

Emergency Nursing of Patients with Acute Left Heart Failure

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ABSTRACT

Objective: We are aimed at exploring the emergency treatment and nursing measures for patients with acute left heart failure.

Methods: We selected 48 patients with acute left heart failure in our department monitored by ecg immediately after admission. Open venous access; Sitting position, sagging legs, inhalation of alcohol humidified oxygen, heart strengthening, diuresis, sedation, asthma, vasodilation, shock patients were given vasopressor drugs or intra-aortic balloon counterpulsation; And psychological care.

Results: 44 cases were improved after active rescue, with only 4 cases died, which the success rate of rescue was 91.67%.

Conclusion: Timely, rapid and standardized nursing is very important to improve the success rate of acute left heart failure and prognosis of patients.

Keywords

Acute left heart failure, First aid, Nursing.

Introduction

Acute heart failure is an acute clinical syndrome secondary to cardiac dysfunction that leads to rapid occurrence or deterioration of symptoms and signs of heart failure [1,2], which clinical symptoms as follows, more sudden onset, rapid aggravation, life-threatening and poor prognosis, hospitalized case fatality rate is 3% [1,3]. In clinical practice, acute left heart failure is more common, with pulmonary edema or cardiogenic shock as the main manifestation, which is a serious "acute critical illness", therefore rapid clinical intervention is needed. Only timely correct and effective treatment and emergency nursing can improve the success rate of acute left heart failure patients, improve the prognosis of patients, the quality of life of patients. This paper retrospectively analyzed the clinical data of 48 patients with acute left heart failure in the department of Cardiology of our hospital, and summarized the nursing experience as follows.

Clinical Data

General data

We selected 48 patients with acute left heart failure admitted to our department from January 2020 to May 2021, including 26 males and 22 females, aged from 61 to 82 years, with an average age of (71.3 ± 5.5) years. There were 6 cases of valvular heart disease, 19 cases of ischemic cardiomyopathy, 7 cases of dilated cardiomyopathy, 10 cases of hypertensive heart disease and 6 cases of acute myocardial infarction with cardiogenic shock. inducing factors: upper respiratory tract infection, fatigued, high or low emotional, defecate force.

Diagnostic Criteria [4]

Refer to the European Society of Cardiology guidelines for the diagnosis and treatment of Acute left heart failure 2020. The clinical manifestations are sudden dyspnea with a breathing rate of 30-40 times per minute, forced position, pale complexion, cyanosis, sweating, irritability, and frequent cough and pink frost-like sputum. Arterial blood gas analysis $PO_2 < 60 \text{ mmHg}$, $S_aO_2 <$

80%. A wide range of blister sounds and wheezes can be heard in the lungs, and galloping horses can be heard in the apex of the heart.

Results

After active rescue, 44 cases were improved and 4 cases died (including 2 cases of acute extensive anterior wall myocardial infarction, 1 case of severe dilated cardiomyopathy and 1 case of severe valvular heart disease with pulmonary infection). The success rate of rescue was 91.67%.

Emergency Care

Body position

Dyspnea, forced sitting, gray complexion, cyanosis, sweating and irritability are common clinical manifestations of acute left heart failure. Due to the rapid development of acute left heart failure patients, the nurse cannot wait for the doctor to see the patient before treatment, but should promptly take the initiative to take effective rescue measures, the nurse should immediately put the patient in a sitting position, legs sagging, keep a natural and relaxed state. And to tell the patient to relax (such as the body and limbs), maintain breathing smoothly, relieve the symptoms of dyspnea and other patients, then patients could get a sense of comfort, reduce the burden of the heart.

Oxygen therapy

Medical staff need to comprehensively analyze the patient's pulmonary signs to keep the patient's respiratory tract unobstructed. Portable sputum suction device can be used to suck out the patient's blocked sputum. After that, oxygen should be given to the patient immediately, before which the flow should be adjusted to prevent the rapid increase of oxygen flow. The damage of alveoli, respiratory mucosa and nose caused by excessive pressure is 2-3L/min at the beginning, which can be improved to 6-8L/min after patients gradually adapt to it [5]. For patients with lung rales, 20%-30% alcohol should be added to the oxygen humidification device first, which so as to remove the foam in the lungs of patients in time and further improve the blood oxygen saturation. If the condition continues to be severe, mask pressurization for oxygen or ventilation support without endotracheal intubation, including continuous positive airway pressure (CPAP) or non-invasive positive pressure mechanical ventilation (NIPPV), and endotracheal intubation and ventilator assisted ventilation should be given when necessary [6]. Ensure that blood oxygen saturation is maintained above 95% to prevent organ dysfunction and even multi-system organ failure (MSOF).

