



Analysis of the Preventive Effect of Ultra-early Rehabilitation Nursing on Complications in Patients with Severe Emergency Trauma

Hong Li, Xiaohua Li, Wenqiong Wu, Shaoqin Hong

Emergency Medicine Department, 920th Hospital, Joint Logistic Support Force of the Chinese People's Liberation Army, Kunming 650118, Yunnan, China.

How to cite this paper: Hong Li, Xiaohua Li, Wenqiong Wu, Shaoqin Hong. (2024). Analysis of the Preventive Effect of Ultra-early Rehabilitation Nursing on Complications in Patients with Severe Emergency Trauma. *Clinical Nursing Perspectives*, 1(1), 31-34.
DOI: 10.26855/cnp.2024.12.004

Received: October 5, 2024

Accepted: October 26, 2024

Published: November 16, 2024

***Corresponding author:** Hong Li, Emergency Medicine Department, 920th Hospital, Joint Logistic Support Force of the Chinese People's Liberation Army, Kunming 650118, Yunnan, China.

Abstract

Purpose: Aiming at the requirements for the prevention of complications in patients with severe emergency trauma, the preventive effect of ultra-early rehabilitation nursing was studied. **Methods:** A total of 100 patients with severe emergency trauma admitted to our hospital between December 2020 and December 2021 were selected for comparative experiments. According to the different forms of nursing, patients with severe emergency trauma who were given routine nursing were included in the control group, with 50 patients in this group, and those who were given ultra-early rehabilitation nursing were included in the observation group, with 50 patients in this group. The number and proportion of common complications, including infection, inflammatory reaction, dyspnea, and skin ulceration in patients were compared; the efficiency of patients after nursing (effective, significant, and ineffective) was counted; the time for patients to get out of bed, normal self-care time, and hospitalization time were counted, and the effect of ultra-early rehabilitation nursing on promoting patient recovery was compared. **Results:** The number and proportion of patients with concurrent infection, inflammatory reaction, dyspnea, and skin ulceration in the observation group were relatively low. In the observation group of ultra-early rehabilitation nursing, the efficiency of the establishment of the body, physiological recovery, and even psychological positive barriers after nursing was relatively high, and the hospitalization time was short ($P < 0.05$). **Conclusion:** Ultra-early rehabilitation nursing can help patients with severe emergency trauma to reduce the incidence of complications, assist in treatment behavior to promote early recovery and discharge of patients, help reduce the economic pressure of patients, and prevent the psychological stress caused by long-term hospitalization. It can be promoted in clinical practice.

Keywords

Ultra-early rehabilitation nursing; Emergency; Severely traumatized patients; Complication prevention

In trauma care, it is necessary to promptly identify the patient's wound, bandage and stop bleeding, to prevent the wound from getting infected or causing secondary damage due to bad activities. For patients with severe trauma, it is necessary to ensure the patient's survival rate, thereby reducing the patient's injury risk. The physiological effects of pain can be reduced, and ultimately the patient's physiological recovery level can be improved, prompting the patient to recover and be discharged from the hospital as soon as possible [1].

1. Materials and methods

1.1 General information

A total of 100 patients with emergency severe trauma admitted to our hospital between December 2020 and December 2021 were selected for comparative experiments. According to the different forms of nursing, patients with emergency severe trauma who received routine care were included in the control group. Trauma types: 19 cases of physical trauma, 17 cases of biological trauma, and 14 cases of chemical trauma. Exclusion conditions: combined mental injury; history of mental illness; severe neurological stress reaction.

Inclusion criteria: The injury site was consistent with the anatomical findings; the tissue injury was treated and recovered in the later stages [2].

1.2 Methods

1.2.1 Ultra-early rehabilitation care:

① Maintain effective breathing in the early stage

Patients with severe post-traumatic respiratory obstruction may have difficulty breathing due to problems such as tongue prolapse, which may lead to suffocation in severe cases. Patients need to be helped to clean up the secretions from their mouths and noses, clean up the dirt from vomiting, and wipe off the blood, sputum and other excretions from the patients. For patients with sputum stuck in the throat and difficult to expel, they need to be guided to cough up the sputum effectively. Patients with injuries to the chest, abdomen, head and neck need to wear a neck brace to prevent secondary cervical spine injuries. The patency of the patient's airway should be observed, and the patient's normal breathing level should be analyzed based on the patient's physical signs, respiratory rate, blood oxygen saturation, etc., and then targeted oxygen inhalation and tracheal ventilation care should be given [3].

