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General Medicine

CLINICAL PROFILE OF ACUTE PANCREATITIS –A RETROSPECTIVE STUDY

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ABSTRACT The research study was designed to recognize the clinical picture of acute pancreatitis in the Indian patients to evaluate common etiologies, role of investigations, and outcome of early conservative and surgical management. This retrospective study was conducted in 40 patients of acute pancreatitis admitted in BVDU&MC, Sangli during the period of one year from Jan 2017 to Dec2017.The data was collected and observations were made with regard to clinical presentation, sex distribution, common etiology, complications, its severity and common blood parameters especially sr. amylase and sr. lipase. Alcohol and gall stones are still common etiological factors of acute pancreatitis. Most commonly observed complications of acute pancreatitis are acute abdominal distension, acute necrotizing pancreatitis, pseudocyst of pancreas .Mortality is more in patients having more Ranson's score.

KEYWORDS : acute pancreatitis, retrospective study, sr. amylase and sr. lipase

INTRODUCTION:

Acute pancreatitis is a common disease with an annual incidence ranging from 5 to 80 per 100 000 population1. Acute pancreatitis is an acute inflammatory process of the pancreas with varying involvement of the other regional tissues or remote organ system. It is a common cause of acute abdominal pain requiring hospital admission. The attack is mild in about 80% of patients who will show marked improvement in first 48 hours. In some 20% patients however it is often severe with high morbidity and mortality.

Clinical Features of Acute Pancreatitis are abdominal pain, nausea, vomiting, hiccoughs and abdominal distention2. Abdominal pain develops quickly, reaching maximum intensity within minute and persist for hours or even days. Pain will be constant in nature, experience first in epigastrium, radiating to back in 50% of cases. It is refractory to the usual dose of analgesics and constant in nature and intensity. Nausea and vomiting are usually marked accompaniments. Vomiting is often frequent and persistence. Hiccoughs can be troublesome and may due to gastric distention or irritation of diaphragm. Abdominal distention occurs as a result of paralytic ileus, ascites and pseudocyst of pancreas. Bowel sounds are usually diminished during an attack of pancreatitis and the abdomen may become distended and tympanic. On general examination patient may be gravely ill with profound shock, toxicity and confusion, tachypnea, tachycardia, hypotension, mild icterus. Icterus may be present due to biliary obstruction or in gall stone pancreatitis[3,4].

Etiology of Acute Pancreatitis are alcoholism, gall stone, hypertriglyceridemia, pancreatic ischemia, drug induced, hyperparathyroidism, hypercalcaemia, trauma, ERCP, mechanical obstruction, pancreas divisum, autoimmune, hereditary, infectious, malnutrition, scorpion bite and pregnancy. Chronic ethanol abuse and gall stones account for 70% of cases of acute pancreatitis. . If etiology is gallstone, cholecystectomy is essentia[5].

Acute pancreatitis and related complications are systemic inflammatory response syndrome, compensatory anti-inflammatory response syndrome, and multiple organs dysfunction syndrome. Local complications include acute fluid collection, pancreatic necrosis, acute pseudocyst, pancreatic abscess, paralytic ileus, pancreatic effusion, and pancreatic ascites. Pathologically there are two types of pancreatitis, interstitial and necrotizing. Pathophysiological mechanisms include micro circulatory injury, leucocyte chemo-attraction, release of pro and anti inflammatory cytokines, oxidative stress, leakage of pancreatic fluid into the areas of pancreas, bacterial translocation to pancreas and systemic circulation.[3]

About one fourth to one third of the acute severe pancreatitis patients die from the disease, for a total mortality of 2-10%. After the second week patients succumb due to the pancreatic infection associated with multi organ failure. There appears to be an increase in the incidence of acute pancreatitis. This rise has been attributed to increased alcohol consumption and high calorie food consumption but may well reflect improved diagnostic capability during this period.

According to revised ATLANTA criteria 2012 acute pancreatitis is classified into Mild -No organ failure & no local complications ,Moderate -Transient organ failure < 48 hrs with and without Local complications and Severe -Persistent organ failure > 48 hrs. Local complications include acute peripancreatic fluid collection, pancreatic pseudo cyst, acute necrotic collection, pleural effusion. Organ failure defines failure of 3 main organs, respiratory, cardiac, renal and other organ systems (hepatic, hematological, neurological.[6]

The severity of acute pancreatitis can be predicted based upon clinical, laboratory, and radiologic risk factors, various severity grading systems, and serum markers. Some of these can be performed on admission to assist in triage of patients while others can only be obtained during the first 48 to 72 hours or later[7].

