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Clinical profile of patients with Complications of Acute Pancreatitis in a tertiary care hospital.

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Abstract:

Title:
Clinical profile of patients with Complications of Acute Pancreatitis in a tertiary care hospital.

Materials and Methods:
This was a prospective, observational study, conducted in patients with complications of acute pancreatitis, at a tertiary care hospital during the period of May 2020-Oct 2022. Patients who were above 18 years of age, were admitted in the hospital and who presented or developed any complications in acute pancreatitis were included.

Results:
Patients in our study were treated with octreotide early phase along with symptomatic relief before necrosectomy, even though use of octreotide in treatment of acute pancreatitis is controversial as per the studies. As per our study, late surgical intervention did not change the overall outcome and mortality in patients of pancreatic necrosis neither did octreotide which was used early phase. Patients of pancreatic necrosis showed highest mortality amongst all other patients of local complications and post necrosectomy patients had highest incidence of post operative complications.

Conclusion:
It is crucial that health professionals know the main complications of acute pancreatitis, since this pathology can direct different outcomes for the patient, including death. Therefore, it is necessary to correct sorting and classification of these patients, in order to promote early diagnosis and timely intervention which may reduce the development of complications but may not reduce the mortality.

Keywords: Acute Pancreatitis, Complications of Acute Pancreatitis, Pancreatic necrosis.

INTRODUCTION:

Incidence of acute pancreatitis has increased worldwide recently. Acute pancreatitis is defined as the development of acute inflammation of normally existing pancreas. It may be the first attack or relapsing attack with an apparently normal gland in between. Pancreatitis is one of the most devastating conditions of abdomen.

Common causes of acute pancreatitis are biliary stone diseases, alcohol, trauma, ERCP, drugs, autoimmune diseases, scorpion venom, biliary ascariasis, clonorchis sinensis, vascular diseases.

The most common cause of death in these patients is multiorgan dysfunction syndrome (MODS). Mortality in pancreatitis has a bimodal distribution. In the first two weeks known as early phase, and after two weeks, also known as the late period, often caused by septic complications.

MATERIALS AND METHOD:

This was a prospective, observational study, conducted in patients with complications of acute pancreatitis, at a tertiary care hospital during the period of May 2020-Oct 2022. Patients who were above 18 years of age, were admitted in the hospital and who presented or developed any complications in acute pancreatitis were included. Acute pancreatitis was diagnosed by both radiological and biochemical method. The permission of Institutional Review Board was taken to carry out this study. This study was performed in indoor patients. Written and informed consent was also taken from all the patients included in this study and confidentiality of all data was maintained. All these selected cases were observed from admission to 6 months following discharge on regular follow-up visits and by telephonic talks. Data was recorded in Excel sheets and relevant statistical tests were applied.

Exclusion Criteria:

Patients who didn't develop complications of acute pancreatitis.

Patients whose diagnosis of acute pancreatitis was not confirmed by radiological and biochemical methods.

Patients not giving written and informed consent. Patients not meeting inclusion criteria

Aims and objectives:

To study various systemic and local complications of Acute Pancreatitis.

To study different management modalities of complications of Acute Pancreatitis.

RESULTS:

30 patients with complications of acute pancreatitis were included in the study. Majority of patients with Acute

Pancreatitis were seen in the age group of 31 to 40 years. Out of 30 patients, 18 patients had alcoholic pancreatitis, 8 patients had biliary pancreatitis, and 4 patients had mixed causes. 24 patients were male and 6 patients were female.

Table 1 - Incidence of local complications in acute pancreatitis

Sr No	Local Complications	Number Of Patients (N = 30)	Percentage (%)
1	APFC (Acute pancreatic fluid collection)	12	40
2	Pseudocyst	10	33.33
3	Pancreatic Necrosis	06	20
4	Pancreatic Ascites	01	3.33
5	Pancreatico-pleural fistula	01	3.33

Majority of the patients in our study had Acute Pancreatic Fluid Collection as its complication while incidence of Pancreatic Ascites and Pancreatico-pleural Fistula was lowest.

Table 2 - Incidence of systemic complications of acute pancreatitis

Sr No	Systemic Complications	Number Of Patients	Percentage (%)
1	Pleural Effusion	08	26.66
2	Encephalopathy	01	3.33
3	ARDS	03	10
4	Acute Renal Failure	02	6.66
5	Hypocalcemia	02	6.66
6	Hyperglycemia	02	6.66
7	DIC	01	3.33

