

# Clinical Observation on the Treatment of Severe Acute Pancreatitis

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**ABSTRACT Objective:** To investigate the medical treatment methods, efficacy and progress of acute severe pancreatitis. **Methods:** 60 patients of acute severe pancreatitis in our hospital was selected from October 2014 to December 2014. They were divided into two groups namely, the observation group and control group. The control group was treated by routine western medicine treatment with metronidazole, whereas the observation group received the combined treatment of conventional western medicine with paeonol, rhubarb and other Chinese medicine. After the medical treatment was found to be ineffective, the patients then underwent for surgery. Both groups were observed and compared in terms of the cure rate, death rate, symptom relief time, fever duration, recovery time of intestinal peristalsis and hospitalization. **Results:** The cure rate, symptom relief time and hospitalization time were significantly different between the two groups, with the observation group was significantly better than the control group ( $p < 0.05$ ). **Conclusion:** The usage of metronidazole, Cortex Moutan, rhubarb and other traditional Chinese medicine in the treatment of severe acute pancreatitis (SAP) revealed good clinical efficacy, which is worth to be fostered in clinical application.

## KEYWORDS

Acute severe pancreatitis  
Medical treatment  
Clinical observation

## 1. Introduction

Acute severe pancreatitis also known as SAP refers to the formation of necrosis, cyst, abscess and etc during pancreatitis which may lead to other organ complications such as lung, kidney, brain and heart of the patients. Based on a large number of medical investigations and years of clinical experiences, severe type of pancreatitis accounts for 20% to 40% of all acute pancreatitis patients were observed. The disease was acute, fast-developing and provided serious illness, in which, at the same time may be accompanied by retroperitoneal fibrosis, respiratory failure and other symptoms. Severe conditions may result in multiple organ weakness, which is commonly known as MODS. Acute pancreatitis is one of the common acute abdomens diseases, which is not only affecting the local inflammatory

disease of the pancreas, but also involving other multiple body organs. Severe acute pancreatitis is a kind of disease with high incidence and mortality rate. With the gradual in-depth study on the pathophysiology of severe acute pancreatitis, relevant guide for the medical workers are in urgent need in order to produce medical images that able to estimate forward-looking statement and diagnosis of the disease. According to the statistics, 20% of acute pancreatitis was categorized as acute severe pancreatitis. Patients with severe acute pancreatitis were exposed to life-and health-threatening disease as it was remarked with its high mortality and low curative effects [1]. Therefore, it is crucial to improve the diagnosis system, reduce patient's mortality and increase the quality of life, which is currently giving difficulties for both the medical and academia parties. In our hospital, the internal medicine treatment of acute severe pancreatitis achieved good results and the report was presented as follows.

## 2. Materials and methods

### 2.1. General Information

60 cases of patients diagnosed with acute severe pancreatitis were selected from our hospital in between of October 2014 to December 2014. The patients underwent "the diagnosis and treatment of severe acute pancreatitis

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in China (draft)” as a criterion for the diagnosis of severe acute pancreatitis, and were divided them into observation and control group, respectively. Each group consisted of 30 patients. All the patients were examined by color Doppler ultrasound or CT within 24 h after admission and the results were consistent with the ASP diagnostic criteria determined by Balthazar. Among the 60 patients, 33 were male and 27 were female with the age range was between 21~82 years old and the average age was 47. It was reported that 40 cases of biliary tract disease, 12 cases of irregular diet and 8 cases of other reasons were the main causes of the disease. There were no significant differences in gender, age and course of disease between the two groups ( $p > 0.05$ ).

## 2.2. Treatment

The control group received conventional metronidazole for treatment of anaerobic bacteria infection. On the other hand, the observation group received treatment combination of paeonol, rhubarb, red peony, frankincense, *Viola yedoensis*, YinHu, immature bitter orange, *Magnolia officinalis*, *bupleurum*, *Scutellaria baicalensis Georgi*, *Glycyrrhiza uralensis Fisch* etc. The dose was adjusted according to symptoms, decocted in water and prescribed once daily [2]. Related medical workers regularly trained the two groups of patients with severe acute pancreatitis in order to ensure that their diet, exercise and medication were standardized and reasonable, so that the habits would not affect the disease. Medical professionals refer to the clinical evidence of severe acute pancreatitis through laboratory diagnosis and imaging studies for active intervention treatment and Chinese medicine which combined with surgery in order to reduce the mortality and incidence of severe acute pancreatitis.

## 2.3. Remedy standard

Clinical symptoms and signs disappeared in color Doppler ultrasound, which allowed the blood and urine amylase returned to normal.

## 2.4. Statistical Methods

The data were processed by SPSS 13.0 statistical software. The measurement data were expressed by  $(\bar{x} + s)$ . The data were statistically analyzed by  $t$  test and  $\chi^2$  test, with  $p < 0.05$  was considered statistically significant.

## 3. Results

There were 30 patients in the observation group, of which 26 cases were cured. The cure and mortality rate was 86.7%

and 6.7%, respectively. The average duration of the peritonitis was 4.5 days while the average of fever was 6.64 days. The recovery time of intestinal peristalsis was 3.14 days with the average of hospitalization was 21 days. In the control group, there was 19 cured cases with both cure and mortality rate was 63.3% and 30.0%, respectively. Whilst the average duration of the peritonitis was 9.2 days, the average duration of fever was 13.61 days. Additionally, the recovery time of intestinal peristalsis was 5.38 days with the average of hospitalization was 35 days. The parameters for both the observation and control group namely, the cure rate, mortality, peritonitis alleviate time, duration of fever, recovery time of intestinal peristalsis and hospitalization showed statistically significant difference ( $p < 0.05$ ). The details were reported in the following table:

