Nursing care of a case of cefoperazone sodium and sulbactam sodium with severe coagulation disorder after treatment of pulmonary infection in elderly patients

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Introduction. To summarize the nursing experience of an elderly patient with pulmonary infection with severe coagulation dysfunction after cefoperazone sodium and sulbactam sodium anti-inflammatory therapy. Nursing highlights: PDCA circulation management nursing model was used to establish a safe quality control group for bleeding prevention; Dynamic monitoring of patients' coagulation function, disease changes, medication effects, predictive nursing and complication nursing, reduce the bleeding risk of patients; Establish a reasonable liquid management and nutritional support system; Strengthen psychological intervention and health education to reduce the tension and anxiety of patients and their families. After careful treatment and nursing, the patient's coagulation function returned to normal, vital signs returned to a stable, and the quality of life was greatly improved.
Keywords. Cefoperazone sodium and sulbactam sodium; Pulmonary infection; Coagulation disorder; Nursing care

INTRODUCTION

Shope deep (shu ba jotham sodium cefoperazone sodium for injection, 1.5 g/branch, Pfizer pharmaceutical co., LTD.) is a common broad-spectrum antibiotic, common adverse reactions have damage to the skin and accessories, respiratory system, digestive system, blood system and liver damage, such as [1]. In recent years, the problem of coagulopathy caused by sulprothrombin has attracted more and more attention in clinical practice, which is manifested as prolonged prothrombin time and activated partial thromboplastin time. In severe cases, it can lead to gross hematuria, subcutaneous hemorrhage, gastrointestinal bleeding, etc. [2]. This article analyzes a case of severe coagulation disorder in an elderly patient with pulmonary infection after anti-infection treatment with sulprofunda, and now reports its treatment and nursing as follows:

1. CASE PRESENTATION

The patient, male, 92 years old, was admitted to our department in December 2022 due to high fever, cough, expectoration, and the fever clinic as "2019-ncov infection". After active treatment, the SARS-CoV-2 antigen and SARS-CoV-2 nucleic acid throat swab tests turned negative, and the pulmonary infection recurred thereafter. The patient had a history of cholecystolithiasis complicated with chronic cholecystitis, vascular cognitive impairment, duodenal repair, and subtotal gastrectomy. He was conscious, bedrid for a long time, and had a nasogastric diet. On April 18, 2023, the

patient developed high temperature, cough, sputum aggravation, sputum with wheezing. Chest X-ray showed interstitial inflammatory changes in both lungs. On April 18th morning before start application shope deep, check the prothrombin time (PT) of 11.2 SEC, part activated clotting time (APTT) live enzymes was 32.6 SEC, after nine consecutive days of shope deep anti-infection treatment, April 27 at 7:00 in the morning when sputum suction with a small amount of blood in sputum, nasty check results of venous blood return: PT was 63.3sec and APTT was 49.2sec, which was considered to be related to the application of Shuprotan. Shuprotan was stopped on April 27, and intravenous injection of vitamin K1 (10mg, once /12h), Yunnan Baiao capsule (0.5g, 3 times/day) dissolved in water were given to stop bleeding by gastric tube injection, and esomeprazole sodium powder injection (40mg, 3 times/day) was given. Injection of somatostatin powder (3.75mg, once per 12h) was pumped intravenously to stop bleeding. At 18:00 on the same day, the results of coagulation indexes were rechecked. PT was 79.3sec, APTT was 57.3sec, critical values were reported, and 200ml of plasma was infused immediately to supplement coagulation factors. Considering the patient's advanced age, many underlying diseases, high risk of bleeding, and possible condition changes or even life-threatening at any time, on April 27, 19: The lowest blood pressure was 79/43 MMHG at 2:00 on April 28, and the patient was in a drowsiness state, which was difficult to wake up. Dopamine injection 200mg and 0.9% sodium chloride injection 30ml at 5ml/h were given immediately for blood pressure raising treatment. He was given hydroxyethyl starch 40 sodium chloride injection 500ml intravenous drip for volume expansion therapy, and his blood pressure gradually returned to normal level after treatment. On April 28, the stool test results returned: Fecal occult blood was positive (++), and the patient was given fasting and rehydration therapy. In the morning, 200ml plasma was transfused to supplement coagulation factors, and human prothrombin complex (200iu, 1/ day) was given intravenously. On April 29, the results of coagulation indexes showed that PT was 14.9sec, APTT was 27.1sec, and the coagulation indexes basically returned to normal. On April 30, the results of coagulation indexes were rechecked: PT was 11.9sec, APTT was 30.0sec. After active hemostasis and coagulation factor supplementation, the results of reexamination of coagulation indexes on May 3 were as follows: PT was 11.7sec, APTT was 33.2sec, and stool test results were as follows: The dose of dopamine was gradually reduced, the blood pressure was kept stable, the patient's consciousness was clear, and the vital signs were stable. Therefore, the illness was stopped at 10: :55 on May 4. The patient stopped fasting and changed to nasal feeding diet, and gradually changed from flow diet to enteral nutrition diet. Dopamine vasopressor therapy was discontinued on May 6, and blood pressure remained normal. On May 10, 7 days after stopping hemostatic drugs, the results of coagulation indexes were rechecked: PT was 11.0sec, APTT was 31.1sec, and all coagulation indexes were normal. Now the patient's vital signs are stable, his consciousness is clear, and his quality of life has been greatly improved.

