Original Article

AN AUDIT OF MANAGEMENT OF ACUTE PANCREATITIS

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ABSTRACT

OBJECTIVE: To evaluate the clinical presentation in different age and gender groups ,risk factors and outcome of management of patients with acute pancreatitis in surgical unit of Aziz Fatima hospital.

DESIGN: Prospective study.

PLACE AND DURATION OF STUDY: Aziz Fatima surgical ward, February 2011 to March 2014.

SUBJECT AND METHODS: Data was compiled for the above said period comparing age, occupation, gender and symptoms. Furthermore assessment of severity and differential outcomes in response to the conservative management along with applied surgical options were studied.

CONCLUSION: There is no link between age, gender, etiology, and severity of symptoms in acute pancreatitis. Prediction for local or systemic complications is difficult. Conventional conservative approach for the management of acute pancreatitis has got worth; temptations for early intervention should be resisted until unless there are definite indications for exploration.

INTRODUCTION:

Majority of patients admitted in hospitals having gastrointestinal disorders suffer acute pancreatitis (AP). Mainly caused by gallstones and overuse of alcohol (Lankisch, Apte and Banks, 2015), with the passage of time number of patients of this disease are increasing leading towards an urge of effective management. Diagnosis and management of acute pancreatitis is a major challenge for doctors both in surgical and medical ambits. Almost all available guidelines are equivocal in management of acute pancreatitis. It has a high mortality & morbidity rates.

Pancreatitis is a common non-bacterial inflammatory disease caused by activation, interstitial liberation and auto-digestion of the pancreas by its own enzymes. The process may or may not be accompanied by permanent morphological and functional changes in the gland (Gerard et al., 2003).

There are four formulated theoretical mechanisms of its pathogenesis,

1. Obstructive hypersecretion e.g., pancreatic Ca .
2. Duodenal reflux e.g., galls stone pancreatitis.
3. Bile reflux
4. Acinar cell derangement e.g. hyperlipidemia, vascular damage, anoxia, trauma, drugs, etc.(AL-Fallouji,1986)

Improvements in the understanding of the natural history of acute pancreatitis have led to an evolution in the surgical management of patients with acute pancreatitis. In particular, the indications for intervention have been more precisely defined (Glagerc and Mann, 1998; Uhl et al., 2002).

In acute pancreatitis variable interventions can be practiced like, ERCP, sphintrotomy, cholecystectomy and necrosectomy. All these options should be executed with caution as they increase mortality and morbidity especially hemorrhages.

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Recent evidences suggested that in cases of severe pancreatitis, early prophylactic antibiotics decrease the incidence of septic complications and there may be a corresponding decrease in mortality rate (Powell et al., 1998). It was aimed to determine the role of frequently applied conservative approach in the management of acute pancreatitis.

MATERIALS AND METHODS:

A prospective study was conducted at department of general surgery Aziz Fatima hospital Faisalabad over a period of 3 years (February 2011- March 2014). The study included only patients referred to surgical unit with different age groups, gender and symptoms. All patients who had upper abdominal pain with raised serum amylase (3 times than normal) and swollen pancreas on USG were included in this study. We did not include children below 12 yrs and those with severe acute pancreatitis were also excluded from the study.

The patients were admitted with detailed history followed by thorough examination, relevant biochemical tests and imaging studies. Further the assessment of severity of pancreatitis was made according to Ranson's criteria. All patients were resuscitated, they were made pain free by giving appropriate pain killers (narcotics and non-narcotics depending upon severity of pain). They were put on prophylactic antibiotics and suction and drip as per the requirements. All patients were given sandostatin.

Operative options used in our study were as follows

- Cholecystectomy 18(45%) patients.
- Cholecystogastrostomy 4(10%) patients.
- Necrosectomy 2(5%) patients.
- No operation 16(40%) patients.

STATISTICAL ANALYSIS:

Nonparametric analysis of variance (Kruskall-Wallis Test) was used to compare data with Co Stat co Hort 6.4 software.

