



Research Article

STUDY OFFACTORS CONTRIBUTING TO ACUTE PANCREATITIS

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ABSTRACT

Background: The incidence of acute pancreatitis varies in different part of world and depends upon etiological factors. Incidence of gallstone pancreatitis is more in north india and males are affected more than females. This present study was undertaken to examine the various factors involved in acute pancreatitis .

Methods: 100 patients were admitted esic hospital basaidarapurnew delhi. During the period march 2018 to march 2019. This study comprised of 76 males and 24 females. The youngest patient was 22 years old and the eldest patient was 65 years old. The average age for total study group was 39.5 years. Postoperative cases of acute pancreatitis were not included within this study.

Results: The mortality rate for acute pancreatitis was 12.0% Age, hypotension, tachycardia, fever, abdominal lump and abnormal lung findings correlated with increased morbidity and mortality. Leucocytosis was a common finding in patients with severe disease and was one of the most important parameters in prognosis. The other important abnormalities found are alteration in serum A.S.T. (SGOT) Amylase, Lipase L.D.H. L.D.H. in particular was found to be the most useful single marker of severe disease. High bilirubin was more pronounced in patients with gallstone etiology.

Conclusion: The proper management of severe acute pancreatitis required understanding of its natural history and lots of patience. Laboratory markers may be useful to better quantify the severity of disease in patients with acute pancreatitis.

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INTRODUCTION

Acute pancreatitis is a reversible inflammatory process of the pancreas. Although the disease process may be limited to pancreatic tissue, it also can involve per pancreatic tissues or more distant organ sites. Acute pancreatitis may occur as an isolated attack or may be recurrent. It has a variety of causes and can range in severity from mild to severe and life threatening. pain is usually the cardinal symptom. Pain may vary from mild and moderate discomfort to severe, constant and incapacitating distress. Characteristically, the pain, which is steady and boring in character, is located in the epigastrium and per umbilical region and often radiates to the back as well as to the chest, flanks and lower abdomen. Pain may be felt differently throughout the abdomen. The pain is frequently more intense when the patient is supine, and patients often obtained relief by sitting with trunk flexed and knees drawn up. Nausea, vomiting and abdominal distension due to gastric and intestinal hypo motility and chemical peritonitis are also frequent complaints.

Vomiting is often frequent and persistent, and retching may persist despite the stomach being kept empty by nasogastric aspiration. Hiccoughs can be troublesome. Most attack of acute pancreatitis are mild and settle promptly on conservative treatment. However, approximately 25% cases are severe with a significant risk of progression to potentially lethal complications. Early clinical assessment of the severity or potential severity of acute pancreatitis is very much difficult. Severe attacks are identified correctly at the time of admission by experienced clinicians in only 34-39% of patients Obesity is an important prognostic factor, and large fat deposits in the per pancreatic and retroperitoneal spaces may increase the risk of peripancreatic necrosis, abscess formation and death. The international symposium in 1992 determined that organ failure was the most important indicator of severity of acute pancreatitis. The prognosis for the patient is closely related to the number of organs that have failed. Organ system failure complicates up to 92% of deaths and failure of more than one organ greatly increases the risk of death.^{5,6}

METHODS

100 patients were admitted at Department of Surgery, ESIC Hospital Basaidarapur new delhi march 2018 march 2019. This study comprised of 76 males and 24 females. The

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youngest patient was 22 years old and the eldest patient was 65 years old. The average age for total study group was 39.5 years. Postoperative cases of acute pancreatitis were not included within this study. A thorough physical examination was done. This included general survey, local and systemic examination. On analysis of the patient's complaints and physical examination, a tentative diagnosis was made from the possible differential diagnosis. Various laboratory investigations, routine and special, were undertaken. These include routine examination of blood (Total and differential counts and Hb %); urine and stool. Biochemical studies were done in the department of Biochemistry in this institution and also from other laboratories. Blood sugar, blood urea, serum creatinine, serum albumin, serum bilirubin, serum lactic dehydrogenase (LDH), serum aspartate aminotransferase and serum calcium were estimated. Serum lipase was studied only in eighty fourcases. Serum amylase estimation was done as a routine procedure in all case of acute pancreatitis. Serum amylase study was done as a routine procedure in all emergent admission with acute abdomen like acute pancreatitis, peptic perforation, intestinal obstruction, colicky pain, and abdominal distension. Straight x-ray was also done for follow-up cases particularly those with abdominal lump like phlegmon or pseudocyst of pancreas. Straight x-ray of abdomen was done in the hospital in all emergent cases. X-ray chest was performed in all patients with acute pancreatitis to demonstrate any pulmonary pathology like, pleural effusion, basal atelectasis, and pulmonary oedema mainly of the left side. E. C. G. was done for moderate and severe attack i. e. in forty patients Ultrasonography was done for almost all patients with acute pancreatitis and subsequently for detection of local complication e.g. phlegmon, pseudocyst or abscess. C.T. Scan was done for selective cases (thirty cases) as it is expensive and it was advised upon clinical diagnosis of peripancreatic fluid collection, pseudocyst, pancreatic necrosis, and pancreatic abscess.