2. NURSING CARE

2.1 According to the patient's condition, the nursing system of PDCA cycle management was formulated.

PDCA cycle management is put forward by the American quality management expert deming is widely used in the standardization of quality management, the circulation of the scientific theory system, including the plan (plan, P), implement (do, D), check, check, C), summary treatment (action, A) four stages [3]. According to research reports [4], PDCA cycle management has achieved good results in health education for patients with diabetes and hypertension. In order to improve the nursing quality of the patient's bleeding prevention and treatment, the nursing system of PDCA cycle management was formulated, and a bleeding prevention safety and quality control group was established under the leadership of the head nurse, including the responsible team leader, senior nurses and responsible nurses. According to the patient's detailed condition, laboratory indicators, doctor's advice and medication, the team explored the possible changes of the patient's condition, formulated the PDCA nursing system, did a good job of predictive nursing of bleeding, carried out fine nursing in an all-round way, and promoted the patient's health recovery.

2.2 Strengthen the observation of patients' condition, propose corresponding nursing measures for possible complications, and reduce the bleeding risk of patients. Patients were given continuous non-invasive electrocardiographic and blood pressure monitoring, closely monitoring the changes of vital signs of patients, especially the changes of consciousness, heart rate and blood pressure. Emergency rescue equipment and drugs were prepared to prevent the occurrence of hypovolemic shock as soon as possible.

2.2.1 Prevention and nursing of gastrointestinal bleeding Upper gastrointestinal bleeding brown gastric contents mainly for hematemesis, vomiting or by transrectal eduction black, gastrointestinal bleeding can appear under the blood, chestnut stool or blood clots, occult bleeding is also the most common gastrointestinal bleeding under the elderly, can pass stool tests found [5]. Drug treatment is still the preferred treatment of acute upper gastrointestinal bleeding, for patients with acute upper gastrointestinal bleeding risk, especially the attacks, the reason is unknown, and medical history is unknown, in the life support and capacity recovery at the same time, adopt empirical combination, namely the intravenous application of somatostatin combined proton pump inhibitors (PPI), Most patients achieve rapid control of bleeding with this treatment [6]. Empirical treatment with esomeprazole sodium and somatostatin was initiated on April 27 when the patient's coagulation indexes were severely abnormal. On April 28, the patient's stool was dark in color. Laboratory examination showed that: Defecate occult blood positive (+ +), continue to fasting, rehydration, hemostatic treatment, and closely monitor the patient's vital signs, told family members and carers don't activities significantly patients, pay attention to

maintain defecate unobstructed, patients with frequently observed in patients with the color of the stool, and traits, timely to return samples and report if any abnormal doctor for processing.

2.2.2 Prevention and nursing of respiratory tract hemorrhage Patients have severe coagulation disorders and are prone to airway bleeding, which can cause asphyxia due to blood scab blocking the airway. Sputum suction should be performed on demand, and sputum suction should be performed when the sound of sputum increases or the patient's blood oxygen saturation suddenly decreases, so as to reduce the risk of airway damage [7]. Patients with pulmonary infection, phlegm, sputum suction daily more, sputum suction action to soft, sputum suction each time is too long, the longest for 15 seconds, sputum suction can oral and nasal suction phlegm alternates, prevent total repeatedly stimulating a mouth of nasal mucosa caused mucosa bleeding, even After each sputum suction, attention was paid to the presence of oral and nasal mucosal bleeding, and the changes in the color, character and quantity of sputum.