RESULTS:

Statistical data (at P<=0.05) showed significant differences for age of the patients under study. Variable probability of this disease was observed in each age group. Maximum number of patients was of second age group (21 to 30 years) that was almost double than other age groups. Second to that was the age group of 41 to 50 followed by two groups (31-40 and 51-60) with similar number of patients. Minimum were the patients by age above sixty followed by the youngsters below twenty (Fig. 1)

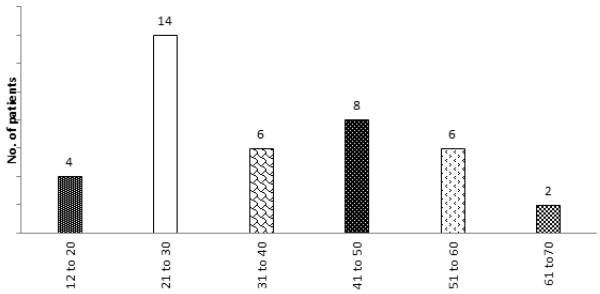

Fig. 1: Comparison of the age groups of patients of acute pancreatitis admitted for the period of three years in surgical ward of Aziz Fatima Hospital.

Gender difference was also marked for patients of this disease where male patients were with higher ratio as compared to females (Fig. 2)

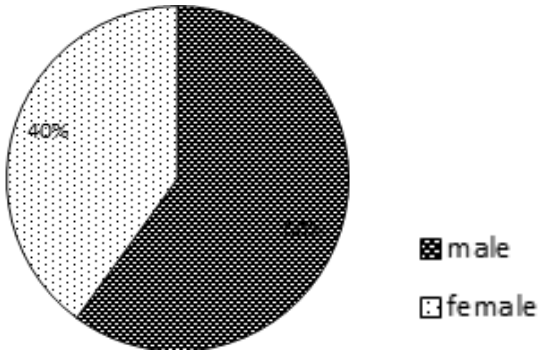

Fig. 2: Comparative frequency of patients with the symptoms of acute pancreatitis with respect to gender data collected for the occupation showed that greater percentage of the patients of acute pancreatitis belongs to business class (Fig 3)

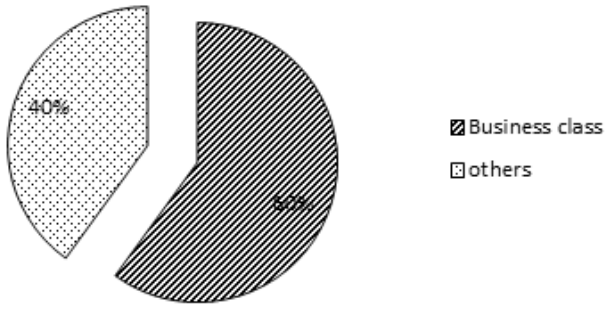

Fig.3: Comparative frequency of patients with the symptoms of acute pancreatitis with respect to occupation

Data for symptoms of all patients also manifested significant difference. Patients with the complaint of abdominal pain and vomiting were greater than the patients having constipations or other symptoms including fever/ dyspnea (Fig.4).

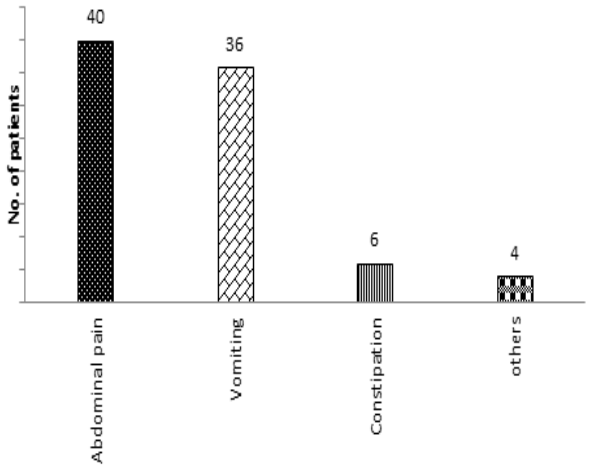

Fig. 4: Symptomatic comparison of patients of acute pancreatitis admitted for the period of three years in surgical ward of Aziz Fatima hospital.

When causes of pancreatitis were assessed out, 18 patients (45%) had gall stones, 2 patients (5%) confessed for alcoholic intake, rest of the patients (50%) we could not make any reason for pancreatitis. (Fig. 5)

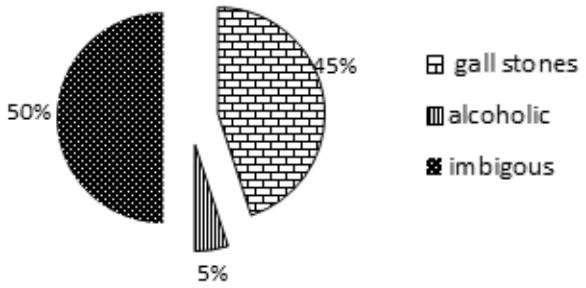

Fig. 5: Causes of acute pa patients under study

Ultrasonographic imaging study was with variable local and systemic findings differing significantly (P<=0.05). All patients had pancreatic oedema. Whereas 45 % had gall stones,25 % had pseudocyst, ascities and hepatosplenomegaly and only 5% had plural effusion (Fig. 6)

