Efficacy of High-Quality Intervention with Octreotide Therapy for Acute Severe Pancreatitis: A Study Analysis

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To investigate the effects of high-quality intervention in conjunction with octreotide therapy in treating acute severe pancreatitis. A total of 140 patients diagnosed with acute severe pancreatitis, who received treatment at our hospital from June 2021 to June 2023, were randomly allocated into an observation group and a control group. Both groups were treated with regular interventions, while the observation group received high-quality intervention in addition to conventional symptomatic supportive treatment and octreotide therapy. After a 10 d treatment period, the assessment of treatment effectiveness encompassed factors such as the time taken for symptoms to disappear, patient satisfaction with interventions, and the incidence of adverse reactions. Comparing to the control group, the observation group displayed significant superiority in overall treatment effectiveness ($p<0.05$). Moreover, the observation group exhibited considerably reduced durations for the disappearance of abdominal pain, abdominal distension, nausea, and vomiting, and also experienced a quicker restoration of normal body temperature when compared to the control group ($p<0.05$). Furthermore, patients in the observation group expressed markedly greater satisfaction with interventions during their treatment. The occurrence of adverse reactions, such as leukopenia, anorexia, and rash, was notably lower in the observation group than in the control group ($p<0.05$). High-quality intervention in conjunction with octreotide therapy demonstrates excellent efficacy in managing acute severe pancreatitis. It significantly improves the overall treatment effectiveness, accelerates the resolution of clinical symptoms, enhances patient satisfaction with interventions, and reduces the incidence of adverse reactions. This approach is worth promoting and implementing.

Key words: Octreotide, acute severe pancreatitis, high-quality intervention, clinical efficacy

Severe Acute Pancreatitis (SAP) refers to acute pancreatitis accompanied by systemic and local complications. It is a special condition of acute pancreatitis with a rapid onset, multiple complications, and a high mortality rate[1]. The existing traditional treatment modalities, encompassing systemic support therapy, symptom regulation, and infection management, have fallen short in delivering satisfactory outcomes. In light of this, there is an immediate necessity to explore fresh treatment strategies that can enhance the effectiveness of acute severe pancreatitis[2]. With its multiple proven pharmacological benefits, octreotide has gained considerable attention in recent years, capturing the interest of researchers and practitioners alike. It belongs to the class of glucagon-like peptide-1 receptor agonists, which can increase insulin secretion and inhibit glucagon release, thus regulating blood sugar balance. In addition, octreotide has anti-inflammatory, antioxidant, and pancreatic function protective effects. These effects make octreotide a potential drug for the treatment of acute severe pancreatitis. Furthermore, high-quality intervention plays a crucial role in the treatment of acute severe pancreatitis[3,4]. High-quality intervention encompasses not only basic disease management but also individualized, comprehensive, and coordinated intervention plans to provide holistic care. It emphasizes teamwork, information sharing, and patient involvement, aiming to improve patient's life quality and treatment outcomes. This