② Ultra -early control of bleeding

Combined with the observation of the patient's vital signs, the bleeding situation is analyzed based on blood pressure, pulse, etc. For active bleeding, shock should be prevented early. After applying pressure to stop bleeding, the amount of blood in and out should be recorded at any time. Two intravenous routes should be opened, blood should be prepared in advance and a blood routine test should be performed. According to the doctor's instructions, a urethral catheter should be placed as soon as possible and removed as soon as possible in the later stage. During this period, the nature of the patient's urine should be observed to prevent urinary tract infection. The urethral opening should be wiped and disinfected for the patient. If the patient needs to be sent to the operating room for treatment, the patient's vital signs should be confirmed to be stable before the operation [4].

③ Ultra -early neurological assessment

Assess the patient's pupil reflexes as soon as possible to determine whether the patient has increased intracranial pressure after injury, prevent intellectual disability and brain herniation, and determine the degree of the patient's impaired consciousness. If the patient has brain damage and is more agitated, the head should be fixed as soon as possible to avoid excessive activity that may cause hematoma and other problems.

④ Ultra -early full body examination

The patient's vital signs are stable, the location of the wound is determined, and there is no other obvious trauma. However, there may be some hidden functional limitations. Some patients seem to have unconsciousness and behavioral disorders in the early stage, but the latent symptoms soon become apparent and threaten their lives. After the patient is admitted to the hospital, after an examination of visible physical injuries, a systematic full-body examination is also required. Jewelry and decorations carried by the patient should be removed as soon as possible to avoid accidental scratches. Some small bleeding points should be carefully observed, and areas covered by clothing such as the limbs, back, abdomen, inner thighs, armpits, and perineum should be checked in detail. During the turning process, the patient is required to be in an axis to avoid sprains at the joints.

⑤ Ultra -early psychological care

Patients have different psychological disorders due to different traumatic situations. They usually suffer from post-traumatic stress disorder and psychologically reject the relevant environment. It is necessary to communicate with

the patients while they are awake, analyze whether they are suffering from psychological stress, and help them get out of the shadow as soon as possible [5].

1.3 Observation indicators

Compare the number and proportion of common complications such as infection, inflammatory reaction, respiratory distress, and skin ulceration;

Statistics on the efficiency of patients after nursing care (effective, significantly effective, ineffective);

The time it takes patients to get out of bed, the time it takes to take care of themselves, and the length of hospital stay were recorded to compare the effects of ultra-early rehabilitation care on promoting patient recovery.

1.4 Statistical analysis

SPSS 21.0 was used for data processing. The data were expressed as mean \pm standard deviation (4-s). Paired data were measured by t test and count by χ^2 test. Statistical differences were determined by P ($P < 0.05$ or $P > 0.05$).

2. Results

(1) Ultra-early rehabilitation care helps prevent complications and reduce the incidence of complications. See Table 1 for details.

Table 1. Comparison of the effectiveness of preventing complications in patients with severe trauma in emergency department

Group	n	Infect	Inflammatory response	Shortness of breath	Skin ulceration	Total probability
Observation Group	50	1 (2%)	2 (4%)	1 (2%)	0	3 (6%)
Control group	50	2 (4%)	2 (4%)	3 (6%)	1 (2%)	8 (16%)
χ^2	-	2.156	2.845	2.136	2.549	2.195
P	-	<0.05	<0.05	<0.05	<0.05	<0.05

(2) Comparison of the effectiveness of nursing care for patients with severe trauma in the emergency department: In the observation group, 33 cases were effective, 16 cases were significantly effective, and 1 case was ineffective, with a total effective rate of 98%; in the control group, 29 cases were effective, 15 cases were significantly effective, and 6 cases were ineffective, with a total effective rate of 88%; $t = 2.165$, $t = 2.865$, $t = 2.984$, $P < 0.05$.