Immediately open two intravenous routes, follow the doctor's advice to use drugs correctly, and observe the efficacy and adverse reactions.

Intravenous indwelling needle 20g trocar was selected to ensure smooth venous access

Sweat easily cause lose sticky tape, patients with restlessness, venous indwelling needle out easily, so it is particularly important

to properly fixed, at the same time in the process of rescue, observing the conditions of patients with venous indwelling needle fixed and reinforcement, which aimed at avoiding slippage phenomenon in a needle, influence the treatment effect, for the repeated liquid leakage, Take deep vein catheterization transfusion as soon as possible. Nurses during the rescue of patients, to keep calm, and skilled operation, so as not to cause injury to patients.

Medication nursing

Accurately use emergency medicine according to the doctor's advice. The oral doctor's advice issued by the doctor during the rescue should be repeated by the nurse and executed after confirmation, and the ampoule should be kept. The rescue process should be rapid, calm and confident, and mistakes should not be made in the busy process. (1) Sedative: preferred morphine 2mg intravenous injection, irritability, dyspnea without improvement, repeated at an interval of 15 minutes, 3-4 times; Using with caution or contraindicate in patients with respiratory depression, chronic obstructive pulmonary disease and shock. (2) Rapid diuretic: Furosemide 20 ~ 40mg intravenous injection, accurately recording of urine volume after administration, which could prevent the occurrence of hypovolemia. (3) Neoactin levosimendan cardiotoxic: Neoactin is a lyophilized recombinant human brain natriuretic peptide synthesized based on DNA recombination technology [7], can effectively reduce the symptoms of heart failure in patients, improving their hemodynamics, and avoiding the effects of oxidative stress. Levosimendan, a Ca²⁺ sensitizer, is a new type of positive inotropic agent, which can increase the contractility of cardiomyocytes and increase myocardial blood flow by promoting K⁺ channel opening. Meanwhile, it has anti-inflammatory effect to inhibit myocardial remodeling [8,9]. Deacetyl acidosiside C 0.2-0.3mg diluted and slowly intravenous injection, especially suitable for atrial fibrillation with rapid ventricular rate. For pulmonary edema caused by supraventricular tachyarrhythmia, slowing heart rate is more important than strengthening heart rate [10]. Meanwhile, heart rate and rhythm were observed. (4) Vasodilators: Most patients with acute left heart failure overexcited sympathetic nerves and significantly increased blood pressure; Using nitroglycerin or sodium nitroprusside pump, rapid hypotension, reducing the load of the heart before and after, which is the successful rescue of severe acute left heart failure complicated with hypertension. The patient's tolerance to the two drugs was different, and the pumping concentration and speed were also significantly different. We started with a small dose, measured blood pressure every 2-3 minutes, and gradually increased the pumping rate. Then after 30-60 minutes, blood pressure dropped to 120-130/60-70 mmHg, with most symptoms relieved. Patients with acute left heart failure complicated with hypotension always have a poor prognosis. The combination of dopamine and m-hydroxyamine was used to maintain blood pressure at 120-130/60-70 mmHg. For patients with refractory hypotension, intra-aortic balloon counterpulsation is used. (5) Aminophylline 0.25 was effective in relieving bronchospasm and had positive muscle strength, vasodilation and diuretic effects. (6) Glucocorticoid: dexamethasone 10~20mg or methylprednisolone intravenous

injection, or hydrocortisone 100mg intravenous infusion, can reduce peripheral vascular resistance, reduce return blood volume and relieve bronchospasm. (7) To prevent concurrent stress ulcer or upper gastrointestinal bleeding: proton pump inhibitors can be properly used.