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research aims to assess the effectiveness of high-quality intervention in conjunction with octreotide in managing acute severe pancreatitis, as well as investigate its potential mechanisms. Through clinical experiments and data analysis, we aim to validate the efficacy and safety of this treatment[5,6]. The anticipated findings from this study are expected to offer fresh perspectives and treatment approaches for the management of acute severe pancreatitis, ultimately leading to remarkable improvements in patient's quality of life and prognosis. A total of 140 patients with SAP, admitted to our hospital from June 2021 to June 2023, were randomly selected as the study population. They were divided into a control group and an observation group based on different interventions, with 70 patients in each group. In the control group; 44 males and 26 females; aged 28 y to 75 y; disease duration ranged from 2 d to 20 d. In the observation group; 39 males and 31 females; aged 30 y to 74 y and disease duration ranged from 3 d to 21 d. The baseline characteristics of the two groups were found to be comparable, as evident from the absence of statistically significant differences ($p>0.05$)[7-10]. Patients eligible for inclusion in this study were those aged 18 y or older who met the diagnostic criteria for acute severe pancreatitis. The diagnostic criteria included symptoms such as continuous abdominal pain, fever, vomiting, and increased levels of amylase[11]. Moreover, patients were required to display a clear understanding of the study and express their consent by signing an informed consent form. This study excluded patients who had co-existing serious systemic ailments, including cardiovascular diseases, respiratory system diseases, liver or kidney dysfunction. Moreover, individuals with a history of chronic pancreatitis, pancreatic cancer, or those currently receiving treatments that may impact the treatment of acute severe pancreatitis were also excluded from the analysis. Both groups of patients received basic treatments including gastrointestinal decompression, nutritional support, acid-base balance maintenance, correction of electrolyte imbalance, fasting, and anti-infection therapy. The control group received treatment with intravenous infusion of acetic acid octreotide injection (National Medical Products Administration Approval No. H20051570), starting with a subcutaneous injection of 0.1 mg, followed by continuous infusion of 0.6 mg/day diluted in 0.9 % sodium chloride solution for 10 d. Meanwhile, the control group received routine care, which primarily involved providing a comfortable hospital environment, health education, psychological counseling, daily living care, vital sign monitoring, and medication guidance. The observation group received the same treatment with acetic acid octreotide injection and was additionally provided with high-quality intervention[12] as follows; prior to surgery, close monitoring of the patient's respiration, blood oxygen saturation, heart rate, blood pressure, etc., was conducted. In case of the patient's presentation of hypotension, tachycardia, pallor, cool and moist skin, or mental fatigue, the attending physician should be promptly notified, and the necessary preparations for resuscitation drugs and equipment should be made. Acute respiratory distress syndrome is a common complication leading to death in SAP patients and is mainly characterized by hypoxemia, dyspnea, and respiratory distress. To prevent the occurrence of this syndrome, the patient's pulmonary function should be closely monitored, and the respiratory secretions should be promptly cleared to maintain airway patency. The patient should be positioned semi-reclined, and high-flow oxygen therapy through a face mask should be administered. If not treated in a timely manner, SAP can easily lead to shock, which in turn can result in patient death. Therefore, during intervention, timely fluid resuscitation should be administered based on the patient's specific condition. It is important to balance organ function during fluid resuscitation. Close observation of the patient's abdominal condition should be conducted, including recording the intensity, location, nature, and duration of abdominal pain, as well as observing for the presence of abdominal distension. If the patient's abdominal pain worsens or rebound tenderness is observed, the attending physician should be promptly notified if there are signs of worsening condition. Regular monitoring of the patient's white blood cell count, blood amylase, blood glucose, blood gas analysis, electrolytes, etc., should be performed. Changes in blood calcium ion concentrations should be observed, and if blood calcium levels decrease, it indicates the worsening of the patient's condition, and the physician should be immediately notified for symptomatic treatment. Preoperative fasting

effectively reduces the stimulation of acidic foods to the gastrointestinal mucosa and prevents pancreatic protease secretion, thereby reducing pancreatic damage. After surgery, close monitoring of the patient's respiratory rate is crucial. If the patient exhibits signs of respiratory distress, cyanosis, coughing, or excessive sputum production, the attending physician should be promptly notified, and antibiotics should be administered to prevent infection. Nebulization therapy and percussion should also be used to prevent atelectasis and maintain airway patency. Clinical efficacy assessment based on changes in symptoms and laboratory indicators. In marked improvement, within 10 d of treatment, symptoms such as abdominal pain, abdominal distension, nausea, and vomiting disappear, and all laboratory indicators return to the normal range. In improvement, within 10 d of treatment, symptoms such as abdominal pain, abdominal distension, nausea, and vomiting are significantly relieved, and all laboratory indicators show significant improvement. In ineffective, after 10 d of treatment, symptoms such as abdominal pain, abdominal distension, nausea, and vomiting are not relieved or worsen, and there is no change or deterioration in the laboratory indicators. The total effective rate is the sum of the excellent rate and effective rate. In disappearance of clinical symptoms, comparison of the time for disappearance of abdominal pain, abdominal distension, nausea, vomiting, and the time for temperature recovery between the two groups was done. Assessment of psychological care, dietary guidance, intervention quality, intervention attitude, and nurse-patient relationship was done. Each item is scored out of 20, with a total score of 100. A score below 60 indicates dissatisfaction, a score above 60 indicates satisfaction, and a score above 80 indicates very satisfaction.

Satisfaction rate=(Number of very satisfied+number of satisfied)/total number of participants

