Acute Pancreatitis, Critical Analysis, Diagnostic and Therapeutic Strategies

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With the objective of evaluating the diagnostic criteria and therapeutic options, with particular emphasis on surgical treatment, we retrospectively analysed the record of 14 patients of acute pancreatitis treated over the period of 21 months. We found that no age or sex is immune to this disease although it is more common in 3rd to 5th decade of life and female sex (64.3%). The commonest aetiology is gall stones (57.1%) followed by alcoholism and idiopathic (21.5%) each. There is diversity of symptoms but pain epigastrium is a constant symptom (100%). High index of suspicion and routine use of serum amylase in all cases of upper abdominal pain and ultrasonography is mandatory for early diagnosis which can alter the ultimate outcome. C.T. scanning is best for diagnosing complications. The conservative treatment is successful in majority (64.3%) of patients. However, a good number of cases (35.7%) do develop complications which carries high morbidity and mortality (21.5%), judicial surgical intervention may alter this course. Surgical intervention for associated gall stones is very rewarding. Hence cholecystectomy for associated gallstones is recommended during same admission, after resolution of symptoms.
Key Words: Acute pancreatitis, surgical intervention, cholecystectomy

Acute pancreatitis remains a subject of great controversy and continues to pose difficult problems for surgeons responsible for its management[1]. The clinical manifestation of acute pancreatitis may vary from mild self limiting disease to most dreadful disease with local and systemic complications. Therapy in acute pancreatitis is primarily conservative with surgical intervention for the management of associated gallstones and complications[2] like pancreatic necrosis, abscess and pseudocyst formation.

This retrospective study was undertaken to analyse our own experience and evolve therapeutic strategies for future management of this disease with special reference to surgical intervention, timing for cholecystectomy and optimize patient care and salvage critically ill patients with this life threatening disease.

Material and Methods

This retrospective analysis of records of the patients with acute pancreatitis managed in North Surgical Ward, Mayo Hospital, Lahore, from Jan. 1997 to Sept. 1998. These patients were diagnosed on clinical grounds, confirmed by biochemical tests, ultrasonography and C.T Scan in selected cases. The four fold rise in serum amylase was considered as diagnostic of acute pancreatitis. In cases where serum amylase turned out to be normal but there was strong suspicion of acute pancreatitis, diagnosis was based on urinary amylase, serum lipase and findings of ultrasonography and C.T Scanning. In a single patient where diagnosis was in doubt exploratory laparotomy was carried out and the diagnosis was established.

All patients were managed conservatively by nasogastric suction, , fluid and electrolyte replacement, analgesia, IV antibiotics (3rd generation cephalosporins), O_2 inhalation and TPN in cases of severe and prolonged illness. Surgical intervention was carried out to deal with gallstones in same admission or at a later stage (after 6 - 12 weeks) and to manage complications of acute pancreatitis. The patients with severe disease requiring ventilatory and other organ support were managed in intensive care unit. They were carefully monitored for failure of conservative treatment and development of complications.

All these patients once considered fit enough (usually 7 - 10 days) were started on oral feeding. Patients were discharged home and regularly followed up in outpatient clinic. Ultrasonography was repeated where indicated. Two of our cases were admitted again through emergency with reoccurrence of acute pancreatitis.

Results

A total of 14 cases with acute pancreatitis were admitted during Jan. 1997 to Sept.1998. Majority of them were females and most of the cases were in their 3rd to 5th decades of life as shown in fig. I & II respectively.

Fig No.1: Sex Distribution

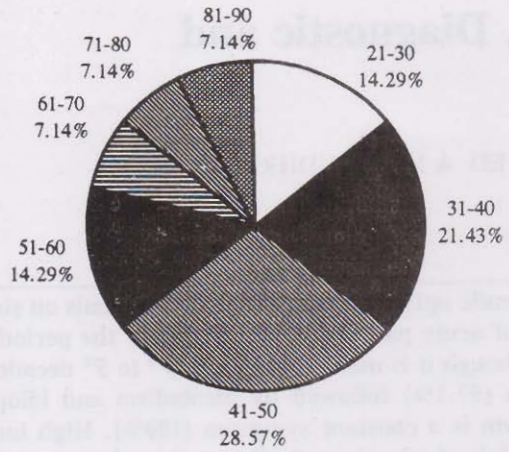

Fig. No: 2 Age distribution (in years)

The commonest presenting symptom was pain epigastrium and rest of the symptoms and sign are shown in Table 1

Table I Clinical Presentation

Symptoms & Signs	n=	%age
Pain epigastrium	14	100
Abdominal Distension	08	57.1
Nausea & Vomiting	07	50.00
Absolute constipation	01	07.10
Dyspnea	02	14.30
Epigastric tenderness	09	64.30
Shock & ARDS	01	07.10

The results of serum amylase were helpful in 10(71.4%) cases but turned out to be normal in 3(21.5%) cases and was not available in one case. Gall stones were the main share holder amongst the etiological factors followed by alcoholism and idiopathic group. Their relative incidence is shown in Fig No.3.

Fig No.3: Etiology of acute pancreatitis.