RESULTS

Table 1 Prognosis of Acute Pancreatitis in relation to Age and Sex

Age In years	Sex		Mortality	
	male	female	Male	Female
21-30	16	02	00	-
31-40	24	04	02	00
41-50	30	16	04	02
51-65	06	02	02	02
Total	76	24	8	4

Table 2 Relation to Etiological Factors

Etiological factor	No of patients	Mortality
Alcoholism	66(66%)	08(08%)
Biliary tract disease	14(14%)	02(02%)
Idiopathic	18(18%)	02(02%)
Blunt Trauma	02(02%)	00(00%)
Total	100(100%)	12(12%)

Table 3 Prognostic Value of Laboratory Examination

Laboratory Features	Significant Value	Admission & First Hospital Day	Admission & First 4 th Hospital Day	Entire Hospital Course
White blood cell	>15000/mm3	38(38%)	18(18%)	08(08%)
Serum Amylase	750-1000U/L	100(100%)	84(84%)	20(20%)
Serum Lipase	100->400 U/L	100(100%)	86(86%)	20(20%)

Serum Bilirubin	>3mg/dl	24(24%)	18(18%)	08(08%)
Serum LDH	>350i.u/L	28(28%)	26(26%)	18(18%)
SGOT	>250U/L	36(36%)	28(28%)	08(08%)
Serum Calcium	<8mg/dl	06(06%)	06(06%)	02(02%)
Blood Sugar	>200mg/dl	22(22%)	16(16%)	04(04%)

Table 4 Mortality associated with complication

Complications	Total no of patients	Mortality rate
Respiratory Failure	06(06%)	04(04%)
Renal Failure	08(08%)	02(02%)
Pseudocyst	16(16%)	04(04%)
Pancreatic	02(02%)	02(02%)

DISCUSSION

Hundred patients were admitted Department of Surgery, ESIC Hospital Basaidarapurnew delhi During the period March 2018 to march2019. The mortality rate for acute pancreatitis was 12%. Majority of patients analysed in this study had addiction to alcohol 66 %. Biliary tract disease was present in 14% of cases. 18% had neither history of alcoholism nor biliary tract disease i.e. idiopathic group and 2% had a history of blunt trauma. The mortality rate for the alcoholic group (08%) was higher than idiopathic group that of (2%) or that of biliary tract disease also (2%). Failure to make the diagnosis has important implications when attempting to define mortality rates and the statement that they continue to fall must be treated with caution. Thus the fall in mortality rates from 17.8% in 1961 to 5.8% in 1985 in Scotland⁷ has to be taken in conjunction with the fact that no less than 42% of patients dying from acute pancreatitis in Glasgow Royal Infirmary within this period had their disease diagnosed for the first time at autopsy.⁵⁷ Similarly, 35% of the fatal cases in Bristol were diagnosed for the first time at autopsy, case mortality remaining at around 20% throughout the study.^{8,9} It is clear that we have no ground for complacency regarding our ability to diagnose and treat acute pancreatitis. Foster and Ziffren reported a high mortality of 86.9% in a group of 23 patients with acute pancreatitis and shock.¹⁰ Facey *et al*, Elliot and Ranson, all reported that, in most instances, hypotension did not present in the face of vigorous intravenous replacement. Marshall L. J. and Daggett reported greater than 39% mortality among the 33 patients who presented with asystolic blood pressure less than 90 mmHg. In this present series, there was 40% mortality among the 20 patients who presented with a systolic blood pressure of less than 90 mmHg, though the usual measures were taken to correct hypovolemia. Black reported fever as a presenting sign in 75% of the group of 250 patients with acute pancreatitis. Marshall L.J. and Daggett *et al* reported that 142 patients (27%) had an initial temperature greater than 101°F and 20% of these patients died.¹¹ In the present series 23 patients (23.95%) had an initial temperature greater than 101°F and 30.45% of these patients died. The aforementioned studies do not selectively address the question of surgical treatment of those severely ill patients with acute pancreatitis who continue to deteriorate despite maximal medical treatment. These patients might benefit from any of several therapeutic modalities currently under evaluation. These included peritoneal lavage, subtotal pancreatectomy and the use of anti-enzyme preparation. Kivilaakso *et al* 1981 reported their experience of early surgery in 30 severely ill patients (mean age 37.4 years). Most of the operations were distal pancreatic

resections and the overall mortality was 37%.¹² This is comparable to the results in reports of conservatively managed patients. They subsequently compared early surgery (distal pancreatic resection) to peritoneal lavage performed through catheters placed around the pancreas at laparotomy (Kivilaakso *et al* 1984).¹³ The mortality was less in the respected group (4 from 18, compared to 8 from 17 in the lavage group) although the number were small. The authors analysed the patients according to the extent of pancreatic damage. In general, the more extensive the damage the higher is the mortality. This early direct surgical intervention is seldom advocated in older patients but in younger severely ill patients, not responding to conservative management, it still has a place. No such trial was given in the present series. Only a small portion of all patients with pancreatitis have such severe disease and the experience quoted above is difficult to repeat.

CONCLUSION

In patients with severe disease, changes occurred in almost any of the major body systems. Biochemical and haematological abnormalities; renal, circulatory, and respiratory failure and sepsis in and around the pancreas have been found to be significant contributory factors to morbidity and mortality. No single parameter, clinical recording, biochemical or haematological test was found to be consistently accurate in its prognostic value. The proper management of severe acute pancreatitis required understanding of its natural history and lots of patience.

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