Management Modalities and their Outcome in Patients of Acute Pancreatitis: A Cross Sectional Study

Anil Akulwar[1], Ajonish Kamble[2], Chandrasekhar Mahakalkar[3], Dhruba Hari Chandi[4]

[1]Professor and HOD, [2]Senior Resident, Dept. of Surgery Datta Meghe Medica College, Nagpur, [3]Professor Dept. of Surgery, [4]Assistant Professor Dept. of Microbiology, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences Sawangi (Meghe), Wardha

Abstract

Background: Acute pancreatitis is a potentially serious condition with wide variation in severity ranging from mild and self-limiting to a rapidly progressive illness leading to multi-organ failure.

Aim and Objective: To study early enteral feeding and their outcome in patients of acute pancreatitis.

Methodology: Present study was a prospective study carried out in 60 patients out of 50 were male (83.3 %) and 10 female (16.6 %) admitted as acute pancreatitis in the department of surgery, Shalinitai Meghe hospital and Research centre, Datta Meghe Medical College, Nagpur. A thorough history was taken and detailed clinical examination was conducted of all the patients on admission. All the patients were subjected to biochemical and Radiological investigations. Radiological investigations like X-Ray chest abdomen and Ultrasonography were carried out initially in all the patients. CT Abdomen performed as per requirement. Severity of disease was accessed on admission on the basis of BISAP scoring system. Conservative management was instituted with early enteral feeding for all patients. All patients who recovered were discharged and followed up on outpatient basis. Data was analyzed with appropriate statistical tests.

Results: All the patients were initially managed conservatively with early enteral feeding. Type of feeding was according to the severity of the illness. Oral in mild / moderate pancreatitis and nasogastric feeding in severe pancreatitis. Mild and moderate variety tolerated enteral feeding well thus need for intravenous infusion was obviated. Out of these, 1 patient (1.7 %) required interventional management due to acute necrotizing pancreatitis. This patient later required intravenous infusion and TPN in view of progressive clinical deterioration due to necrotizing pancreatitis. The management of complications was essentially conservative. Acute necrotizing pancreatitis has a mortality of 100 % even with aggressive management. The overall mortality rate in our study was 1.7% .

Conclusion: Conservative management is the mainstay of treatment in acute pancreatitis. Early enteral feeding obviates the need for intravenous infusion in mild and moderate pancreatitis and in selected cases of severe acute pancreatitis. Early enteral feeding has advantages over Parenteral nutrition and reduces mortality, infectious complications, preventing malnutrition, reduction in length of hospital stay. Early detection and aggressive management of in acute severe pancreatitis can prevent its progression to acute necrotizing pancreatitis and its complications.

Keywords: *acute pancreatitis, enteral feeding, necrotizing pancreatitis*

Corresponding author:
Dr. Anil Akulwar
Professor and HOD Dept. of Surgery
Datta Meghe Medica College, Shalinitai Meghe Hospital and Research Centre Nagpur-441110

Introduction

The 1992 Atlanta Symposium definition of acute pancreatitis is the one widely accepted one. According to it, acute pancreatitis is defined as an acute inflammatory process of the pancreas with variable involvement of other regional tissues or remote organ

systems. At one end of the spectrum is the mild variety of acute pancreatitis, which invariably results in 'restitutio ad integrum' or spontaneous resolution of symptoms and requires supportive therapy only. At the other end is the severe variety which requires aggressive resuscitative and, occasionally, surgical intervention. In accordance with this wide variation in clinical presentation, the treatment of acute pancreatitis requires a multidisciplinary approach. Acute pancreatitis is a hyper-metabolic state marked by increased energy expenditure, proteolysis, gluconeogenesis, and insulin resistance. Nutritional supplementation in acute pancreatitis is complicated by these diverse pathophysiologic derangements associated with the disease. In the past, patients with acute pancreatitis were not given any form of enteral nutrition, because it was believed that any stimulation of the exocrine pancreas would affect the disease course negatively. Now, increasing evidence suggests that enteral feeding maintains the intestinal barrier function and prevents or reduces bacterial translocation from the gut. Studies in patients with severe acute pancreatitis demonstrated that enteral nutrition was well tolerated. Patients who received enteral feedings experienced significantly fewer total complications and had a lower risk of developing septic complications than those receiving TPN. Different scoring systems have been used in acute pancreatitis like I. Atlanta classification, Ranson score, APACHE II scoring system, BISAP scoring, Modified Glasgow scoring, Balthazar scoring, Necrosis score and CT Severity Index (CTSI). Depending on its severity, acute pancreatitis can have severe complications and high morbidity and mortality despite of treatment. While mild cases can be successfully treated by conservative management, severe cases often require admission to intensive care unit and even surgery in selected cases. Management of acute pancreatitis is an aggressive medical management with analgesics for pain control, bowel rest, and intravenous fluids to maintain hydration. Increasing evidence suggests that enteral nutrition may be safe, feasible and even desirable in severe pancreatitis. Enteral nutrition has a benefit over Total Parenteral Nutrition (TPN) in terms of cost, catheter-related complications as well as maintaining intestinal mucosal integrity and avoids the alteration of intestinal mucosal barrier function and intestinal permeability. Radiological imaging advances, new developments in interventional radiology and other minimal access intervention have revolutionized the management of many surgical conditions over the past decades. Today it is recommended that severe pancreatitis be treated in specialized units with multidisciplinary expertise availability with intensive care specialist, interventional radiologist, endoscopist and surgeons.