The surgical intervention was carried out in 04(28.61) cases for management of gallstones, when patient settled down conservatively. Cholecystectomy was performed during same admission (between 5-7 days). In 03(21.5%) cases surgical intervention was required as result of failure of conservative management and development of complications. In a case where diagnosis was in doubt, was diagnosed acute pancreatitis on exploratory laparotomy.

Another group of patients consisted of 05(35.7%) cases which were managed conservatively and discharged home when settled. In this group the interesting feature was that 02 out of 03 patients with gallstone disease, presented in emergency in 3-6 weeks time, one with recurrent attack and another with complication of acute pancreatitis. In both of these cases surgical intervention was carried out during this admission. The various surgical procedures performed are shown in Table No.2.

Table No.2: Surgical Procedures

Operation	n=	%age
During first admission		
Cholecystectomy	04	38.6
Exploratory laparotomy	01	07.1
Necrosectomy	01	07.1
Open drainage of abscess	03	21.5
During Second Admission		
Cholecystectomy	01	07.1
Exploratory Laparotomy (Cholecystectomy &Open drainage of cyst)	01	07.1
Cystogastrostomy	02	14.3
Aspiration of abscess	01	07.1

A case of 82 years old female presented with pancreatic necrosis was in toxaemia and multiple organ failure, not considered fit for any surgical intervention and died on 5th day. The various complications which were encountered during this study are shown in Table 3. The result in this table shows severe acute pancreatitis carrying very high morbidity and mortality rate.

Table No. 3 Complications of acute pancreatitis

Complications	n=	%age
Pancreatic necrosis	02	14.3
Pancreatic Abscess	03	21.5
Pseudocyst	03	21.5
Sepsis & ARDS	02	14.3
Toxaemia & MOF	01	07.1
Mortality	03	21.5

The comparison of the patients with gallstones disease shows the clear benefit of cholecystectomy during same admission, as shown in table 4. Although this is very small number for statistical significance and needs confirmation in large study.

Table No. 4. Comparison of patients with gallstones

Complication	Cholecystectomy First admission n=4	Cholecystectomy 6-12 weeks time n=3
Recurrent attack of acute pancreatitis	0	2
Pseudocyst	0	1
Mortality	0	0

Discussion

Pancreatitis does not respect the boundaries of class, race and gender. The diagnosis of acute pancreatitis is always challenging for the clinicians and clinical picture may mimic with many other abdominal emergencies. High index of suspicion is required to recognise its presence early. Determination of serum pancreatic enzymes remains the gold standard for the diagnosis of acute pancreatitis[3]. The ultrasonography is not only helpful in diagnosis but also very useful to point out etiology[4]. C.T Scanning remains the mainstay for diagnosis of severe pancreatic disease[5]. In spite of all these investigations a fraction of cases are still diagnosed on laparotomy[6].

Therapy in patients with acute pancreatitis is primarily conservative with aggressive resuscitation, nasogastric suction, analgesia, antibiotics [7]and majority of cases do respond to this treatment. Nonetheless either because of failure of medical treatment some patient do develop lethal complications. The care of these patients requires multidisciplinary approach involving personnels in surgery, internal medicine, radiology, intensive therapy and nursing. In spite of this the severe disease carries a very high morbidity and mortality[8].

The surgical intervention is required to deal with associated gallstones and complications of acute pancreatitis. Timing for cholecystectomy is another area of controversy. Traditionally patients with gallstone pancreatitis were managed conservatively during acute attack and then readmitted for elective cholecystectomy, 6-12 weeks later. The reason for this was to allow peripancreatic inflammation to settle completely but it carries a risk of recurrent attacks of pancreatitis. At the other hand the cholecystectomy had been performed within 48-72 hours but this carries very high mortality[9]. It seems reasonable that the patients who are recovering should be allowed to settle completely before cholecystectomy is undertaken, before discharge from the hospital, usually between 5th to 10th day of conservative treatment[1,10].

Another area of surgical intervention is management of ductal calculi. However only a small minority of patients are found to have an impacted stone[11], usually the passage of a small stone through the ampulla is sufficient to precipitate an attack. The endoscopic sphincterotomy has established its place for management of ductal calculi[12] but fortunately there was no case of ductal calculi in our study. The fact that mostly it is passage of a small stone or cholestrol crystal which can precipitate the attack, one wonders whether the patients in idiopathic group especially females (microlithiasis or occult gallbladder disease, which may be the underlying etiology) should they be advised cholecystectomy[13].

Timing and choice of the appropriate non operative or surgical management of pancreatic necrosis , abscess and pseudocyst is another critical point. Our aim should be identification of these patients early by various prognostic indicators like the Ranson's Criteria or other scoring systems and therapy is mainly directed towards the support of failing systems. The decision of intervention is based on expert surgical judgement and supported by biochemical and radiological investigations. These dreadful complications carries very high mortality, proper and timely surgical intervention may tilt balance in favour of patients' survival.

Conclusion

Acute pancreatitis is a life threatening condition. High index of suspicion is required for early diagnosis which can alter the ultimate outcome. Calculus gall bladder disease remains the major etiological factor, cholecystectomy should be performed during same admission.

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