Diagnostic Brain Medicine

CLINICAL RESEAPCH

Application of Clinical Nursing Path in the Nursing Management in Intensive Care Unit of Brain Department

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Abstract

Objective This review mainly aimed to analyze the application effects of clinical nursing pathway (CNP) in the the nursing management in intensive care unit (ICU) of brain department. **Methods** A total of 86 brain ICU patients from October 2018 to October 2019 were selected as the research objects. All patients received treatment in our hospital and met the inclusion criteria. They were divided into observation group and control group by random number table method. In the control group, the patients were treated with routine care. In the observation group, patients were treated with CNP on the basis of the control group. Then, the reoperation rate, re-admission rate, complication rate, quality of life (QOL) score and family satisfaction after intervention of two groups were compared. **Results** In the observation group, the reoperation rate, re-admission rate, and complication rate were significantly lower in contrast to the control group ($P < 0.05$). Besides, QOL sore and family satisfaction of the observation group were significantly higher than those of the control group ($P < 0.05$). **Conclusion** The application of CNP has a significant effect in the nursing and management of brain ICU patients.

Introduction

The management of intensive care unit (ICU) of brain department is usually based on comprehensive treatment, and reasonable nursing methods are of great significance to the prognosis of patients among them [1]. The clinical nursing path (CNP) is a standardized treatment system formulated for a specific disease, including admission guidance, life care, psychological care, discharge guidance, etc, which can guide nursing staff to work predictably, avoid waste of medical resources and promote the recovery of patients [1]. In recent years, the application in clinical is increasingly widespread [2]. In this study, CNP was used to intervene in the management of brain ICU patients and achieved good results.

Materials and methods

General information

From October 2018 to October 2019, 86 patients with critical neurological surgery who were diagnosed in our hospital and met the inclusion criteria were selected as the research objects. Random number table method was used to group. In observation group: 23 males, 20 females, average age 55.17 ± 11.03 years

and disease types inclouding 22 cases of cerebrovascular accident, 18 cases of brain trauma, and other 3 cases. In control group: 25 males, 18 females, average age 54.87 ± 10.52 years and disease types inclouding 25 cases of cerebrovascular accident, 16 cases of brain trauma, and the other 2 cases. There was no statistically significant difference between the two groups in general information such as gender, age, and disease type, and they were comparable ($P > 0.05$).

Method

The patients in the control group received routine care. The various nursing operations were performed in accordance with the doctor's instructions, and the changes in various vital signs were closely monitored. The patients in the observation group were managed by CNP on the basis of the control group. The specific operations are as follows.

The construction of CNP management system

The nursing management of brain ICU patients was designed according to the 'Guiding Principles of Clinical Path Management' [3]. A CNP management team was set up, with the head of the department as the team leader, responsible for the design and supervision of the entire CNP process, and the head nurse as the deputy team leader, responsible for the implementation and quality control of the specific CNP process. 1 rehabilitation physiotherapist and 10 nurses with more than 3 years of work experience were selected as the team members. All members received professional CNP training, with scientific division of labor and individual responsibility.

Diagnosis stage

① Within 4 hours (h) after admission: The first physician completed the patient's admission medical history, arranged the corresponding laboratory and inspection items to complete the initial diagnosis, characterize and stage the disease. The members of CNP management team formulated corresponding nursing management plan based on the patient's condition, and explained the diagnosis results, treatment methods, treatment goals and preliminary expected results to the patient's family. ② The first week after admission: Medical staff should actively communicate with the patient's family to comprehend the patient's own characteristics, personal preferences and eating habits so as to provide comprehensive care for diet, medication, sleep and other aspects. At the same time, it was necessary to actively communicate with rehabilitation physiotherapists and the doctor in charge, and appropriately adjust the nursing management plan according to the actual patient's clinical situation and the doctor's guidance.

Surgical stage

① The day before the operation: The patient's family members received health education related to brain ICU surgery to further understand the causes, results and possible complications of the surgical treatment. The operation process was introduced in detail, and the questions were answered to family members in time. ② During the operation: The blood pressure, body temperature, heart rate and other vital signs should be closely monitored. If any abnormalities are found, the doctor would be notified in time. Corresponding measures were taken to assist the doctor in all nursing work until the end of the operation. ③ Afer 3 days of the operation: The increased number of inspections in the ward were arranged. The changes in the vital signs were continuously concerned, and the postoperative precautions and possible adverse reactions were informed again to family members. Once there was a problem, it should notify the doctor in charge as soon as possible.

Rehabilitation stage

It was important to communicate with the patients' families frequently, understand the actual needs and solve the problems of the patient in time, increase the family's trust in the nursing staff, what's more, on the basis of conventional rehabilitation treatment, various assistive technologies, compensation technologies and environmental modification were used to guide patients to cope with their own dysfunction, assist the

use of orthoses and wheelchairs, strengthen their neurological recovery training and daily skills training, with special emphasis on strengthening their cognitive function training and language function training.