Aim and Objective: To study early enteral feeding and their outcome in patients of acute pancreatitis.

Material and Methods

Present study was a prospective study carried out in department of surgery At Shalinitai Meghe Hospital and Research Centre, Nagpur, Datta Meghe Medical College, Nagpur. A total number of 60 patients diagnosed as acute pancreatitis during period of July 2019 – December 2020 were entered into the trial.

Inclusion criteria: 1. All the patients diagnosed as acute pancreatitis. 2. All patients who give informed written consent 3. Patients who are ready to follow up.

Exclusion criteria: 1. Patients unwilling to give consent 2. Patients with Chronic pancreatitis

Study was approved by ethical committee of the institute. A valid written consent was taken after explaining study to them. A thorough history was taken and detailed clinical examination was conducted of all the patients on admission. All the patients were subjected to biochemical investigations including a total and differential WBC counts, serum amylase, serum lipase, blood sugars, serum creatinine, serum electrolytes, serum calcium, liver function tests and ascitic fluid or pleural fluid amylase as and when required. Radiological investigations like plain X-ray abdomen AP view, X-ray chest PA view and USG abdomen were done in all patients. CT scan was done as and when required. Medical management was instituted for all patients. All patients were categorized into mild, moderate and severe on the basis of BISAP scoring system. All patients were administers early oral enteral feeding in mild and moderate cases. In severe cases were given Ryle's tube feeding. All the patients received intravenous analgesics and antibiotics along with injectable proton pump inhibitors. Injection octreotide was given to decrease pancreatic secretions. Surgical intervention was carried

out in the form of Open necrosectomy with closed drain placement was done in 1 (1.7%) patient. Out of 11 patients (18.3 %) of biliary tract diseas, 4 patients were having CBD calculi which were managed by ERCP and CBD clearance. All patients were monitored closely with vital parameters, abdominal girth charting, intake/output monitoring and clinically assessed daily to monitor the response of conservative management. All patients who recovered were discharged and followed up on outpatient basis. Data was analyzed with appropriate statistical tests.

Results

In our study, distribution of patients according to age were 22 to 57 years, average age was 43.76 and most common age group was 49 years. 50 (83.3%) patients were male and 10 (16.6%) patients were female, gender ratio was 5:1, male to female respectively. In our study, 60 cases of acute pancreatitis admitted in our tertiary care hospital have been studied over a 2 year period. It is notable that extremes of age show less incidence of acute pancreatitis. Majority of the cases, 60 % were between 40 and 50 years of age. In our study of 60 cases, 50 cases (83.3 %) were male and 10 cases (16.6 %) were female. In our study, alcohol was the etiology in 44 patients i.e. 73.3 % of the patients, biliary tract disease (gall stones) were found to be the cause in 11 patients (18.3 %), trauma to be the etiology in 1 patient i.e. (1.7%), Idiopathic etiologies were found in 4 cases each (6.7 %). Our study found a higher proportion of alcoholic pancreatitis. All the patients presented with pain, 80 % had nausea with vomiting, 60 % had fever, 10 % had breathlessness and 10 % had abdominal distension. In our study, serum amylase was within the normal range in only 10 % of the patients whereas it was raised in 90 % of the patients. Serum lipase was raised in 96.6 % of the patients. In our study 60 % of the patients had BISAP score 0. 25 % of the patients had BISAP score of 1 and 2. BISAP score3 was observed in 13.3 % of the patients.1.7 % patients (1 patient) had a BISAP score of 5. All the patients in our study were initially managed conservatively with early institution of enteral feeding. This included injectable antibiotics and analgesics along with PPI's (proton pump inhibitors). Patient of severe pancreatitis was given enteral feeding through nasogastric tube. 1 patient (1.7 %) were diagnosed with acute necrotizing pancreatitis with relevant clinical features, blood investigations, ultrasound and CT scan underwent surgery i.e. exploratory laparotomy with necrosectomy with thorough lavage and closed drain placement. This patient had MODS (multi organ dysfunction syndrome) and associated pleural effusion. The patient expired due to the above mentioned conditions within 2 days of operative intervention. 18.3 % of the patients had biliary tract pathology but only 4 had CBD calculi. ERCP was done in these patients and the patients recuperated and were discharged. In our study, 75 % of the patients stayed for less than 6 days in the hospital, 14 patients (23.3 %) stayed between 6 and 10 days, and 1 patient (1.7 %) had a hospital stay of more than 10 days. We observed that 98.3 % of the patients recovered and were discharged while 1.7 % of the patients expired.

