

Observations on the Preventive Effects of Anti-infective Treatment on Wound Infection in Emergency Surgery

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Abstract: Objective: To explore the preventive effects of anti-infective treatment on wound infection in emergency surgical trauma. **Methods:** 180 patients in our hospital from 2019 to June to May 2020 were selected as subjects. The 180 patients were randomly divided into two groups. The control group had 90 cases and adopted the conventional treatment method, and the experimental group received anti-infective treatment. The wound healing, infection status, and patient satisfaction of the two groups of patients were analyzed. **Results:** The wound healing, infection status, and patient satisfaction of the experimental group were better than those of the control group. **Conclusion:** The application of anti-infective treatment to the prevention of wound infection in emergency surgical trauma can reduce the infection rate of the patients' incision and promote the recovery of patients. It is suitable for clinical applications.

Keywords: Anti-infective treatment; Emergency surgery; Surgical trauma incision infection; Prevention

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1 Introduction

With the rapid development of various industries in the society, the incidence of trauma is also increasing. The most common complication in trauma patients requiring trauma treatment is postoperative wound infections. Since the severity of the infection directly determines the prognosis of the patient, prevention of infections in the emergency department is crucial.

Through data analysis, Chen Zehua^[1] et al. found that several indicators such as age, BMI, TS score, and operation time show clear correlations. When encountering patients with low scores, medical staff need to be vigilant and discover early to prevent the incidence of incision infection to the greatest extent; Yang Yanyan^[2]'s research shows that once incision infection occurs, it will affect the patient's recovery and postoperative recovery; Zhong Chao^[3]'s research shows that emergency surgical trauma is mainly due to complicated conditions, so active nursing intervention after the patient's operation is required to prevent the patient's wound from worsening or infection; Huang Wen^[4]'s studies have shown that reasonable preventive care can effectively control the incidence of complications and promote the speed of wound healing. Through the reading and understanding of these literatures, this paper divided 180 patients in our hospital to study the effects of anti-infective treatment on the prevention of emergency surgical trauma incision infection. The report is as follows.

2 Data and Methods

2.1 General Data

180 patients in our hospital admitted between 2019-June and May 2020 were selected as subjects. The 180 patients were randomly divided into two groups. The control group had 90 cases and adopted conventional treatment methods, whereas the patients in the experimental group received anti-infective treatment. The patients were informed of all treatment and the experimental processes and had given their consent. Patients suffering from combined tumors,

severe cardiovascular disease, and liver and kidney function insufficiency had to be excluded from this study. The basic data such as the gender of the patient has no influence on this study.

2.2 Methods

Patients in the control group received conventional treatment. Regular wound cleaning was performed, the wounds were disinfected and debris were removed with saline and regular disinfectants. After the wounds were treated, patients were sent to the operating theatre and routine nursing intervention was carried out after surgeries.

After the doctor determined the degree of trauma according to the existing group, the patients in the experimental group received the corresponding anti-infective treatment: oral tetracycline 0.25 to 0.50g/time, 6 hours/time, oral administration of 1.0 to 2.0g/time or muscle piperacillin acid injection, 1-2ml/time injection is normal operation, general nursing intervention after surgery.

Postoperative care was carried out according to the doctor's judgment on postoperative wound infection. Mild infection: the wound was disinfected with alcohol and iodophor, irradiated with a specific electromagnetic wave treatment device (TDP) lamp and oral antibacterial agent was given if necessary, moderate infection: drainage during debridement, late TDP lamp irradiation, oral antibacterial agent was given, severe infection: the dressing was removed, the area of incision was washed with saline, the

open wound was drained into the drainage tube, antibacterial agents were given, and then waited for new granulation to grow.

2.3 Observation Indicators

Comparing the wound healing, infection status and satisfaction of the two groups of patients after treatment, the satisfaction in this paper adopted an anonymous questionnaire survey, which is divided into three levels, very satisfied with (9, 10) points, and relatively satisfied with (6, 9] points, dissatisfaction is 6 points or less.

2.4 Statistical Methods

SPSS23.0 statistical software was used to process the data. Count data is expressed as rate (%) and checked using χ^2 test; rank data was checked with rank-sum test. $P < 0.05$ indicates that the difference is statistically significant.