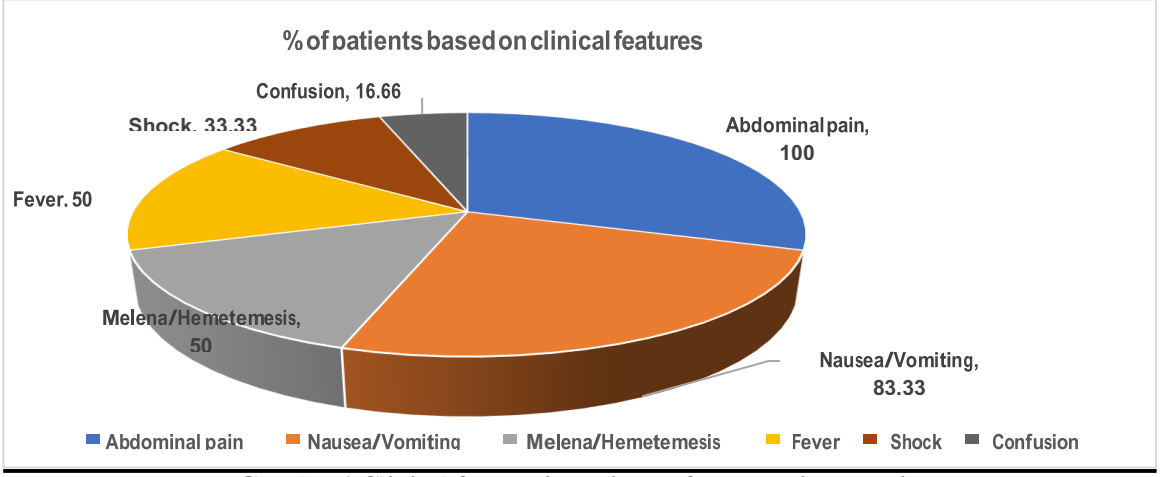
Abdominal pain was the most common presentation in APFC patients, followed by nausea and vomiting, and fever. Along with abdominal pain, nausea, and vomiting, malena and hematemesis were noted in 03 (30%) patients of Pseudocyst. One patient of pseudocyst had breathlessness.33.33% of patients of pancreatic necrosis presented to us with signs of shock like tachycardia, tachypnoea and hypotension. All patients of pancreatic necrosis presented with generalised abdominal pain having epigastric tenderness and even rigidity in few cases.

Table – 3 Management of complications of acute pancreatitis

Sr. No.	Local Complications	Number Of Patients (N = 30)	Conservative Management	Percentage (%)	Surgical Manage ment	Percentage (%)
1	APFC	12	09	75	03	25
2	Psuedocyst	10	03	30	07	70
3	Pancreatic Necrosis	06	00	00	06	100
4	Pancreatic Ascites	01	01	100	00	00
5	Pancreatico-pleural fistula	01	01	100	00	00

Table – 4 Presence of systemic complications in patients with local complication

Sr No	Local Complications	No Of Patients	Systemic Complications						
			Pleural Effusion	Encepha-lopathy	ARDS	ARF	Hypo Calcemia	Hyper Glycemia	DIC
1	APFC	12	0	0	0	0	0	0	0
2	Pancreatic Pseudocyst	10	3	0	0	0	0	0	0
3	Pancreatic Necrosis	6	4	1	2	1	1	1	1
4	Pancreatico pleural fistula	1	1	0	1	0	1	0	0
5	Pancreatic Ascites	1	0	0	0	1	0	1	0



Graph – 1 Clinical feature in patients of pancreatic necrosis

Table – 5 Mortality among patients managed by conservative and surgical approach in patients with local complications

Sr No	Local Complications	No Of Patients (N = 30)	Conservative Management	Mortality (%)	Surgical Management	Mortality (%)
1	APFC	12	09	0	03	0
2	Pseudocyst	10	03	0	07	3.34%
3	Pancreatic Necrosis	06	00	0	06	6.67%
4	Pancreatico pleural Fistula	01	01	3.34%	00	0
5	Pancreatic Ascites	01	01	3.34%	00	0

Table – 6 Post operative complications in surgically managed patients

Sr No	Local Complications	Surgical Management	Postoperative Complications			
			Bleeding	Infection	Recurrence	Death
1	APFC	3	0	2	1	0
2	Pseudocyst	7	1	3	0	0
3	Pancreatic Necrosis	6	3	5	3	2

Most common post operative complication among surgically managed patients was wound infection.

DISCUSSION:

This was a prospective, observational study which included 30 patients with complications of Acute Pancreatitis, at a tertiary care hospital during the period of May 2020 – Oct 2022. Patients were followed for 6 months after discharge.

Acute pancreatitis is a complex gastrointestinal disease with various etiologies, most frequent being biliary and alcoholic. In our hospital, we had mostly alcoholic and biliary pancreatitis. In the study done by Ajay Kumar, showed biliary pancreatitis (47%) as the most common cause for acute pancreatitis. The second most common cause was found to be alcoholism (35%).[1]

The complications of Acute Pancreatitis depend on the severity of disease which is stratified by organ failure, local complications and systemic complications.

