

Therapy of acute severe pancreatitis awaits further improvement

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Being one of the highly fatal diseases, severe acute pancreatitis (SAP) had a mortality of over 30% before the 90s as documented at home and abroad^[1,2], with large divergence between various therapeutic viewpoints and methods. However, over the recent decades, great changes have taken place in the knowledge of the disease, the prognostic factors become basically clear, thus providing favorable conditions for improving therapeutic methods as well as clinical results. The mortality has been reduced to around 20%^[3].

With pathologic morphological, pathophysiological, biochemical, immunologic and imaging live observations, adequate evidences have revealed that SAP is a systemic rather than a local critical condition. So the prognosis can hardly be changed by merely treating the organ. However, the concrete situation of the individual patient should be considered seriously, be it systemic treatment or local management of the pancreas or peritoneum. What ought to be stressed is the individualized treatment but not a standardized or regularized one.

The clarification of the pathophysiological role of cytokines and other inflammatory media, and the continuous maturation of the SIRS/MODS hypothesis are helpful in the explanation of the natural course of SAP. During the clinical course of most SAP patients, two MODS peaks can be seen. The first one appears in a week after the onset, being nonseptic MODS, and can be recovered through appropriate treatment. The mortality in this stage is reduced significantly in comparison with the past. The second peak usually appears 10 days to two weeks, being septic MODS, with rather high

morbidity and mortality. This is due to necrotizing pancreatic tissue and intraperitoneal infection which is caused by translocation of intestinal flora. As the two MODS events develop on different backgrounds, different methods of treatment should be instituted. Operative intervention will not be beneficial to the first peak, while in the second peak, accurate evaluation of the liquidifying sequestration degree of necrotizing pancreatic tissue, definite location of abscess formation and prompt drainage, and prevention of other complications are of great significance in patient's recovery. The systemic treatment of SAP is actually the treatment of MODS, that should be carried out under intensive monitoring and care, including supportive systemic treatment, prevention and treatment of infection, keeping water, electrolyte and acid-base balance. Trypsin inhibitor can be given earlier, and gastric acid secretion inhibitor given to prevent stress ulcer bleeding. In case of certain organ deficiency, corresponding supportive treatment is mandatory.

Early in the mid 80s, Beger pointed out four prognostic factors of SAP, i.e., the extent of pancreatic necrosis, presence or absence of retroperitoneum invasion, presence or absence of ascites and infection or not of the necrotic pancreatic tissue^[4]. Active and aggressive therapeutic measures pointing to these factors which have been proved by later documents would help increase the cure rate of SAP.

Since the mid 80s extensive researches on the treatment of SAP by integrating traditional Chinese and western medicine has been carried out in this country with significant advances. Systematic reports have been presented by West China Medical University, Dalian Medical University, Harbin Medical University and Tianjin Institute of Acute Abdominal Diseases^[5-7]. Extensive clinical investigations and experimental studies revealed the therapeutic mechanisms of traditional Chinese medicine and the medicinal herbs were mainly the actions on SIRS/MODS and the control by the herbs on peritoneal exudation and absorption^[8,9]. These can be summarized as follows:

1. MODS can be definitely prevented by early use of purgative herbs such as Dachengqi Decoction. Since ileus is very frequently seen in SAP, not only interfering with the evacuation of intestinal contents but also causing multiple reproduction of intestinal

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flora and expansion of endotoxin pools. Restoration of the intestinal motor function through the action of purgative herbs is helpful in reducing the risks of enterogenic infections and enterogenic endotoxemia, the effects and the results have been proved by clinical and experimental studies.

2. Purgative herbs have a significant protection on the intestinal barrier. In all the three types of MODS rat models, i.e., bacterial infection of the peritoneum, mesenteric artery ischemia and reperfusion, and zymogen peritonitis, obvious failure of intestinal barrier could be seen. When *E. coli* labeled with 35S were injected into the intestinal lumen, translocation of the labeled *E. coli* to various viscerae could be detected. If the animal was given Dachengqi Decoction in advance through the gastric tube, translocation of flora would be markedly inhibited.

3. Experimental studies proved the pharmacological actions such as improving the blood supply of intra-abdominal viscerae, reducing inflammatory exudation, promoting remission of inflammation and minimizing abscess formation, of the medicinal herbs with effects of “clearing heat and detoxicating” and of “activating blood circulation and dispersing stasis”.

4. One hundred and forty-six patients with SAP were treated with integrated traditional Chinese and western medicine in Tianjin Institute of Acute Abdominal Diseases. Besides the conventional supportive treatment in western medicine, purgative herbs were administered early; when the abdominal distention was diminished with bowel movements, herbs with effects of “clearing heat and detoxicating” and of “activating blood circulation and dispersing stasis” were used. For patients with surgical indications, corresponding operative procedures were performed. The results of clinical observation revealed that herbal treatment lowered

the incidence of injury of extrapancreatic organs, markedly decreased the incidence of late infections of SAP, and finally reduced the mortality to 16.6%, which is significantly superior to the control group of western medical therapy alone.

In recent years although progresses have been made in the treatment of severe acute pancreatitis, the mortality remains as high as nearly 20%; for a few specially critical cases, effective therapeutic strategies are still lacking; in those cured cases the course was lengthy, usually over 2-3 months, with many complications, thus causing heavy medical expenses; treatment by integrated medicine is at present in the testing stage, more experience in reasonable application of Chinese herbs need to be accumulated.

Facing the forthcoming twenty-first century, I believe that it will be an era of rapid development of medical sciences, in which a new hope will be brought to patients under critical care including those with severe acute pancreatitis, with increase of cure rate and amelioration of sufferings of patients.

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