Analysis of applied nursing care of injury control in the orthopedic department of emergency trauma

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Abstract: Objective: To explore and analyze the application effect of injury control in trauma emergency orthopedics, and summarize and expound the key points of its nursing, so as to provide reference for clinical nursing. **Methods:** From January 2018 to December 2018, 130 patients who received treatment in the department of trauma emergency orthopedics in our hospital were selected for the study. The subjects were randomly divided into a reference group and a study group with 65 participants according to the coin toss method, and received conventional trauma treatment and treatment and nursing care under the injury control concept, respectively. The clinical efficacy of the two groups was compared. **Results:** The cure rate was 86.2% in the control group, significantly higher than 58.5% in the control group. Meanwhile, the disability rate and mortality were 10.8% and 3.1%, respectively, which were significantly lower than the corresponding data of 24.6% and 16.9% in the reference group. All the differences were statistically significant ($P<0.05$). In addition, the length of hospital stay in the study group (46.2±4.1) d was significantly shorter than that in the reference group (32.7±5.3) d, $P<0.05$. **Conclusion:** Injury control can significantly improve the curative effect of first aid treatment for trauma emergency orthopedic patients, which is conducive to the recovery of patients and the control of complications.

1. Introduction

Most of the patients in the department of trauma emergency orthopedics are caused by various accidents, most of which are caused by falling injuries in the construction industry and traffic accidents. China's economy has maintained a rapid development speed in recent years, and the development speed of construction and transportation is in a leading position, which has made outstanding contributions to the continuous progress of China's society. However, the number of accidents continues to increase. In recent years, medical data show that the bed caused by various accidents has become one of the biggest threats to people's health and life. Moreover, in recent years, traumatic orthopedic patients show many new adverse features, and the number of patients with multiple injuries and complex injuries continues to increase, which further increases the difficulty of treatment and is also very adverse to the prognosis of patients. Once the patient is disabled or dies, the family will be severely affected. Therefore, how to minimize the disability and mortality of such patients is the current focus of emergency trauma orthopedics. Relevant studies and practices have proved that in the early stage of such patients' onset, a comprehensive and effective assessment of the patients' injuries and the implementation of reasonable injury control methods can help reduce the probability of patients' disability and death. In order to have a clearer understanding of this statement, our hospital carried out this study, which is reported as follows.

2. Materials and Methods

2.1 General Materials

A total of 130 patients who received treatment in the department of trauma emergency orthopedics in our hospital from January 2018 to December 2018 were selected for the study. The subjects were randomly divided into a reference group and a study group of 65 people according to the coin toss method. The ratio of male to female in the two groups was 42:23 and 40:25,

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respectively. The patients were aged from 18 to 60 years old, with an average age of (44.6±5.1) and (45.3±5.6) years, respectively. In terms of the causes of the patients' injuries, they were traffic accident, falling from high altitude and low altitude, smashing injury or sharp spirit and other reasons. There were 38 cases, 18 cases, 5 cases and 4 cases in the study group. There were 37 cases, 17 cases, 6 cases and 5 cases in the reference group. All patients had multiple injuries involving the spinal cord, pelvis, limbs, brain, chest, abdomen, etc. There was no statistically significant difference in the general information and severity of injury between the two groups (P>0.05).

2.2 Inclusion Criteria

(1) All patients had multiple injuries; (2) all patients were sent to hospital for first aid at least 3 days after the trauma; (3) all patients or their families have a complete understanding of this study and agree to participate in this study.

2.3 Methods

The reference group received conventional trauma treatment. After admission, the patient's wound condition was observed and analyzed, and emergency disinfection was carried out with saline, and the infected and decaying tissues were removed to avoid further aggravation of infection. Pay attention to the patient's physical signs and provide antibiotics according to the patient's needs. Then, conventional repair surgery was performed for the patient, and supportive treatment was given according to the actual situation of the patient.

Patients in the study group received injury control, treatment and treatment, with the reduction of injury as the core, and the following measures were taken :(1) the vital signs of the patients were tested, including respiration, heart rate, blood pressure and other indicators, while the mental state, pupil, chest and abdomen of the patients were closely monitored; (2) provide oxygen inhalation for patients. After removing the foreign body in the mouth, nose and respiratory tract for the patient, the patient was quickly allowed to breathe oxygen. In addition, during the process of providing the mask for the patient to breathe oxygen, the respiratory skin bag was pressurized according to the actual needs of the patient to ensure the effectiveness of oxygen absorption. (3) timely carry out emergency disinfection and hemostatic treatment for patients, control the bleeding situation, and avoid shock caused by excessive bleeding; Anti-shock pants can be used if necessary. (4) once the patient has developed shock, effective thermal measures should be provided for the patient to prevent further blood flow barriers; At the same time, patients should strictly follow the principle of rapid, timely and adequate blood transfusion, and receive 500ml blood transfusion within 1 hour, while 300ml pressurized blood transfusion within 5 minutes is much more effective and significant for patients. If the patient is in moderate shock, even 400ml blood transfusion is needed within 5 minutes. Through early pressurized blood transfusion to form circulatory perfusion, it can help prevent and treat hypothermia, decreased coagulation ability and acidosis in the shock interval, which has a great effect on the resuscitation of patients. (5) perform basic nursing care for patients in this process, and place the patients in a suitable environment of temperature and humidity with 26℃ as the optimal temperature; At the same time the patient's temperature should do a good test; Change the main help for patients to keep warm, the skin of patients should not be exposed to the air as far as possible; Reasonable use of infusion heater, to ensure that the liquid at a suitable temperature into the body; Based on the patients need to supplement the patients with alkali to neutralize the excessive acid metabolites caused by injury. (6) to save patients' lives and reduce bed as the first priority in the early stage; Then the corresponding treatment plan was selected based on the actual situation of the patients. In this process for conscious patients, to do a good job of psychological care for patients, as far as possible to eliminate the negative emotions of patients, with a relatively calm psychological state to receive follow-up treatment.