Discharge guidance

Before leaving the hospital, members of the management team would conduct a comprehensive pre-discharge assessment and follow-up rehabilitation guidance for patient. The specific post-discharge rehabilitation plan was formulated. Notably, the each link of nursing should be quantified and detailed, such as reminding the achievement of rehabilitation effect every week, reminding the members to record the condition changes the content of rehabilitation training daily, conduct periodic summary once a month, and go to the hospital for regular review. Any adverse events occured during the rehabilitation process should be promptly sent to the hospital for treatment.

Observation indicators

The reoperation rate, rehospitalization rate and complication rate of the two groups were compared, reoperation rate = number of reoperation cases/total number of cases × 100 %, re-admission rate = number of rehospitalization cases/total number of cases × 100 %, complication rate = number of complications/total number of cases × 100 %. The quality of life (QOL) score of patients was evaluated by the ability of daily living scale (ADL) in the third month of recovery. The higher the score usually represented the better QOL. In addition, the satisfaction of the patients' family members was compared, satisfaction = number of satisfied cases/total number of cases × 100 %.

Statistical analysis

Statistical analysis was performed using SPSS 20.0. The count data were compared with the χ^2 test. The measurement data were expressed by mean ± standard deviation ($\bar{x}\pm s$). And the t test was used for comparison. $P < 0.05$ was considered as statistically significant.

Results

Comparison of reoperation rate, re-admission rate and complication rate

The reoperation rate, re-admission rate and complication rate of the observation group were significantly lower than those in control group (Table 1, $P < 0.05$).

Table 1. Comparison of reoperation rate, re-admission rate and complication rate between the two groups of patients (n (%))

Groups	Cases	Reoperation rate	Re-admission rate	Complication rate
observation group	43	0 (0.00)	0 (0.00)	1 (2.33)
control group	43	6 (13.95)	5 (11.63)	12 (27.91)
χ^2		6.450	5.309	10.965
P		< 0.05	< 0.05	< 0.05

Comparison of QOL and family satisfaction

After the intervention, the QOL score and family satisfaction of the observation group were significantly higher than those in control group (Table 2, $P < 0.05$).

Table 2. Comparison of the quality of life and family satisfaction of the two groups of patients

Groups	Cases	QOL (point)	Family satisfaction (n (%))

observation group	43	76.54 ± 8.95	41 (95.35)
control group	43	54.27 ± 7.63	29 (67.44)
t/χ^2		12.417	11.057
P		< 0.05	< 0.05

Discussion

The CNP refers to a procedural and standardized medical treatment process with strict time and work sequence requirements formulated by medical staff for a certain disease or a certain operation, based on evidence-based medicine and for the purpose of expected treatment effects [4]. As an advanced clinical care model, CNP can continuously optimize the nursing process through the implementation of standardized medical care plans, thereby ensuring medical quality while reducing medical costs. And it has achieved certain results in the care of various diseases such as esophageal cancer [5, 6]. In this study, CNP was used to manage the brain ICU patients and has shown remarkable results.

CNP could improve the prognosis of brain ICU patients

① The construction of the CNP management system: The establishment of a professional CNP management team had laid the foundation for the development of post-care management. All members had a clear division of labor and performed their duties, which was conducive to the orderly progress of the CNP management. ②Diagnosis stage: The initial diagnosis within 4 h of admission could enable medical staff to initially understand the condition of patient and was benefit to CNP management team members in determining the initial management plan. On the other hand, through the preliminary explanation of the diagnosis results, the disease awareness of the family was increased, which was conducive to improving the clinical cooperation. Within 1 week after admission, active communication among the patient's family, attending physician and rehabilitation physiotherapist could help nurses further deepen the understanding of the patient, thereby improving the rationality of the nursing plan. ②Surgical stage: The day before the operation, through the operation-related health education, the family members could have a full understanding of the operation process and possible complications, which was beneficial to improve the cooperation. During the operation, the comprehensive care of the patient could improve the progress of the operation. After 3 days of operation, it was beneficial to improve the quality of care and the prognosis of patients through the strengthened inspections, the second health education for family members and daily postoperative care.

CNP could improve the QOL and family satisfaction of brain ICU patients

① Preoperative stage and surgical stage: Through communication with the patient's family, the distance between the nursing staff and the family was narrowed. And the QOL of patient was improved through the comprehensive care medication, diet, sleep and other aspects, which was beneficial to the satisfaction. ② Rehabilitation stage: It is crucial to understand the patient's difficulties and actual needs carefully. Solving the difficulties in the first time could effectively improve the patient's QOL. Daily skill training and neurological rehabilitation training could promote the functional recovery of patients after surgery to improve QOL. ③Discharge guidance: The detailed discharge rehabilitation plan and the guidance on daily care and rehabilitation training after discharge were conducive to promoting the recovery of neurological function after discharge from the hospital, thereby improving the patient' QOL and increasing the satisfaction of the patient's family.

In summary, CNP had a significant effect in the care and management of brain ICU patients. It could effectively improve the prognosis, QOL, and the

family satisfaction.

Declaration of conflict-of-interest

The authors declare no conflict-of –interest.

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