Table no 1: Ranson's criteria were carried out at admission or diagnosis of acute pancreatitis patients by following points[8],

At admission or diagnosis	During initial 48 hrs
Age over 55 years	Hematocrit fall greater than 10% points
White blood count over 16,000/cu mm	Blood urea nitrogen rise more than 5 mg/dl
Blood glucose over 200 mg/dl	Arterial Po2 below 60mm Hg
Serum lactic dehydrogenage (LDH) over 350 U/l	Serum calcium below 8 mg/dl
Serum AST over 250 U/l	Base deficit > 4 meq/l
	Estimated fluid sequestration > 6000ml

Table no. 2 Glasgow imrie criteria for acute pancreatitis, 3 or more factors present of the below in first 48 hrs indicates a severe attack of acute pancreatitis[9]

PaO2	< 8KPa
Age	>55 years
Neutrophils	>15 X 109/L
Calcium	< 2mmol/L
Renal function	Urea > 16mmol/L
Enzymes	LDH> 600iU/L /AST >2000iU/L
Albumin	< 32g/L
Sugar	Glucose > 10 mmol/L

Scoring system is to predict the severity of acute pancreatitis. Ranson and Glasgow score both the systems, is classified as severe when 3 or more factors present and are helpful in prognostic assessment of acute pancreatitis5,9.Ranson's criteria has a very high false-positive rate, with a sensitivity of 75%, specificity of 77%, positive predictive value of 49%, and negative predictive value of 91%. The score obtained with each criterion correlates with mortality (score: ≤3, 5% mortality; 3–5, 10% mortality; ≥6, more than 60% mortality and more complications from AP) [10]

Table no. 3 Modified CT severity index [II]

Prognostic indicator	Points
Pancreatic inflammation	
Normal pancreas	0
Intrinsic pancreatic abnormalities with and without inflammatory changes in peripancreatic fat	2
Pancreatic or peripancreatic fluid collection or peripancreatic fat necrosis	4
Pancreatic necrosis	
None	0
≤ 30%	2
>30%	4
Extra hepatic complication (one or more of pleural effusion, ascites, vascular complications, parenchymal complications, or gastrointestinal tract involvement)	2

MATERIALS AND METHODS:

This was a retrospective observational study conducted on patients admitted in General medicine department of BVDUMC&H Sangli during the month period from Jan. 2017 to Dec 2017. The total 40 patients of acute pancreatitis were studied (n=40). The data was analyzed and observations were made regards to clinical presentations, sex distribution, common etiology, common blood parameters, imaging evaluation, severity scoring, complications and mortality.

METHODS:
Inclusion Criteria12:-
Patients with diagnosis of acute pancreatitis selected. All patients were assessed, managed either conservatively or surgically. The findings were recorded in a proforma. Proforma was designed to record the history, chief complaints, alcohol consumption, physical examination, investigations and management. The clinical presentation, associated medical conditions, laboratory and radiological investigations, severity, management and outcome were studied.

Exclusion Criteria:-
Patients with other causes of acute abdominal pain were excluded from the study. Patients with chronic pancreatitis (history of chronic abdominal pain/ maldigestion with weight loss /radiological evidence of chronic pancreatitis) and immmuno compromised patients were excluded.

The attack was categorized severe if three or more of the parameters were present during the first 48 hours of the admission as described by Ranson's et al.8 Patients with Ranson's score >3 and those were serious co morbidity were admitted to ICU and monitored. All patients had full blood count, full blood chemistry including serum amylase, lipase, liver function test, lipid profile, renal function test, sr. LDH level, Sr. calcium, blood sugar and ABG. All patients had undergone with imaging investigation like ultrasonography or CT abdomen. CT

abdomen was done where it is necessary for diagnosis. All patients were treated conservatively initially with intravenous fluid, analgesics, nil orally and antibiotics and monitored for complications and treated accordingly. Most important point was also taken into consideration of conservative management.

3. OBSERVATION AND RESULTS:
Table no. 4 Age and sex distribution:

Age distribution	Male	Female	Total
20-30	1	0	1(2.5%)
31-40	15	1	16(40%)
41-50	7	1	8(20%)
51-60	10	0	10(25%)
61-70	4	1	5(12.5%)

The table shows that most of the patients(40%) were between the age group of 31-40 years and male's patients are more as compared to female.

Table no. 5 Distribution of patients according to Etiology

Etiology	Male	Female	Total percentage
Alcohol	37	0	92%
Gall stones	0	3	8%
Idiopathic	0	0	0%

Table shows that alcohol consumption was the major cause in 37 males (92%) and another cause was gallstones in 3 females (8 %).

Table no. 6 Clinical features of acute pancreatitis

Signs	Number of cases
Abdominal pain	35 (87%)
Abdominal distension	15 (37%)
Fever	14 (35%)
Jaundice	15 (37%)
Vomiting	24 (60%)
Dyspnea	10(25%)
Shock	6 (15%)

According to this table the most important clinical feature of acute pancreatitis was abdominal pain in 35 patients (87%) and least signs are shock observed in 6 cases (15%).