In drug safety, comparison of adverse reactions such as leukopenia, loss of appetite, and rash between the two groups was done. Statistical Package for the Social Sciences (SPSS) 25.0 will be utilized to perform the statistical analysis in this research. Continuous variables will be reported as mean and standard deviation (x±s) and analyzed using t-tests. Categorical variables will be presented as frequencies and percentages (n %) and analyzed using Chi-square (χ^2) tests. To establish statistical significance, a significance level of $p<0.05$ will be employed. The observation group achieved a notably higher total effective rate (94.3 %) as compared to the control group (82.9 %) ($p<0.05$) as shown in Table 1. The observation group exhibited notably shorter durations for the disappearance of abdominal pain, abdominal distension, nausea, vomiting, and temperature recovery, relative to the control group ($p<0.05$) as shown in Table 2. It indicates a noteworthy difference, with the observation group (95.7 %) showing a higher satisfaction rate than the control group (84.3 %) ($p<0.05$) as shown in Table 3. Table 4 provides detailed information on the incidence of adverse reactions, revealing a substantial contrast between the observation group (4.3 %) and the control group (14.3 %). $p<0.05$, with a significantly lower occurrence in the former. With changes in people's lifestyles and dietary habits, particularly the excessive consumption of high-fat foods and heavy alcohol consumption, the incidence of SAP has shown a significant upward trend. This disease is characterized by complicated conditions, rapid progression, multiple complications, and high mortality rates, which have a severe impact on patient's physical and mental health as well as their life quality[13]. SAP is not a single disease entity but an important stage in the progression of pancreatic diseases. It requires diagnosis and treatment based on the patient's presenting symptoms, along with appropriate interventions. Traditional intervention measures often focus on the disease itself, with interventions aimed only at controlling the progression of the disease. There is often insufficient attention to the patient's psychological well-being. Over time, this can lead to a lack of confidence in the intervention staff and even resistance to intervention treatments, thus affecting the smooth implementation of intervention work. In the application of high-quality intervention, it is essential for intervention staff to always prioritize the patient, strengthen intervention care, ensure the implementation of intervention responsibilities, and improve the level and quality of intervention work. In the specific process of providing care, intervention staff should adhere to the concept of patient-centered care, constantly consider the patient's needs, and strive to meet their basic requirements. Intervention work

should be centered around the patient, with various intervention tasks interconnected, ultimately enhancing patient satisfaction with intervention care and ensuring the smooth implementation of intervention work[14,15]. The findings from this research indicate a marked difference in the overall effectiveness rate between the observation group, which received high-quality intervention, and the control group. This indicates that high-quality intervention can significantly improve treatment outcomes in patients with SAP. Comparatively, the observation group displayed significantly shorter durations for the disappearance of abdominal pain, abdominal distension, nausea, vomiting, and temperature recovery compared to the control group. These findings suggest that patients who received high-quality intervention experienced enhanced alleviation and recovery of clinical symptoms at a faster pace. In addition, the observation group demonstrated a notably higher satisfaction rate among patients who received interventions during the treatment period, emphasizing the beneficial influence of high-quality intervention in improving overall patient satisfaction. Moreover, during the study, the observation group displayed a significantly lower occurrence of adverse reactions compared to the control group. The implementation of high-quality intervention resulted in a marked reduction in adverse reactions like leukopenia, loss of appetite, and rash. These findings indicate that high-quality intervention can effectively minimize the risk of adverse reactions. Despite the potential of high-quality intervention in conjunction with octreotide treatment for acute severe pancreatitis shown in this research, there are still some limitations. Firstly, this study had a single-center design with a relatively small sample size, so multicenter, large-scale studies are needed to validate these findings. Secondly, the follow-up period of this study was relatively short, and long-term efficacy and safety need further observation and evaluation. In conclusion, the management of acute severe pancreatitis has yielded favorable results through the integration of high-quality intervention and octreotide treatment. This comprehensive approach not only improves the overall treatment effectiveness rate significantly, but also accelerates the resolution of clinical symptoms, boosts patient satisfaction with interventions, and mitigates the incidence of adverse reactions. Thus, its expanded application and promotion are warranted.

TABLE 1: CURATIVE EFFECT

Group (n=70)	Marked improvement	Improvement	Ineffectiveness	Overall effective rate
Observation	43 (61.4)	23 (32.9)	4 (5.7)	66 (94.3)
Control	34 (48.6)	24 (34.3)	12 (17.1)	58 (82.9)
χ^2		-		4.516
p		-		0.560

TABLE 2: TIME OF DISAPPEARANCE OF CLINICAL SYMPTOMS (d, x±s)

Group (n=70)	Abdominal pain disappeared	Abdominal distension disappeared	Nausea and vomiting disappeared	Body temperature returned to normal
Observation	4.22±1.22	4.04±1.10	3.40±0.91	4.19±1.27
Control	6.36±1.21	5.87±1.20	4.82±1.13	5.93±1.43
t	10.373	9.368	8.109	7.546
p	0.000	0.000	0.000	0.000

TABLE 3: SATISFACTION SURVEY (n %)

Group (n=70)	Very satisfied	Relatively satisfied	Dissatisfied	Satisfaction rate
Observation	45 (64.3)	22 (31.4)	3 (4.3)	67 (95.7)
Control	35 (50.0)	24 (34.3)	11 (15.7)	59 (84.3)
χ^2		-		5.079
p		-		0.024

TABLE 4: ADVERSE REACTIONS (n %)

Group (n=70)	Leukopenia	Loss of appetite	Rash	Overall incidence
Observation	1 (1.4)	2 (2.9)	1 (1.4)	3 (4.3)
Control	2 (2.9)	4 (5.7)	3 (4.3)	10 (14.3)
χ^2		-		4.155
p		-		0.042

Author's contributions:

Jiao Jiao Zhu and Rui Ma have contributed equally to this work.

Conflict of interests:

The authors declared no conflict of interests.

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