INTRODUCTION

Acute pancreatitis is an abrupt or recent onset pancreatic inflammation. This relentless clinical condition can be associated with severe complications and even the mortality rate can be high despite adequate treatment. On one hand conservative measures, like keeping the patients nil orally and aggressive fluid resuscitation can successfully treat mild cases while on other hand admission to the intensive care unit or even surgical interventions for complications may be required in severe cases [1].

In 2012 a revised Atlanta classification was proposed clarifying the description of acute pancreatitis [2,3]. According to this classification, acute pancreatitis (regardless of presence or absence of chronic pancreatitis) should constitute at least two of the following three features: (a) abdominal pain suggestive of acute pancreatitis (acute onset of sudden, severe and persistent epigastric pain often radiating to the back); (b) at least three times the upper normal limit of serum lipase activity or amylase activity; (c) characteristic findings on computerized tomography and less commonly on magnetic resonance imaging, or ultrasound abdomen. This clear definition, which is in fact an international, web-based consensus, is based on the easily identifiable clinical and radiologic criteria. Pancreatologists all over the world reached this consensus after extensive consultation. Thus, it should be adopted widely as well [4].

Acute pancreatitis mostly occurs due to alcoholism and gallstone disease. However other causes like abdominal trauma, hypercalcemia, post ERCP, hyperlipidemia, malnutrition, carcinoma head...
of pancreas, radiation, mumps, pancreas divisum, autoimmune pancreatitis, cystic fibrosis also have to be ruled out.\textsuperscript{5} The diagnosis at times is difficult and has to be differentiated from other important clinical conditions like perforated peptic ulcer, biliary colic, acute cholecystitis, pneumonia and even myocardial infarction \[5\].

Minimally invasive surgical intervention or open conventional procedures may be indicated in certain complications which are acquiescent to a mechanical solution, like the acute necrotizing pancreatitis in which the necrotic mass/ phlegmon is excised to remove the possible place of infection or in cases of hemorrhagic pancreatitis in which surgical control of bleed is required. This endeavour may require the services of a general surgeon/ pancreatic surgeon, an interventional radiologist or an interventional endoscopist, depending upon the situation and the expertise available \[1\].

\section*{MATERIALS & METHODS}

This prospective observational study was conducted in the Department of General Surgery, Combined Military Hospital Sialkot. All the patients with confirmed acute pancreatitis, from Aug 2012 to Jul 2015 (three years) were included in the study. Detailed record of the patients was collected through the admission and discharge books of the surgical wards. The clinical presentation, examination findings, investigations and the outcome were recorded on a proforma.

Diagnosis was based on the clinical history of epigastric/ abdominal pain radiating to the back, serum amylase levels and the ultrasound/ CT scan findings. Due to the non-availability of the serum lipase levels, this was not performed in any of the cases. Complete blood count, liver function tests, renal function tests, serum calcium levels, coagulation profiles, ultrasound abdomen and CT scan abdomen was performed in all the cases. However initially due to the non-availability of ABGs, the base deficit and arterial pH could not be assessed, thus strictly speaking the severity scoring systems like Ranson’s criteria, APACHE II or SAPS II were not followed.

\section*{RESULTS}

A total of 120 patients were recorded during this period. Thirty eight (31.6\%) were males and 82 (68.3\%) females, with a male to female ratio of 1 : 2.1. Age ranged 24-70 years, with a mean of 46.03 ± 9.777. Twenty-four (20\%) were in the age group 21 – 40 years and 15 (12.5\%) were >60 years of age. Commonest being in the 41 – 60 years age group, with 81 (67.5\%) patients.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
\textbf{S/No} & \textbf{SYMPTOMS} & \textbf{n (%age)} \\
\hline
1 & Epigastric pain & 100\% \\
2 & Pain radiating to the back & 80 (66.6\%) \\
3 & Anorexia & 100\% \\
4 & Nausea & 100\% \\
5 & Abdominal distension & 38 (31.6\%) \\
6 & Constipation & 29 (24.1\%) \\
7 & Absolute constipation & 9 (0.75\%) \\
8 & Abdominal guarding / rigidity & 9 (0.75\%) \\
9 & Respiratory distress & 3 (0.25\%) \\
10 & Unconsciousness & - \\
\hline
\end{tabular}
\caption{Clinical presentation of patients with acute pancreatitis}
\end{table}

Out of the 120 cases 92 (76.6\%) were associated with gall stones, 19 (15.8\%) with alcohol ingestion, 6 (5\%) with hyperlipidemia and in 3 (2.5\%) cases the exact cause could not he found. All the patients had pain in the epigastric region and 80 (66.6\%) had a classical radiation of pain to the back. Serum amylase was raised in all the cases and ranged from 770-4508 U/L with mean 1331.17 ± 533.761. Ultrasound was diagnostic in 89 (74.1\%) cases, while the CT scan performed in all the cases was confirmatory. A fall in haemoglobin levels < 12.5 g/dL was seen in 75.8\% (91 cases), while < 10.0 g/dL in 27.5\% (33 cases) of cases. Leucocytosis was
noted in 77.5% (93 cases), while a total leucocyte count of more than $20 \times 10^9/L$ in only 4 cases (3.3%). Raised serum urea and serum creatinine was seen in 15 cases (12.5%) and 11 cases (9.2%) respectively. However, serum bilirubin was raised in 8 cases (6.7%) contrary to a raised serum ALT in 38 cases (31.7%) and uncontrolled blood glucose levels seen in 4 cases (3.3%).