3 Results

3.1 Comparing the Incision Healing Status and Infection Status in Two Groups of Patients after Treatment

This study have shown that the incision healing rate of the control group is significantly lower than that of the experimental group, and the infection status of the experimental group is significantly lower than that of the control group.

Table 1. Comparison of the Incision Healing Status and Infection Status in Two Groups of Patients after Treatment [n(%)]

Group	No. of Cases	Good Incision Healing	Infection
Control	90	65 (72.22)	25 (27.78)
Experimental	90	85 (94.44)	5 (5.56)
χ^2		12.331	16.111
P		<0.05	

3.2 Comparing Patient Satisfaction in the two Groups

The patient satisfaction of the experimental group is

significantly higher than the control group.

Table 2. Comparison of Patient Satisfaction between the Two Groups

Group	Very Satisfied	Satisfied	Dissatisfied
Control (n=90)	45 (50.00)	25 (27.78)	20 (22.22)
Experimental (n=90)	65 (72.22)	20 (22.22)	5 (5.56)
P		<0.05	

3 Discussions

Surgical trauma is a common disease in emergency

rooms. This is usually very critical and requires timely and effective treatment. Otherwise, it may endanger the patient's life. Trauma can have

many effects on the health and quality of life of patients. The symptoms are relatively complex. During surgical treatment, bacteria can easily enter the bloodstream, increasing the possibility of incision infection. Patients with surgical trauma are encouraged to take all preventive and control measures^[5]. Prevention of infection before surgery mainly lies in wound healing. The most commonly used method is to clean with saline, cleaning fluid and hydrogen peroxide. Meanwhile, medical staff should pay special attention to hand disinfection during the operation, and perform personal hygiene and cleaning procedures to reduce the incidence of infection. The first step to prevent wound infection in patients with surgical trauma is to pay close attention to wound pain and limb circulation, and to monitor the patient's body temperature, skin color, and swelling. Strictly follow the principle of sterilization when changing the dressing to minimize the incidence of infection. Incision infection after surgical trauma is one of the main forms of nosocomial infection, and its incidence accounts for about 1/10 of the total number of nosocomial infections that seriously affect the prognosis of patients. Operating theatre environment, aseptic conditions and operation time mainly affect wound infection after emergency surgical trauma. Summer is the season of high incidence of nosocomial infections. In order to reduce infections, laminar flow operating rooms should be actively built to ensure clean air and strengthen sterile operations. There are many domestic and foreign researches on nosocomial infections, especially postoperative wound infections in patients with emergency surgical trauma. Some scholars recommend anti-infective treatment for the conventional removal and disinfection of wounds to effectively prevent postoperative infections and improve the prognosis of patients. Anti-infective treatment can effectively reduce the chance of wound infection in patients with emergency trauma surgery, and its clinical effect is significant^[5]. The relevant research on anti-infective treatment was carried out at the incision site of emergency trauma surgery, and the quality of wound disinfection was compared with the incidence of infection after conventional disinfection and anti-infection treatment. The approved anti-infective treatment plan is as follows: The research on oral

tetracycline combined with intramuscular piperacillin acid injection shows that anti-infective treatment can effectively reduce the risk of wound infection in emergency surgical trauma, promote wound healing as soon as possible, and improve the quality of wound healing. In the study, by referring to relevant literature, it was believed that by combining the mechanism of action of existing antibacterial agents, tetracycline and piperacillin acid injections can be used as anti-infective agents. Tetracycline is a broad-spectrum antibacterial agent with good bactericidal effects, a wide range of action and strong action, but bacteria can become resistant to it and it needs to be used in combination with other antibacterial agents to enhance its anti-infection effects. Piperacillin acid injection is effective against Staphylococcus or sensitive Gram-negative bacilli. When piperacillin acid injection is used in combination with tetracycline, it can inhibit or kill pathogenic bacteria that usually cause incision infections in patients with emergency surgical trauma and reduce the risk of postoperative infection.

In conclusion, the application of anti-infective treatment to the prevention of wound infections in emergency surgical trauma can reduce the infection rate of the patient's incision, promote the recovery of the patient, and is suitable for clinical applications.

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