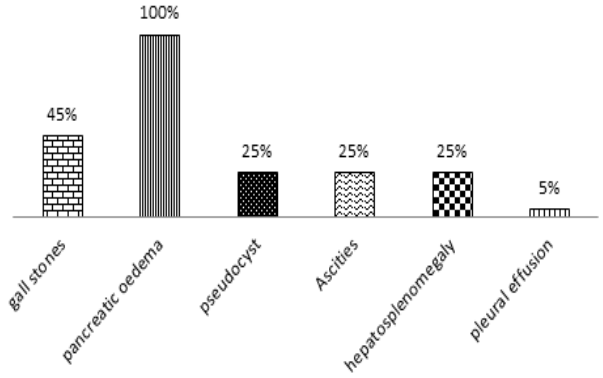

Fig. 6: Ultrasonographic findings of all patients under study

Imaging study via CT scan; Out of 40 patients only in 22(55%) we could get CT scan done, in rest of the cases either it was not deemed necessary or idea was dropped because of poor compliance from patients. Amongst those 22 patients CT scan based findings were as under.

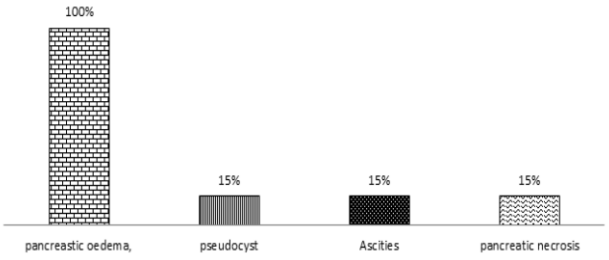

Fig.6: Findings of CT scan in 22 patients (out of 40)

Biochemical profile:

Serum Amylase was raised (three times) in all patients. Serum calcium was done in 34 patients at the time of admission 6(15%) patients wasted their specimen; in 6 patients there was hypocalcaemia, in 28(70%) calcium was normal. Hemoglobin was found normal in all (100%) patients. Bilirubin was raised in 8(20%) cases. Prothrombin time was prolonged in 2(5%) cases. APTT remained normal in all patients (100%). For the assessment of severity different scoring systems are in practice like Ranson's criteria,APACHE-11, III, Glasgow criteria, Balthazar scoring in our study we followed RANSON,S criteria (Table 1)

Surgical intervention:

Cholecystectomy (open or laparoscopic depending upon choice of the patient) was offered to 18 (45%) patients, who had gall stones, once there symptomology was settled after 3 weeks of discharge from the hospital. Four (10%) patients later on developed pseudocyst and became symptomatic. These patients were admitted and cholecystogastrostomy was performed on them. Two (5%) patients got deteriorated and became septic .when CT was done it showed pancreatic necrosis. Both of these patients were explored and necrosectomy was performed in multiple sessions, along with antibiotics cover these patients were also kept in ICU for extensive nursing care, till they resumed their normal wellbeing (Table 2)

Table 1: Ranson,s criteria

At the time of admission	Within 48 hr. of admission
Age >55yr TLC >1600 cell/mm Blood sugar>10mmol/l S/AST>250iu/l S/LDH>350iu/l	Calcium<8 mg/dl HCT FALL >10UNIT/C OXYGEN<60mmhg BUN>5mg/dl Base deficit>4mg/l Seq of fluid>6 liters

DISCUSSIONS

Pancreatitis is seen in infancy if it is due to congenital anomaly (annular pancreas/ pancreatic divisim) and in childhood if due to familial genetic disorder (Gerard et al., 2003; Monnwill et al. 2010).In literature very little data is available for rest of age groups who could get afflicted with acute pancreatitis. In our study (Fig. 1) maximum incidence of acute pancreatitis was between 21 to 30 years of age.

Male patients mostly had alcohol induced pancreatitis while females had biliary pancreatitis. Nonetheless severity did not directly correlate with gender (Lankisch et al., 2001). In current study we could find no association between gender and severity /outcome of the disease (Fig. 2).

Table 2: Operative procedures performed in our patients.