Table 1: Distribution of acute pancreatitis patients according to complications

Complications	No. of patients	Percentage
Pleural effusion	6	10 %
Acute necrotising pancreatitis	1	1.7 %
Pancreatic pseudocyst	2	3.3 %
MODS	1	1.7%
Total complications	10	16.7 %

Table 2: Distribution of acute pancreatitis patients according to management modalities

Management details	No.of patients	Percentage
Conservative	55	91.6 %
ERCP	4	6.7 %
Exploratory laparotomy with necrosectomy with closed drain placement.	1	1.7 %
Total	60	100 %

Table 3: Distribution of acute pancreatitis patients according to duration of hospital stay

Hospital stay	No. of patients	Percentage
< 6 days	45	75 %
6-10 days	14	23.3 %
10-20 days	1	1.7 %
Total	60	100 %

Table 4: Distribution of acute pancreatitis patients according to outcome of management

Outcome	acute pancreatitis patients
Discharged	98.3 %
Expired	1.7 %

Discussion

In this study, the most common age group for acute pancreatitis was 22 to 57 years. In a vast majority of studies, acute pancreatitis was found to be a male predominant disease.[1] A study by Wig JD et al showed that out of 161 patients, 127 were men (77 %) and 37 (33 %) were women. The higher incidence of women in their study was probably due to gall stones. In our study of 60 cases, 50 cases (83.3 %) were male and 10 cases (16.6 %) were female. None of the female patients had a history of alcohol ingestion. Alcohol related pancreatitis is more common in men[2,3]. Alcohol consumption was found to be the most common cause (75 % of the patients), next major cause being biliary tract diseases 17 %. Trauma as a cause of acute pancreatitis was found in 6 % with idiopathic and iatrogenic causes found in 1 % cases. In a study by Baig SJ et al from Kolkata found alcoholism in 41 %, gallstones in 23.5 %, trauma in 17.6 %, and idiopathic in 11.7 %. In our study, all patients (100%) had abdominal pain as the cardinal feature, 80 % had associated vomiting/nausea and 60% had fever, 10 % had breathlessness and 10% had abdominal distension[4,5]. In the present study, the overall sensitivity and specificity of amylase levels in diagnosing acute pancreatitis were similar to previous published results[6]. In our study 60 % of the patients had BISAP score 0. 25 % of the patients had BISAP score of 1 and 2. BISAP score3 was observed in 13.3 % of the patients.1.7 % patients (1 patient) had a BISAP score of 5. All the patients in our study were initially managed conservatively. All the patients in our study were initially managed conservatively with early institution of enteral feeding. This included injectable

antibiotics and analgesics along with PPI's (proton pump inhibitors)[7-10]. Patient of severe pancreatitis was given enteral feeding through nasogastric tube. Kalfarentzos F et al from Greece showed that enteral nutrition is superior to parenteral nutrition in acute pancreatitis[11-13]. Most of the patients tolerated the oral diet well. Among these patients, 70 % were discharged within 10 days of admission, while the others were discharged within the next 3 days. Mild acute pancreatitis is treated largely supportively and includes the administration of fluids intravenously, analgesics, antiemetic and bowel rest until nausea and vomiting subside. Narcotics are rarely required for pain control. Adequate and prompt i.v. fluid resuscitation is required for the prevention of systemic complications. Fluids are given intravenously to maintain urine output >5 ml/kg of bodyweight. The rate of fluid replacement should be monitored by frequent measurements of central venous pressure in appropriate patients. It is wise to treat every patient aggressively until the disease severity has been established.

Conclusion

Conservative management is the mainstay of treatment in acute pancreatitis. Early detection and aggressive management of acute severe pancreatitis can prevent its progression to acute necrotizing pancreatitis and its complications. Early enteral feeding obviates the need for intravenous infusion in mild and moderate pancreatitis and in selected cases of severe acute pancreatitis. Early enteral feeding has advantages over Parenteral nutrition and reduces mortality, infectious complications, preventing malnutrition, reduction in length of hospital stay.

Conflict of Interest: Nil

Source of Funding: Nil

Ethical Clearance: taken from institutional ethics committee

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