2.4 Observation Indexes

(1) The results of treatment and nursing were compared between the two groups. We divided the patient's condition into three outcomes: cure, disability and death. (2) the length of hospital stay during treatment was compared between the two groups.

2.5 Statistical Methods

SPSS20.0 was used to conduct statistical analysis of the relevant indicators of the two groups of patients in the study. The measurement data were evaluated by t test, and the enumeration data were evaluated by X^2 test.

3. Results

3.1 Therapeutic Effect

As can be seen from the data in table 1 below, after treatment and nursing, the cure rate of patients in the study group who received injury control was 86.2%, significantly higher than 58.5% of patients in the reference group who received conventional treatment. Meanwhile, the disability rate and mortality were 10.8% and 3.1%, respectively, which were significantly lower than the corresponding data of 24.6% and 16.9% in the reference group. All the differences were statistically significant, P<0.05.

Table 1 comparison of treatment results between the two groups

groups	n	cured	disable	death
the study group	65	56(86.2)	7(10.8)	2(3.1)
the reference group	65	38(58.5)	16(24.6)	11(16.9)
χ^2		12.4468	4.2787	6.9231
P		<0.05	<0.05	<0.05

3.2 Comparison of Hospital Stay

The statistical data showed that the length of stay in the reference group was (46.2±4.1) d. The length of hospital stay in the study group was (32.7±5.3) d. The statistical comparison showed that the length of stay in the study group was significantly shorter than that in the control group (P<0.05).

4. Discussion

Injury control is a new concept in the field of first aid for severe multiple injuries. This concept is applied in the time, which is to reduce the damage as the core work of first aid, and to avoid other irreversible injuries in the process; Instead of immediate repair of the injury. Therefore, the fundamental purpose of injury control is to improve the treatment rate, reduce the death rate and disability rate. In this process, clinical nursing staff must have a clear understanding of their job responsibilities, and in the process of the patient's various systems to maintain close attention.

After receiving the patient, the medical staff must first make a comprehensive assessment of the patient's condition, especially make an effective judgment on the patient's respiratory system, circulatory system and nervous system, and closely monitor the patient's vital signs. The following inclusion conditions are generally required for injury control :(1) the PH value of the patient is below 7.3; (2) the temperature of the patient is below 35 ℃; (3) the coagulation barrier PT of the patient exceeded 16s; (4) the patient had obvious visceral swelling and had great difficulty in abdominal closure. (5) the patient had a large amount of blood loss, and the transfusion volume was expected to be above 2000ml; For patients with these conditions, injury control is the best choice.

Patients in the process of nursing, must do the relevant work. The nursing process should pay special attention to the nursing of shock patients. Once the patient has developed shock, effective thermal measures should be provided for the patient to prevent further obstruction of blood flow. At the same time, patients should strictly follow the principle of rapid, timely and adequate blood transfusion, and receive 500ml blood transfusion within 1 hour, while 300ml pressurized blood transfusion within 5 minutes is much more effective and significant for patients. If the patient is in moderate shock, even 400ml blood transfusion is needed within 5 minutes. Through early pressurized blood transfusion to form circulatory perfusion, it can help prevent and treat

hypothermia, decreased coagulation ability and acidosis in the shock interval, which has a great effect on the resuscitation of patients. In addition, patients with hypothermia, that is, patients below 35 degrees Celsius, must be kept in high care; Once the body temperature drops below 35 ℃, serious damage will be caused to the body of the patient, and the patient's coagulation function will be strongly inhibited. This causes a decrease in cardiac output, a shift of oxygen to the left of the curve, and so on. Therefore, the nursing staff must pay close attention to the indicators of physical signs in the nursing process; In addition, nursing staff should try to know how to judge the condition of patients according to the test indicators of patients, which is very important to provide help for doctors in emergency.

In this study, the data showed that the cure rate of patients in the injury control group was 86.2%, significantly higher than 58.5% in the reference group receiving conventional treatment. Meanwhile, the disability rate and mortality were 10.8% and 3.1%, respectively, which were significantly lower than the corresponding data of 24.6% and 16.9% in the reference group. All the differences were statistically significant ($P<0.05$). This fully shows that injury control has a very significant effect in saving patients' lives and reducing patients' disability rate. In addition, the length of hospital stay in the study group (46.2±4.1) d was significantly shorter than that in the reference group (32.7±5.3) d, $P<0.05$. It also suggests that injury control can help patients recover as quickly as possible.

To sum up, injury control has a significant improvement in the curative effect of first aid treatment for trauma emergency orthopedic patients, which is conducive to the recovery of patients and the control of complications, and has a high significance and value of clinical promotion.

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