## 4. Discussion

Severe acute pancreatitis is a common type of acute abdominal clinical symptoms. The disease has high mortality rate, with many complications of serious illness, acute onset and other clinical symptoms, which causes difficulties to medical workers in the treatment process. The cause of the disease is due to the digestion of pancreatic tissue by its own digestive enzymes. The pathological changes were mainly manifested in the “systemic inflammatory response syndrome” due to excessive inflammation. The aggravation of the patient’s disease condition was mainly involving the whole development process of the patient’s mononuclear macrophage, lymphocytes, platelets, endothelial cells, neutrophils, and other types of cells, which resulted in continuous necrosis of patients’ pancreatic tissue and eventually leading to multiple organ damages. According to the statistics, 20% of acute pancreatitis was categorized as severe acute pancreatitis. Severe acute pancreatitis possesses the characteristics of high mortality with low curative effects, thereby making it a serious threat to life and health of the patient. Out of 60 patients included in the study, 40 cases had biliary tract diseases, with 12 other cases were having irregular diets while 8 cases were diagnosed for other reasons. It indicates that severe acute pancreatitis prevailed a great relationship with the biliary tract disease and the irregular diet. The causes of severe acute pancreatitis were generally low perfusion, ischemia and hypoxia., The bile duct was blocked by gallstones under ischemic attack and hypoxia in mild type pancreatitis which was mainly caused by drinking too much alcohol. Eventually, it may develop into pancreatic necrosis and hemorrhage before entering the severe acute pancreatitis stage.

Severe acute pancreatitis caused a significant increase

**Table 1.** Comparison of the clinical efficacy of the observation group and the control group (n).

Group	Cure rate	Mortality rate	Average duration of peritonitis	Average duration of fever	Recovery time of intestinal peristalsis	Average hospitalization
Observation group (n = 30)	86.7%	6.7%	4.5 days	6.64 days	3.14 days	21 days
Control group (n = 30)	63.3%	30.0%	9.2 days	13.61 days	5.38 days	35 days

in vascular permeability, losing large amount of liquid into the third interstitial gap, abdominal cavity and intestine etc. The loss amount of liquid can be reached up to 20–30% of blood volume, or even more. At the same time, inflammation leads to a significant increase in vascular permeability which allowed a serious shortage of effective circulating blood volume [3]. Therefore, early activation of fluid resuscitation is extremely crucial. Gabexate is a small molecule enzyme acts as antagonistic substance. The active ingredient is arginine which is extracted from soybean. Gabexate could inhibit the activity of trypsin, chymotrypsin, elastase and pancreatic lipase. It was reported that this agent allowed the sphincter of Oddi to relax, inhibited the activity of reactive oxygen, enhanced the activity of heparin, increased the blood flow and decreased pulmonary artery pressure [4].

In recent years, the mortality rate was significantly decreased with the rapid development of our national's medical technology. The clinical staffs in the department of internal medicine and the domestic surgical experts in China reached a consensus with respect to the type of treatment and its combination with traditional Chinese medicine for the treatment of the disease. On the basis of conventional western medicine which includes rhubarb and Cortex Moutan with traditional Chinese medicine, treatment of severe acute pancreatitis (SAP) was found to be effective in reducing the mortality rate, improving the cure rate, reducing the average duration of peritonitis, fever, intestinal peristalsis recovery and length of hospital stay. In doing so, the patients recovered at a fast speed. Severe acute pancreatitis with acute inflammation in the reaction period will appear IAH, which is caused by the third gap of the leachate. Peritoneal lavage reduced the incidence of ACS and the body damage of the inflammatory mediators. It further reduced and controlled the development of SIRS. The lavage should be carried out in the condition whereby the pancreatic fluid accumulated and the abdominal pressure increased in order to reduce the formation of fibrous adhesions around the pancreas and eventually affected the lavage. Chinese medicine treatment is not only beneficial to decompress and slow down abdominal infections, but also to increase the likelihood of surgery survival's rate.

Attentions must be made to the internal medicine treatment of early severe acute pancreatitis. Firstly, physicians should diagnose the disease at the earliest so that patients could accept scientific and systematic treatment in time. Secondly, the somatostatin should be used as early as possible in the course of treatment such as drugs of sandosta-

tin. It apparently inhibited the pancreatic enzymes' secretion which protects the pancreatic cells to a certain degree and prevent further complications in patients with systemic inflammatory. Thirdly, severe acute pancreatitis complications was often accompanied by acute hemorrhagic gastritis and other complications, hence early prevention was needed. Fourthly is regarding nutrition support treatment. Early application of nutritional support in patients with severe acute pancreatitis could improve the status of negative chlorine balance and low proteins, and promote the recovery of the body. Finally, actively cooperate with traditional Chinese medicine. The efficacy of Chinese medicine treatment of acute pancreatitis is better and could be applied even in the fasting state. Huang Lian, bupleurum, Scutellaria, *Radix Aucklandiae*, *Radix Paeoniae Alba*, *citrus aurantium*, *Magnolia officinalis*, rhubarb and mirabilite are commonly used in traditional Chinese medicine [5–6]. The combination of Chinese and Western medicine in the treatment of severe acute pancreatitis can effectively reduce the mortality and improve the cure rate.

In conclusion, the usage of rhubarb and cortex moutan in western medical therapy combined with other Chinese traditional medicine portrayed excellent clinical efficacy on severe acute pancreatitis. Obviously, the combined treatment significantly enhanced the patients' quality of life, reduce hospitalization duration with the advantages of high rate of success and could be repeatable. This effective therapy belongs to the minimal invasive treatment of severe acute pancreatitis, with high safety, good effect and easy to accept by patients and their families. The integrative treatment is worth to be promoted into clinical application.

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