OUTCOME OF CONSERVATIVE MANAGEMENT IN ACUTE PANCREATITIS

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ABSTRACT

Objective: This study was done to evaluate the patients of acute pancreatitis managed conservatively and to review the findings of investigations.

Study Design: A descriptive study.

Place and Duration of Study: This study was done in Combined Military and Military Hospital Rawalpindi from Nov 2004 to March 2005.

Patients and Methods: This study was carried out from Nov 2004 to March 2005. All Patients presenting with acute abdominal pain and subsequently diagnosed as acute pancreatitis were included in this study. After history general physical and systemic examination was done. All relevant biochemical tests keeping in view Ranson's criteria were carried out. Patients were managed in surgical intensive therapy centre with broad-spectrum antibiotics, somatostatin analogues, intravenous crystalloid infusions, proton pump inhibitor and analgesics. All patients were monitored for complications if any. They were kept hospitalized till their serum amylase level was normal and they were asymptomatic on oral feeding.

Results: Ten (33%) of the patients were females and 20(67%) were males. Majority of the patients were between 31 years to 60 years of age. All of them presented with pain epigastrium, 23 (77%) had fever, 21 (70%) had vomiting. Twenty one (70%) had TLC above 16000/mm3. Serum amylase was raised four times in 30 (100%). While on CT scan abdomen swelling of pancreas was seen in 17 (57%), peripancreatic fluid in 9 (30%)

Conclusion: The treatment of acute pancreatitis is primarily conservative. Conservative management results in low rate of complications, mortality and cost, therefore conservative management should be the first option in treatment of acute pancreatitis.

Keywords: Acute panceatitis, conservative management, pain abdomen, Ranson's criteria.

INTRODUCTION

Acute pancreatitis is an important abdominal condition that may present as acute abdomen in any surgical setup [1] . Its incidence is gradually increasing. It is characterized by interstitial edema within the pancreatic parenchyma and necrosis of the peripancreatic fat (edematous pancreas) [2]. Premature activation of pancreatic enzymes leading to auto digestion of pancreatic tissue is the central event in the pathogenesis of acute pancreatitis. At this stage the patient presents with multitude of symptoms; acute abdominal pain, vomiting, fever, absolute constipation may be present at one and the same time outlining a wide set of differential diagnosis [3]. This varied presentation makes the diagnosis very difficult and even at times the diagnostic tests also may not be very helpful [4]. Therefore the treatment of acute phase may either be delayed or with misdiagnosis one may start treating this pathology in a wrong way. This not only increases the morbidity but it also increases the mortality [5].

The complications are more dreadful than the disease itself [6]. These may be due to extension of the local inflammatory process e.g. necrotizing pancreatitis, pancreatic abscess pseudocyst formation [7]. The systemic effects of circulating enzymes also occur, resulting in vasodilatation, increased capillary permeability, third space fluid loss and disseminated intravascular coagulation (DIC) [8]. More fulminant cases may have circulatory collapse, renal failure and respiratory failure [9].

In most cases the disease is self-limiting and can be managed conservatively with supportive care. This if started earlier and effectively yields good results with low

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mortality [10]. The patients who develop complications need specific management. Mainstay of systemic complications is effective medical therapy in the form of resuscitation, support of individual organ systems and treatment of local complications, which in most circumstances amounts to surgery [11, 12].

The purpose of the study was evaluate the patients of acute pancreatitis managed conservatively and to review the findings of investigations in those patients.

PATIENTS AND METHODS

A descriptive hospital based study was carried out at Department of General Surgery, Combined Military Hospital & Military Hospital, Rawalpindi, from Nov 2004 to March 2005. Each hospital is 700-bedded tertiary care center receiving patients not only from Rawalpindi and surrounding areas but also from military hospitals all over the country. Thirty-four patients were included in this study. Four patients deteriorated due to necrotizing pancreatitis for which immediate surgical intervention was undertaken. Therefore those four patients were excluded from the study.

Non probalility purposive sampling done on the basis of acute abdomen associated with elevated serum amylase and positive pancreatic findings on abdominal sonography and CT scan.

