological counseling to make patients cooperate with clinical treatments actively which is good for the recovery of liver function. For patients of clinical treatment, the nursing team need to explain the methods and dose of medicine with details, timely answer and give treatments for some adverse reactions during treatment, and regularly give patients clinical examination and other treatments to ensure the patients' liver function can recover to normal level as soon as possible [23-25]. In this study, after nursing, both ALT and AST were significantly lower ($P<0.05$) than before, and the decreased range of the experimental group was significantly higher than that of the control group ($P<0.05$). It showed that individualized nursing intervention had a significant promoting effect on the recovery of the liver function.

In conclusion, the implementation of individualized nursing intervention on CHB patients can improve the treatment compliance of patients, improve correct understanding to the disease of patients and their families, and reduce their psychological burden, which make the patients take medicine as doctor's order, improve the treatment effects and liver function. So, it can promote the improvement of the patient's life quality and it deserves the clinical expansion.

Disclosure of conflict of interest

None.

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