Table no. 7 Serum amylase level in acute pancreatitis

Sr. amylase	Number of cases
< 130 (normal)	14 (35%)
131-260	10 (25%)
261-390	7 (17%)
>390	9 (22%)

35% patients were found normal serum amylase and 22% patients observed above risk level.

Table no.8 Serum lipase level in acute pancreatitis

Sr. lipase	Number of cases
<60	3 (7%)
60-200	13 (32%)
201-340	10 (25%)
>340	14 (35%)

7% patients were found normal serum lipase and 35% patients observed above risk level.

Table no. 9 Serum bilirubin in acute pancreatitis

Sr. biliirubin	Number of cases
Normal	25 (62%)
Raised	15 (38%)

Sr. bilirubin level found normal in 62% cases and 38% cases showed

raised level of sr. bilirubin.

Table no.10 USG finding in acute pancreatitis

USG finding	Number of cases	Percentage
Bulky pancreas	20	50%
Echogenic pancreas	16	40%
Necrosis of pancreas	4	10%
Cholelithiasis	3	7.5%
Ascites	15	37.5%
Echogenic liver	25	62.5%
Pseudocyst	1	2.5%

CECT Abdomen

Though contrast enhanced computerized tomography (CECT) abdomen is most valuable tool for diagnosis of acute pancreatitis and its local complication. Out of 40 patients, only 10 had undergone these investigations since it is costly and rest of the patients could not afford it. The modified CT severity scoring of these patients ranges from 4-8. Mortality was more in patients having higher score.

Table no. 11 Complications in acute pancreatitis

Complications	Number of cases
Acute necrotizing pancreatitis	4 (10%)
Pseudocyst	1 (2.5%)
Acute abdominal distension	15 (37%)

Acute abdominal distension was found in 37% and very less complication pseudocyst found in 2.5% cases.

Table no. 12 Ranson's score in acute pancreatitis

Ranson's score	Number of cases	Severity
< 2	30 (75%)	Mild
3-5	6 (15%)	Moderate
≥6	4(10%)	severe

According to Ranson's score in acute pancreatitis 75% cases shows mild severity, 15% cases shows moderate severity and 10% cases show severe severity.

The principles of conservative management followed in each case were adequate analgesia, correction of fluid and electrolytes imbalance, complete GI tract rest & Antibiotics. Octreotide, somatostatin analog was used in all patients. In this study Octreotide was found helpful in producing symptomatic relief and promoting recovery in mild to moderate acute pancreatitis. But not much helpful in severe cases of acute pancreatitis. Thirty seven patients treated conservatively, surgical intervention was done in one patient with pseudocyst of pancreas and two patients of cholelithiasis.

DISCUSSION:

According to the 2006 guidelines of the American College of Gastroenterology (ACG), the diagnosis of acute pancreatitis requires the presence of at least two of the following: 1) abdominal pain typical, 2) amylase and/or lipase more than three times the normal and 3) characteristic findings on imaging examinations (ultrasonography, abdominal computed tomography - CT, magnetic resonance imaging)[13].

A consecutive series of 352 patients with acute pancreatitis admitted to Clinic of Digestive Surgery, Geneva University Hospital, revealed 67 patients (19.03%) as normoamylasemic. Thus, hyperamylasemia is a highly sensitive but not specific biochemical indicator of the disease. Values three times above normal are almost specific. In our study 22% patients had serum amylase level more than three times the normal value[14].

Serum lipase is only secreted by the pancreas and thus better specificity and sensitivity. In acute pancreatitis, serum lipase level may be elevated more consistently and for longer half-life than serum amylase. In this study 35% patients had serum lipase level more than three times the normal value.

USG is the cost effective and reliable investigation for diagnosis of acute pancreatitis as well as its complications. Computed Tomography revealed all the features of Acute Pancreatitis and also, complications like necrotizing pancreatitis.[15]

Studies on acute pancreatitis based on the Western population disease reveals that severe disease is characterized by organ failure. 20% to 30% of all patients will have a severe clinical course of the complications such as necrosis, pseudocyst or abscess and 95% of deaths will occur in this subset. In this study, a significant number of patients (25.0%) developed organ dysfunction or local complications (50%). Four patients (10%) having high Ranson's score, high CT severity index and more local complications and organ failure died in this study.

CONCLUSION

Acute pancreatitis is a serious disease with a high mortality rate, but with a very good quality of life reported among survivors with proper 'therapy intensity'. There is a slight male preponderance, with maximum age incidences below 45 years .Among the males; alcoholism is the most common etiological factor, because addiction of it is more common in males. While biliary tract disease is the most common factor in females, because gall bladder stone is more common in fatty, fertile females of forty. Most cases of pancreatitis have a self-limiting course but its severity should be determined on early disease process. Serum lipase is the best biochemical indicator of the disease. Peripancreatic fluid collection and necrotizing pancreatitis is predictor of severity of pancreatitis on USG and CT scan finding.

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