A total of 6 (5%) patients had a fatal outcome and all died in the initial fourteen days of admission due to the multiorgan failure. Patients requiring ventilatory support during this period were 4 (3.3%), out of which only two survived. However, in one patient with a rapidly deteriorating condition and multiorgan failure, died within 48 hours of admission. Acute pancreatic necrosis was seen in 11 (9.1%) patients, however abscess formation was not documented. There was no case of pancreatic duct disruption but 5 (4.1%) cases of acute haemorrhagic pancreatitis were seen. No surgical intervention was contemplated during the acute phase of the disease and all the patients were managed conservatively. Amongst the long-term complications, 14 (11.6%) cases developed pancreatic pseudocyst with 10 (8.3%) undergoing cystogastrostomy and the rest resolved with time. All the patients with gall stones were subjected to cholecystectomy with 75% (69 cases) during the same admission and the rest in the follow up period. However, three patients had a recurrent bout of acute pancreatitis during the follow up period.

**DISCUSSION**

Worldwide the incidence of acute pancreatitis is ranging from 5 to 80 with an average of 40 cases per year per 100,000 people [6]. Infact an interesting observation has been made that a rising trend has been noted over the past several decades [7]. The highest incidence has been recorded in the United States and Finland [8].

In our study 76.6% cases were associated with gall stones, as compared to 15.8% of alcoholism. However, alcohol is a major cause in the west. Whitcomb DC et al [9] reported 35% cases due to alcoholism as compared to 40% due to gall stone disease. Chronic alcohol users have acute exacerbations over chronic pancreatic inflammation. No case of post ERCP or traumatic pancreatitis was
documented in our study, which is another important cause of acute pancreatitis. Leghari A et al [10] reported 3.6% frequency of post – ERCP pancreatitis. Interestingly we had 5% patients associated with hyperlipidemia.

All our patients had epigastric pain with anorexia and vomiting but 66.6% showed classical radiation of pain to the back. In our set, up the diagnosis was based on these clinical findings along with raised serum amylase levels and positive CT scan. Indeed, serum lipase is more sensitive and specific than serum amylase in the diagnosis of acute pancreatitis [11,12]. However, the availability of lipase levels is limited in most of our hospitals. Due to the non-availability of serum lipase, we were dependent on serum amylase levels. It was found to be raised in all the cases from 770-4508 with a mean 1331.17 ± 533.761. Treacy et al [13] reported that combination of serum amylase and lipase did not increase diagnostic accuracy while Corsetti J et al [14] found that the amylase could add diagnostic value to the lipase, but only if the results of the two tests were combined with a discriminate function equation. In a study performed on the Sprague-Dawley rats at an experimental animal centre, Topaloglu N et al [15] concluded that the Ischemia-Modified Albumin Levels (IMA) might serve as an additional marker to monitor inflammation during acute pancreatitis. Widely available contrast enhanced CT (CECT) scanning of the abdomen is useful in diagnosing as well as predicting the effect of acute pancreatitis. Calvien et al [16] reported a 92% sensitivity and 100% specificity in diagnosing acute pancreatitis by the CECT. In our study CECT was confirmatory in all the cases.

Antibiotic prophylaxis in severe pancreatitis is controversial. However, in our cases a routine antibiotic prophylaxis was maintained. In our study, all the patients with gall stones were subjected to cholecystectomy with 75% during the same admission. We had three cases of recurrent disease amongst those who had a delay in the surgery thus further promoting that patients with gall stone pancreatitis should undergo cholecystectomy before discharge.

In patients with severe disease (organ failure), who account for about 20% of presentations, mortality is approximately 30% [17]. This figure has not decreased in the past 10 years. Identifying the mild from the severe forms of the disease is quite essential. In our study, we had 5% overall mortality in 120 consecutive cases of acute pancreatitis. Gloor B et al [18] reported an overall mortality of 4% in 263 consecutive patients with acute pancreatitis, with 9% in cases of necrotizing disease. However, Bumbasirevic V et al [19] reported 53.6% mortality in cases of severe acute pancreatitis. Carnovale A et al [20] documented 4.8% mortality in 1135 cases of acute pancreatitis, with 13.5% in severe cases. Mofidi R et al [21] had a 5.9% mortality rate in 759 cases.

Different strategies have been used to assess the severity of acute pancreatitis and predict the outcome. Several clinical scoring systems (eg, APACHE II, SAP II, Ranson criteria, Glasgow, Imrie) are available. Due the non-availability of the ABGs in the initial period of our study, any specific severity scoring system could not be implicated. Indeed, the severity scoring helps in predicting the mortality rate and effects the counselling as well. Shabbir S et al [22] found that the newly proposed BISAP (Bedside Index for severity in acute pancreatitis) score was a simple and accurate tool for severity stratification and equally effective in finding out frequency of severity and in turns mortality. Biological markers have also been used for this purpose. Genetic markers are being studied and have not yet come into clinical use.

CONCLUSION

Acute pancreatitis is a significantly morbid clinical condition with mortalities as well. Gall stone
Clinico-pathological pattern of acute pancreatitis – A single centre study

Disease is the commonest cause in our setup followed by alcoholism. Due to limited diagnostic facilities, acute pancreatitis can be diagnosed simply on the basis of clinical findings, serum amylase levels and CECT. In cases of gall stone disease cholecystectomy should be performed during the same admission. The prognosis and outcome is variable which requires prompt management and at times early ventilator support becomes essential. Aggressive management can reduce the mortality rate and match the international figures as well.

Authors Contribution
Muhammad Irfan Zafar Haider: Entire research work, sample collection, analysis, write-up.
Haroon Rashid: Literature review, help in sample collection.
Saira Saeed: Planning of research, arrangement of reagent kits, sample analysis.
Badar Murtaza: Entire research work, sample collection, analysis, write-up, Literature review, help in sample collection.
Shafaqat Ali: Concept and overall supervision.

References