All patients with upper abdominal pain, elevated serum amylase, abdominal sonogram and CT scan suggestive of acute pancreatitis were included. All patients with acute abdomen raised serum amylase with normal pancreatic sonogram, known cases of chronic pancreatitis and known cases of acute or chronic calculus/acalculus cholecystitis were excluded from the study.

All patients with provisional diagnosis of acute pancreatitis were admitted in surgical intensive therapy centre. Urgent serum amylase and ultrasonography abdomen was requested. All patients with acute abdomen, raised amylase with normal pancreatic sonogram were excluded but admitted in the surgical ward. Blood complete picture, urine analysis, serum amylase, blood glucose random, serum lactate dehydrogenase, serum aspartate transaminase, serum urea, serum albumin, serum corrected calcium, blood urea nitrogen level, arterial oxygen saturation, plain X-ray abdomen erect, ultrasound abdomen and CT scan abdomen were requested.

Pancreatitis severity was assessed using Ranson's criteria. Intensive care monitoring was started. All patients were kept nil per orally. Total parenteral nutrition was started in prolonged course of illness. Intravenous volume resuscitation with isotonic fluids was done. Intake/output was noted with Foley catheter/external catheter. Oxygen saturation was monitored. Monitoring of the patients was done for any complications. Analgesia given was titrated against pain and was provided with in the order of diclofenac sodium, nalbuphine, tramadol and pethidine. Prophylaxis of stress ulceration was done with Omeprazole 40-mg infusion once daily. Intravenous Cefuroxime 750 mg 8-hourly or Imipenem/cilastatin 1 g 12-hourly were administered. Octrotide 50 ug 8-hourly subcutaneously was injected.

All patients remained hospitalized till their serum amylase returned to normal levels and they were asymptomatic on oral feeding. On discharge from the hospital, all patients/attendants were counseled about the exact nature of the disease. Regular patient-convenience follow-up was advised and ensured.

A proforma was designed in which list of all the relevant symptoms, signs with the results of laboratory tests, findings of X-ray abdomen, ultrasonography, CT scan abdomen were recorded. The data was analysed using computer SPSS-8.0. Percentages were calculated to describe the data.

RESULTS

In a period of six months i.e. from Nov 2004 to March 2005, thirty-four patients of acute pancreatitis were managed in our department. Four patients were excluded as they underwent surgical intervention due to the complication of necrotizing pancreatitis.

The remaining 30 patients who fulfilled our criteria were included. Twenty (67%) patients were males and 10 (33%) were females. Twenty nine (97%) patients were between 31-60 years and 1 was below 30 years of age. Most of the patients were from urban areas. All of the patients presented with pain epigastrium. 23 (77%) were febrile and 21(70%) had vomiting bowel sounds were absent in 4 (13%) patients.

The biochemical abnormalities were the actual diagnostic and prognostic indicators. Total leukocyte count of more than 16000/mm3 was present in 21 (70%) patients and less than 16000/mm3 was present in remaining 9 (30%) patients. Serum amylase level was raised four times the normal value in all of the patients and it was the actual diagnostic indicator. Serum glucose was raised in 6 (20%) patients. Serum LDH was raised in 7 (23%) patients and serum AST was raised in 9 (30%) patients. Hypocalcaemia was seen in 5 (17%) of the cases and hypoalbuminemia was present in 3 (10%) cases (Table).

On plain X-ray abdomen erect dilated gut loops were present in 19 (63%), colon-cut off sign in 6 (20%) of the cases. On abdominal sonography, swelling of pancreas was present in 6 (20%), peripancreatic fluid in 5 (17%) and both were present in 2 (7%) of the cases. While on CT scan abdomen, swelling of pancreas was seen in 17 (57%), peripancreatic fluid in 9 (30%) and both were seen in 4 (13%) cases (Table). Seventeen (57%) patients were given Imipenem and 13 (43%) were given Cefuroxime. The average hospital stay of the patients was 20 days with standard deviation of 8 days.

