A Review of Studies on the Treatment of Severe Acute Pancreatitis

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Abstract: Acute pancreatitis (AP) is one of the common acute abdominal diseases in clinic, and the main mechanism is due to a variety of triggers that activate pancreatic enzymes in the pancreas, and then cause the inflammatory reaction of pancreatic tissue self digestion, edema, hemorrhage and even necrosis, with many complications and a high case fatality rate. Among them, especially severe acute pancreatitis (SAP), often leads to severe complications and even death in patients due to various factors such as prompt medical treatment and misdiagnosis, which is a clinically intractable disease.

Keywords*:* Pancreatitis; Treatment; Review

1. Introduction

Severe acute pancreatitis (SAP), also known as acute hemorrhagic necrotizing pancreatitis, is a special type of AP with an insidious course, severe complications, and high case fatality rate, accounting for approximately 5% - 10% of AP overall [1] 740. Further deterioration of the condition of acute edematous pancreatitis will produce organ failure and last for 48h and above [2], using the new version of the Atlanta classification criteria as a reference, which is based on the diagnosis of SAP with a high mortality rate of 36% - 50% [3], is a recognized and intractable acute and critical illness in the world. Common etiologies include biliary stones, hepatopancreatic sphincter dysfunction, alcohol abuse or overeating. Fever, nausea and vomiting, persistent mid - and upper abdominal drilling pain with radiating to the back are typical clinical findings. The treatment of SAP is mainly performed using the multidisciplinary comprehensive therapy collaborative group (MDT) mode [1] 741, and the clinical routine treatment means are fasting without drinking, gastrointestinal decompression, fluid resuscitation, pancreatic enzyme inhibition, surgical treatment, and so on.

2. Conventional western medicine for the treatment of SAP

Modern Western medicine the diagnosis and treatment of SAP requires the adoption of the multi-disciplinary team (MDT) model, disease stage classification, complex pathophysiological processes and the goal guidance of treatment are different, which all raise higher requirements for the diagnosis and treatment of SAP. Especially, the diagnosis and treatment of SAP, which is characterized by the main features of early organ dysfunction and late infectious complications, means the intersection of multi-disciplinary fields, aims to give advanced life support to patients with SAP, maximize the relief of patient suffering, and reduce complications to symptomatic support treatment.

3. Conservative treatment in Western Medicine

Early onset to week 2 was the first " peak of death " of SAP, diagnosis and treatment strategies and focus points were different between national and international guidelines, Chinese guidelines emphasized the importance of maintaining

function with alternative organs, taking ICU as the main body, nonsurgical treatment as the main body, and the early comprehensive rescue system aimed at preserving organ function was gradually shaped. Lactated Ringer's fluid and normal saline are preferred, the rate of fluid replacement is controlled [4], and the application of a goal-directed fluid therapy pattern in the early stages of the disease is beneficial for the improvement of tissue perfusion and the guidance of fluid intake [5]. Routine use of non steroids, opioids, etc., multimodal combination analgesia such as epidural analgesia, self-controlled analgesia etc. should maximize pain symptoms and potentially improve clinical outcomes in mechanically ventilated patients with SAP. Recent years related studies have shown that enteral nutrition support therapy at the early stage has a promoting effect on the recovery of patients with AP, which is beneficial to the protection of gastrointestinal mucosal barrier, the inhibition of intestinal bacterial translocation, and then reducing the risk of infectious pancreatic tissue necrosis and the occurrence of systemic inflammatory reactions [6-8]. This further shakes up the traditional treatment perspective of Western medicine as " requires strict prohibition of diet so that food can enter the gastrointestinal tract and then further stimulate the secretion of pancreatic juice ", so the new edition of the guidelines recommends that in the event of regaining tolerance of gastrointestinal function, oral or enteral nutrition should be initiated as early as possible (24-72 h after admission). Once again, the treatment means such as gastrointestinal decompression, puncture and drainage, and analgesia can effectively reduce the intra-abdominal pressure, so that the compliance of the abdominal wall increases, to some extent, alleviating the early severe complications in SAP " increased intra-abdominal pressure and organ dysfunction as an important cause of death ", the disease progression of abdominal compartment syndrome (ACS).

4. Surgical treatment in Western Medicine

Surgery still has an irreplaceable leading role in the management of specific types of pancreatitis and severe complications such as infection, necrosis, hemorrhage, and abscess. Mastering the timing and indications of surgery and the choice of appropriate surgical approach has great clinical significance for the treatment of SAP. The Atlanta criteria in 2013 concluded that 3-4 weeks after the onset of SAP, and timely removal of pancreatic and perinecrotic tissue should be performed until the borders of the necrotic tissue parcels have formed. The new surgical principles, while reducing the risk of bleeding and local trauma, also reduce the risk of sepsis occurrence and systemic inflammatory response after surgery [9]. Concurrent infectious pancreatic necrosis in SAP is the first indication for surgery and the need for surgical intervention has become industry consensus. Patients with persistent multiorgan failure and fulminant acute pancreatitis refractory to conservative treatment are surgical indications for debridement of necrotic tissue. Likewise ACS also requires aggressive surgical intervention, the surgical goal of which is in line with reducing intra-abdominal hypertension and increasing abdominal wall compliance. In recent years, new minimally invasive surgical modalities have emerged in layers and a mosaic, gradually gaining mainstream consensus and becoming a research hotspot. Percutaneous catheterization drainage is one of the most widely used minimally invasive techniques. Relevant studies have shown that puncture and drainage can achieve remission of the disease in 62.5% of sepsis cases and 36.6% of cases with organ failure [10]. The trauma transmission therapy, which is based on the step-by-step operation of puncture, endoscopy, endoscopy, and laparotomy, is now the guiding concept of emerging treatment modes for SAP, which minimize the occurrence of local exudation and systemic inflammatory response, maximize debridement, maximize the retention of viable pancreatic tissue, and guarantee exudate drainage and the patency of established channels. But today, where emerging technologies continue to evolve, there will also be concomitant production of new complications, and the modalities of all types of surgical treatment still have their "" sight out of sight. "".

5. Integrative medicine in the treatment of SAP

On the background of possessing modern scientific and technological treatment means such as dialysis, peritoneal lavage, drainage, laparoscopy and intervention, combined traditional Chinese medicine (TCM) treatment technology and the theory of prescription medicine have unique advantages in the therapeutic effect of SAP, and also become a current research hotspot of SAP, which has been sought by many researchers. Weiwei Wang [11], in a clinical randomized controlled trial, applied dahchai Hu Tang combined with continuous blood purification to treat SAP compared with that of Western medicine alone, and found that the biochemical parameters amylase, creatinine, IL-6, TNF in the observation group-α, Serum creatinine and serum amylase levels were significantly lower than those of the control group, and the patients' abdominal distension, disappearance time of abdominal pain, bowel sounds, recovery time of bowel function, defecation time, as well as hospital stay were significantly shorter after treatment than those of the control group. Guo long [12] and others applied a combination of acupuncture and a TCM Decoction, Qing pancreatong Fu Tang, to treat 28 patients with SAP, and the conclusions of the study obtained after treatment by an adequate course of treatment were basically consistent with Weiwei Wang's, and the patients' abdominal symptom disappearance time and related biochemical indexes were shorter and lower than those of the control group treated with western medicine alone.

6. Summary

SAP is a relatively common class of acute abdomen in clinical hepatobiliary pancreaticosplenic diseases, characterized by an acute onset, severe disease, rapid progression, many systemic and local complications, and an extremely high mortality rate, therefore, there is no delay in the development and application of preventive and therapeutic measures for this disease.

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