Application and nursing of intra-aortic balloon counterpulsation
Balloon catheter, counterpulsation host, heparin saline, surgery kit, 1% lidocaine and defibrillator were prepared. Assist the doctor to perform skin preparation and disinfection at the right inguinal area. After local anesthesia, puncture and insert the arterial sheath tube, then introduce the balloon catheter, and fix the external fixator after reaching the position. The external fixator was connected with the aortic sheath, and the balloon counter pulsation catheter was connected with the host to adjust the counter pulsation interval and frequency. The puncture point of femoral artery should be fixed locally with sterile dressing. It is recommended to fix hypoallergenic tape with a width of 5cm and a length of 20-30cm along the longitudinal rear of the thigh to prevent the tube from being pulled out accidentally by forming a tunnel along the thigh skin. Close observation of arterial blood pressure, counterpulsation pressure and waveform; Identify the pulsing site of dorsalis pedis artery, and monitor the degree of fit on the skin, and detect the lower limb ischemia early, once found, report to the doctor for treatment in time.

Condition monitoring

Closely monitor patients' respiratory rate and rhythm, blood pressure, heart rate, oxygen saturation, electrocardiogram, checking blood electrolytes, blood gas analysis, recording incoming and outgoing volume, observing consciousness, mental state, skin color and temperature, changes in lung rales, and dynamically record changes in the condition.

Psychological nursing

During the rescue of critically ill patients, medical staff will have great psychological pressure due to the influence of various factors. These factors include: (1) severe illness and the threat of death; (2) Sudden loss of control over the surrounding environment and personal body functions for a short period of time; (3) Continuous physical examination, even touching the private parts of the body; (4) Suddenly placed in a strange environment; (5) Sound, image and light stimulation generated by the treatment equipment; (6) Stress of ventilator or endotracheal intubation; (7) Language communication barriers, etc. These can lead to a strong "stress response." [7], fear or anxiety can lead to increased sympathetic nervous system excitability, making dyspnea aggravation, increasing blood pressure, increasing cardiac load, which is not conducive to the recovery of patients. Medical personnel could keep calm, when the rescue operation skill, MangErBuLuan, trust and security, and make the patient produces to explain disease patient at the same time, the implement to raise the level of patients with cognitive in this process, nursing staff give adequate care to patients, patients feel the love from the nursing staff, assess the patient's psychological state at the same time, timely adjustment of

psychological counseling, Encourage patients through language, physical contact and other ways to reduce the negative impact of bad emotions. If necessary, a family member can accompany the patient, encourage the patient, provide emotional support, stabilize the patient's mood, reduce the burden of thought.

Safe transport

The emergency patient can be hospitalized only when the symptoms of dyspnea are relieved and the patient's heart rate, blood pressure and respiration are stable. The Ed doctor calls the nurse on duty in the cardiology ward to prepare for the arrival of the patient. Prior to transport, patients should be explained and informed of the risks associated with transport. When carrying patients, we should try to maintain a smooth, gentle and rapid movement to prevent accidents. Transit accompanying staff carrying first-aid kit, nurses always accompany patients, check whether the pipeline flow, the connection kind electric monitor, to ensure that monitoring instrument is normal, closely monitor the patient's blood pressure, heart rate, pulse, consciousness and respiratory symptoms, if there is abnormal, processing, immediately after put the patient ward beds, Immediately transfer the patient's condition and then corresponding management to the attending doctor and nurse.

Early warning nursing

Patients with acute left heart failure tend to have a relatively short history of onset, which the symptoms are already severe when the changes are noticed by the medical staff. Mainly through the standard treatment, the optimization of hospital treatment process to improve patients' symptoms, reducing patient mortality, but the happening of the accident clinical patients tend to have "warning signs", within a few hours before the event can be clinically observed such as breathing, conscious state, heart rate, blood pressure, blood oxygen saturation and the change of physiological indicators of urine [11,12]. If medical staff can detect these data changes in the potentially dangerous period of disease, they can take timely treatment measures and intervene as soon as possible. Our department adopts super-Score early warning score. According to the result of early warning score, early warning treatment is carried out for high-risk patients in advance, which improves the symptoms of patients and reduces the risk of their condition developing into critical illness.

Summary

Acute left heart failure (ARF) is a complicated clinical syndrome, which is an acute cardiovascular disease with high incidence in clinic. The correct application of standardized, standardized and programmed emergency nursing procedures can make correct judgment and evaluation on patients in the shortest time, and give correct and decisive treatment accordingly [13], and skilled business skills and reasonable psychological adjustment and early warning processing in the rescue work is also crucial.

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