2.2.3 Prevention and nursing of skin and mucosal bleeding During the shift, the patient's skin condition and the observation of mouth and nose mucosa should be handed over. Attention should be paid to observe whether there are scattered bleeding points or ecchymosis on the skin surface. Turn over gently, keep the bed clean and dry, and prevent skin friction damage. When the indwelling needle was used for puncture and blood drawing, the blood vessels were protected as much as possible, the time of pressing the needle to stop bleeding was prolonged when the needle was pulled out, and the pressing was stopped when there was no bleeding.

2.3 The fluid management and nutritional support of patients should be carried out Patients with long-term enteral nutrition, due to poor digestive function, nutritional intake is insufficient, may lead to insufficient intake of vitamin K. According to studies, the main coagulopathy caused by sulfoperazone sulbactam has a certain impact on the synthesis and metabolism of vitamin K, causing vitamin K deficiency, leading to vitamin K-dependent hypothrombin synthesis reduction. As a result, it causes coagulation dysfunction, which is manifested as prolonged prothrombin time, partial activated thromboplastin time and bleeding tendency [8-9]. The patient had abnormal coagulation, positive fecal occult blood, and suspected potential bleeding. Fasting was given according to the doctor's advice, and intravenous nutrition and rehydration therapy were actively given. For the possible vitamin K deficiency, intravenous injection of vitamin K1 (10mg, once /12h) was given according to the doctor's advice. According to studies [10], excessive fluid can lead to tissue edema and delay the recovery of gastrointestinal function. Fluid management, monitoring of heart rate, blood pressure, urine volume and other indicators of patients, and accurate evaluation of volume indicators can better guide fluid replacement and avoid excessive fluid. Using infusion pump to control the speed of intravenous infusion and accurately record the intake and output in 24 hours is more conducive to assess the nutritional status of patients and the balance of intake and output, and promote the recovery of gastrointestinal function.

2.4 Psychological nursing and health education were provided to patients and their

families The patients are at high risk of bleeding. The patients and their families should be taught to identify some early signs of bleeding, and the responsible nurses and doctors should patiently explain the effectiveness of treatment and nursing to the patients and their families, so as to increase the confidence of the patients and their families, reduce the tension and anxiety of the patients and their families, and guide the family members to give comfort and support to the patients through stroking. Make them actively cooperate with treatment and nursing [11].

3.conclusion

Patients before application shope deep anti-infection the coagulation index, normal clotting abnormalities in the course of using shope deep and submitted to the critical value, disable shope deep basic returned to normal, three days after coagulation indexes according to the Naranjo adverse drug reactions rating scale, relevance evaluation results for probably [11], the patients blood coagulation dysfunction is likely to be caused by the deep shope. Studies have reported that advanced age and malnutrition are high risk factors for abnormal coagulation function caused by sulprodeep [12]. Elderly patients are often complicated with poor appetite, nutritional deficiencies, intestinal flora disorders and other problems, which can lead to insufficient vitamin K synthesis and thus affect coagulation function [13]. Comprehensive benefit risk should be choose the side effects of antibacterial drugs, if must use shope deep infection, treatment should be familiar with its influence on coagulation and bleeding mechanism, completes the coagulation index of monitoring, to have 2 or more at the same time factors of patients at high risk of bleeding, the prophylactic use of vitamin K or advice according to the susceptibility to choose other less influence on blood coagulation function of antibacterial drugs [14]. In the process of using Sulprodeep, once the coagulation index is found abnormal, it should be measured whether to stop using Sulprodeep, and give active and effective treatment and nursing. It is also very important to do a good predictive nursing during the application of sulprodeep in elderly patients. Observing whether there are bleeding points in the skin and mucosa, whether there is bleeding in the oral and nasal mucosa during sputum suction, and whether there is blood in the sputum, whether the stool color is red or black, etc., can indicate whether there is potential bleeding in patients, so as to achieve early detection and early treatment. To further improve the quality of life and survival rate of patients.

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