(3) Comparison of recovery time of emergency patients with severe trauma: the time for getting out of bed and moving around was 8.25 ± 4.12 days, the time for normal self-care was 14.26 ± 5.23 days, and the hospitalization time was 26.23 ± 5.48 days in the observation group; the time for getting out of bed and moving around was 10.23 ± 3.26 days, the time for normal self-care was 17.42 ± 2.59 days, and the hospitalization time was 29.36 ± 5.14 days in the control group; $t = 2.845$, $t = 2.526$, $t = 2.465$, $P < 0.05$.

3. Discussion

The concept of ultra-early rehabilitation care is a model promoted by the emergency department, based on the patient's critical and complex clinical conditions. A rehabilitation plan is formulated when the patient is admitted to the hospital, or even in the pre-hospital emergency stage, with the purpose of saving the patient's life and promoting his or her recovery, and preliminary rehabilitation advice is given to the patient.

Combined with the clinical research of patients with severe trauma in the emergency department, it is found that the factors that affect the early recovery and discharge of patients are relatively complex. One is that the family members and patients are not fully aware of it, they are too cautious after severe trauma, and lack professional physical function judgment ability. Therefore, timely evaluation of patients, informing patients of the results of the evaluation, encouraging and guiding patients to participate in self-care activities, trying to maintain self-reliance, and training and exercising as early as possible are effective measures to shorten the recovery time and promote the early recovery of patients' physiological functions. Secondly, clinical rehabilitation training is carried out relatively late. After severe trauma, when the patient's physical signs are relatively stable and all indicators are relatively normal,

training of physical function, language, muscle, joint, balance, cardiopulmonary function, etc. can be carried out. Training during bed rest can be carried out from shallow to deep. Under the ultra-early rehabilitation nursing model, combined with the analysis of the patient's condition, the patient is given language training tasks, finger, wrist joint, and ankle joint activities in the ultra-early stage, starting with passive training and gradually transitioning to active training. At the earliest, training can be carried out with the help of relevant braces, which can stimulate the potential of the human body in the early stage of trauma treatment and reduce the disability rate.

References

- [1] He Yunhua. Analysis of the clinical effect of different nursing interventions on the prevention of complications in emergency patients with severe traumatic hemorrhagic shock[J]. *Electronic Journal of Practical Clinical Nursing*, 2020,5(26):2.
- [2] Meng Yuhui. Application of 4R crisis management theory in the nursing of patients with severe traumatic hemorrhagic shock in the emergency department and its preventive effect on complications[J]. *International Journal of Nursing*, 2021,40(16):3.
- [3] Xu Haiqin. Analysis of the impact of emergency nursing measures on complications and treatment effects of patients with severe trauma[J]. *Yishou Baodian*, 2020(22):1.
- [4] Li Xiuli, Wang Minfang, Chen Shengdi. Analysis of the impact of emergency nursing intervention on the rescue success rate, complications and prognosis of acute trauma patients[J]. 2022(3).
- [5] Zhang Qinghong, Fu Peipei. Analysis of the nursing effect of emergency nursing intervention on patients with severe traumatic shock[J]. *Everyone's Health*, 2020,519(10):191-191.
- [6] Sun Yan. Effect of ultra-early rehabilitation nursing intervention on self-care ability and quality of life of elderly patients with ischemic stroke[J]. *International Journal of Nursing*, 2022,41(6):5.
- [7] Tang Zhimei. Effect of ultra-early rehabilitation nursing on limb function recovery and self-care behavior in patients with ischemic stroke[J]. *International Journal of Nursing*, 2020,39(12):4.
- [8] Wang Hui. Effect of ultra-early rehabilitation nursing on the improvement of motor dysfunction and neurological function recovery in stroke patients[J]. 2021.
- [9] Xu Wei. Study on the efficacy of ultra-early rehabilitation nursing model in patients with hemiplegia after stroke[J]. *Chinese Journal of Health Care and Nutrition* 2021,31(14):187.
- [10] Wang Xiaoliang. Effect of ultra-early rehabilitation nursing on improving neurological function and quality of life in elderly patients with ischemic stroke[J]. *Systems Medicine*, 2020.
- [11] Tian Qian. Exploring the effect of ultra-early rehabilitation nursing on the quality of life of patients with hypertensive cerebral hemorrhage after surgery[J]. *Friends of Health*, 2020.
- [12] Su Xin. Effect of ultra-early rehabilitation care on motor function of stroke patients[J]. *Chinese Practical Medicine*, 2021,16(27):3.