DISCUSSION

Acute pancreatitis is an acute abdominal condition that poses a diagnostic challenge in the emergency department. The main objective of the clinical process is to make a correct diagnosis of acute pancreatitis as soon as possible with maximum economy of resources so that definitive treatment may be

Table: Interpretation of Findings

Biochemical Profile	
Total leukocyte count > 16000/ cubic mm	70%
Serum amylase (four times the normal value)	100%
Raised serum glucose (>11.1m mol/l)	20%
Raised serum LDH	23%
Raised serum AST	30%
Hypocalcemia	17%
Hypoalbuminemia	10%
Raised serum urea	37%
Raised serum creatinine	14%
Findings of plain X-ray abdomen	
Normal	17%
Dilated gut loops	63%
Colon cut off sign	20%
Findings of USG abdomen	
Normal (pancreas)	56%
Swelling and peripancreatic fluid	7%
Swelling of pancreas	20%
Peripancreatic fluid	17%
CT scan findings (of pancreas)	
Normal	0%
Swelling and peripancreatic fluid	13%
Swelling of pancreas	57%
Peripancreatic fluid	30%
Average stay of patients in hospital in days	**20**

started to give chance for the conservative management to be successful [13]. However, the management of acute pancreatitis remains a difficult clinical problem because differential diagnosis in such patients is not straightforward [14]. The main concern relates to delay in diagnosis of acute pancreatitis with consequent risks of systemic inflammatory response syndrome and multiple organ dysfunction syndromes [15, 16]. If proper treatment started earlier with correct diagnosis of the condition complications like pancreatic necrosis and abscess formation may be prevented, giving maximum chance for the conservative management to be successful [17,18].

In recent years much attention has been devoted to development of new diagnostic techniques such as C-reactive protein (CRP), graded compression ultrasonography, computed tomography, non contrast helical computed tomography and laparoscopy [19]. However these techniques do not have wide acceptance in the routine diagnostic armamentarium of acute pancreatitis due to additional cost and lack of free availability [20]. Despite advances in diagnostic modalities, diagnosis of acute pancreatitis is still clinically based on history and physical examination [20, 21].

The biochemical evaluation of a patient with acute pancreatitis is an important aspect, however the lab tests are expensive and unevenly distributed across the country so the protocols vary with hospital settings. In peripheral hospital with limited diagnostic facilities the decision should be towards a more aggressive supportive therapy or early referral to a specialized center. While in hospitals in big cities with full diagnostic facilities, effort should be made to make an accurate diagnosis before embarking upon this aggressive approach.

The patients of acute pancreatitis who presented to us were unequally distributed, both in regards to gender and age. This is because of the entitlement at the hospital. This is the reason of disparity amongst the gender distribution of the patients. We could not find such discrepancy in the literature. Once admitted they were fully investigated. specially the investigations mentioned in Ransons criteria to assess the severity of acute pancreatitis were done. According to the objective it was a descriptive study in which we have shown the number of patients according to symptoms and signs with their respective percentage for example in our patients TLC range was between 9000/ mm3 to 22000/ mm3. 70% of the patients had a total leucocyte count of above 16000/mm3. Similarly the serum amylase level was in the range of 400 U/L to 900 U/L. The ultrasound abdomen revealed pancreatic pathology in only 44% of patients. This was due to the facts that the pancreas could not be visualized due to the gas shadow in gut and secondly this investigation is operator dependent. While CT scan abdomen showed pancreatic pathology in 100 % of patients. All patients included in this study undergoing conservative treatment faired well. There was no mortality or major complications like shock, systemic inflammatory response syndrome, multiple organ dysfunction syndrome and pseudopancreatic cyst was seen in our series.

In this study all patients were managed with aggressive supportive treatment all of the patients in our study had a successful outcome while four patients who had to undergo operative intervention for necrotizing pancreatitis were excluded from the study. The treatment of acute pancreatitis is primarily conservative [22, 23]. Indications for surgical intervention are: progressive sepsis despite maximum conservative management, an established infection of (peri) pancreatic necrosis, peripancreatic abscess and perforation of stomach, small intestine or colon [24, 25] .

CONCLUSION

The treatment of acute pancreatitis is primarily conservative. Conservative management results in low rate of complication, mortality and cost. Therefore it should be the first option in treatment of acute pancreatitis. Clinical assessment by

Ranson Score is sufficient to predict the severity of pancreatitis in most patients.

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