Procedure performed	No. of patients (%age)
Cholecystectomy	18 (45%)
Cholecystogastrostomy	4 (10%)
Necrosectomy	2 (5%)
No operation	16 (40%)

Previously it was observed that patients of acute pancreatitis had severe upper abdominal pain which radiates to back with associated retching and vomiting (Gerard et al., 2003). Currently all patients were with upper abdominal pain. Other symptoms included vomiting ,constipation,dyspnia and fever (Fig. 4).

Most common causes of pancreatitis are biliary calculi (50-70%) and alcohol (25%). Idiopathic group should not be more than 20% (Bhattacharya, 2008). In our study 45% were biliary pancreatitis that matches with previous

findings but results of alcoholic and idiopathic groups were in contrast with previous observations. May be it was concealment of alcoholic intake and non-availability of ERCP and EUS which inflated these findings.

Role of imaging is either to confirm diagnosis, to asses' severity, to determine prognosis or detect complications (Knipe and. Datir, 2003. Acute pancreatitis .). Sensitivity of USG in acute pancreatitis is 89.6% and specificity is 49%. (Pandeyl et al., 1998). Sensitivity & specificity of CT touches around 90% (Belthazar, 2002). We used USG to confirm diagnosis and to asses local complications .we did not ask for CT in routine but only if USG was equivocal than we planned for CT that too if renal profile was acceptable. Detected complications on imaging studies were pancreatic oedema, pseudocyst ,ascities,hepatic congession.pleural effusion and pancreatic necrosis (Fig. 6).

Acute pancreatitis has been associated with a variety of clinical disorders. But the acute cause of mechanism which initiates the pancreatic auto-digestion or which makes it either a self-limiting disease or progressively fatal disease remains unrevealed. Improvements in the understanding of the natural history of acute pancreatitis have led to an evolution in the surgical management of patients with acute pancreatitis. In particular, the indications for intervention have been more precisely defined (Glazer and Mann, 1998).

Cholecystectomy should be performed in all patients with gall stones induced pancreatitis. If there is no contraindication of surgery. Preferably cholecystectomy should be done for mild cases during index admission. In those with severe disease it should be deferred until it is clear that surgical intervention for a complicated attack of acute pancreatitis is not required. It is general consensus of majority of surgeons that acute pancreatitis caused by gallstone may face relapse after its first attack that is why customized solution is considered the early operative intervention (Alimoglu et al., 2003). We performed cholecystectomy in eighteen cases within three weeks of their diagnosis. Pancreatic necrosis can be demonstrated on CT scan but pancreatic necrosis is not an indication of surgical intervention. Necrosectomy is necessary only if one or all of below mentioned requirements are fulfilled like

- FNAC confirms infection
- Extra luminal retroperitoneal gases
- There is clinical deterioration due to sepsis without any other identifiable source of infection.

In present study last two requirements were found to be fulfilled by 5% patients. Therefore, the patients were operated for necrosectomy. Necrosectomy should not be contemplated within two weeks of the onset of disease. As it may increase the mortality by increasing hemorrhage. Delayed intervention allows liquefaction of pancreatic necrosis hence, it helps blunt dissection. Furthermore, necrosectomy can be performed either by open technique or by minimum invasive approaches. In general there is no rationale for early ERCP (within 24 hrs.) and stone extraction because mostly stone passes along spontaneously (Fan et al., 1993) .Only if there is cholangitis or raised bilirubin than ERCP may be considered. Sometimes even if there is CBD stone but it is non–obstructive we can plan for laparoscopic cholecystectomy followed by ERCP for stone extraction. We did not offer ERCP to any of our patients, only in one patient we asked for ERCP that too was to find out the cause of pancreatitis not for stone extraction

CONCLUSION:

In our society incidence of acute pancreatitis is increasing in young males especially in business class. Though mostly patients have had gall stones as reason behind acute pancreatitis still idiopathic group are expanding, maybe it is because of increase intake of alcohol or some other hidden factors which still demand evaluation by EUS and ERCP. Acute pancreatitis has no strong association with age, gender and it is exceedingly difficult to predict final outcome of any patient. Despite of randomized trials, we need to swing from early aggressive surgical intervention to more conservative management except when infected necrosis is confirmed. A delicately poised approach with appropriate use of various non-surgical and surgical options is required in the management of acute pancreatitis.

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Submitted for publication: 10.01.2016
Accepted for publication: 20.02.2016

If the right usurped from us is given back to us we shall take it, otherwise we shall go on claiming it.

Hazrat Ali (Karmulha Wajhay)