In our study, most commonly encountered complication was Acute Pancreatic Fluid Collection with an incidence of 40% followed by Pseudocyst of pancreas with an incidence of 33.33%. Pancreatic necrosis was seen in 20% of the patients with pancreatic ascites and pancreatico-pleural fistula being seen in only 3.33% of the patients. In the study done by Mohammed et.al., found that (40%) patients had only acute fluid collections detected by either USG or C.T. scan and all were treated conservatively. 8 (20%) patients had acute necrosis confirmed on contrast enhanced C.T. scan. 4 (10%) patients had infected pancreatic necrosis and 2 (5%) cases had Pancreatic Abscess, 2 patients had pancreatic fistulae. All these patients underwent surgery. [2]

In our study, 75% of patients of Acute Pancreatic Fluid Collection were managed conservatively, while 25% required surgical management. Surgical intervention included percutaneous drainage of fluid collection. Conversely, 70% of Pseudocysts were managed surgically by open cystogastrostomy as operative procedure of choice while rest 30% were managed conservatively which included symptomatic treatment of patients. All the patients of Pancreatic Necrosis were surgically managed with open necrosectomy being the preferred one. All the patients of Pancreatic Ascites and Pancreatico-pleural Fistula were managed conservatively by insertion of ICD (Intercostal drainage) tube. Patients of pancreatic ascites was managed conservatively by radiologically guided percutaneous drainage of ascitic fluid and were treated with somatostatin analogues.

Sanjeev Kumar, et.al. in their study showed that, 66.67% patients were managed conservatively and 33.33 % underwent surgical intervention (pigtail, necrosectomy or both). There was no significant difference in the outcome of the patients managed either conservatively or surgically. [3]

Santvoort, et.al. had conservative management in 62% and surgical intervention in 38% patients and concluded that primary catheter drainage improves outcome in patients with infected pancreatic necrosis and concluded that postponing necrosectomy is associated with decrease mortality but increased hospital stays. [4]

In our study, the most commonly seen systemic complications were Pleural Effusion seen in 26.66% of the patients followed by acute respiratory distress syndrome seen in 10% of the patients. There was 6.66% incidence of Acute Renal Failure, Hypocalcemia, and Hyperglycemia each. Disseminated Intravascular Coagulopathy and Encephalopathy was seen in 3.33%.

Mohammed, et.al. in their study had 15 patients with pleural effusion, mainly on the left side. None of them required aspiration. 8 patients had basal atelectasis.; both closed spontaneously with conservative management for 4 to 6 weeks. 6 patients had ARDS evident on the X – rays of chest and required mechanical ventilation. 5 patients had acute renal failure (ARF); 3 of which required haemodylasis. [3]

Sanjeev Kumar, et.al. in their study showed that 33.3% patients in their study were in shock and required ionotropic support, 43.33% had respiratory failure, 36.67% had renal failure and 26.66% had multiorgan failure (MOF) at admission. [2]

In our study highest incidence of systemic complications

were present in patients of pancreatic necrosis, majority of them developing pleural effusion. Patients of pseudocyst and pancreatico- pleural fistula were more prone to develop pleural effusion with incidence being 30% and 100% respectively. 16.66% of the patients with pancreatic necrosis developed encephalopathy.

In patients of Pseudocyst, incidence of mortality was 0.14% of those who were surgically managed. In patients of Pancreatic Necrosis, incidence of mortality was 42.85%. In patients of Pancreatico-pleural Fistula, 3.33% mortality was seen while 0.15% mortality was seen in patients of Pancreatic Ascites. Overall mortality was high in those patients where surgical intervention was done, but also the severity of illness was high in those cases.

The most common cause for mortality was MODS, which was similar in the study by Ramu R, et.al.[5]

In patients of Acute Pancreatitis patients managed surgically, wound infection was the most common post operative complication followed by recurrence and bleeding. In our study, one of our patients of pancreatic necrosis who underwent necrosectomy in late phase developed post necrosectomy complication of septic encephalopathy leading to death.

Mohammed, et.al. in their study had 2 patients had wound dehiscence and 1 patient had deep vein thrombosis (DVT).[2]

Though early necrosectomy has been advised in various studies, as per our study, it shows that patients undergoing late necrosectomy had lower rates of recurrence compared to those undergoing early surgery.

Alsfasser G, et.al. opined in their study, that a highly conservative approach in necrotizing pancreatitis results in significantly lower mortality and open surgery should be reserved for concomitant intra-abdominal complications.[6] Buchler MW, et.al. concluded that in patients with severe infected necrosis, surgical treatment is preferable.[7]

Patients in our study were treated with octreotide early phase along with symptomatic relief before necrosectomy, even though use of octreotide in treatment of acute pancreatitis is controversial as per the studies. As per our study, late surgical intervention did not change the overall outcome and mortality in patients of pancreatic necrosis neither did octreotide which was used early phase. Patients of pancreatic necrosis showed highest mortality amongst all other patients of local complications and post necrosectomy patients had highest incidence of post operative complications.

CONCLUSION:

It is crucial that health professionals know the main complications of acute pancreatitis, since this pathology can direct different outcomes for the patient, including death. Therefore, it is necessary to correct sorting and classification of these patients, in order to promote early diagnosis and timely intervention which may reduce the development of complications but may not reduce the mortality.

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