

Study of all aspects of 50 consecutive patients with Acute Pancreatitis in a Tertiary care Hospital in North Telangana

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ABSTRACT

Introduction: One of the most dangerous diseases of GIT is Acute Pancreatitis (AP). Its onset, the illimitable agony which accompanies it, the mortality, all render it the most formidable of catastrophes. Uniformly, severity & scoring systems are cumbersome. There is no laboratory test practically available or consistently accurate to predict its severity. To determine it, close examination to assess early fluid losses, hypovolemic shock, and symptoms suggestive of organ dysfunction is critical. This work aims to assess the above factors in a rural setting near Karimnagar, Telangana State, India.

Aims & Objective: This study was conducted to determine to study all aspects of the 50 consecutive patients with Acute Pancreatitis.

Materials & Methods: This descriptive study was performed among 50 individuals from whom informed consent was taken and each patient was admitted into the ward or ICU. After history taking and physical examination, patients underwent various routine investigations. They were scored for predictability of disease severity by APACHE II scoring system.

Results: Among 50 patients, 31 were classified as mild pancreatitis, 9 patients as moderate pancreatitis, and 10 patients severe pancreatitis. 2 patients out of the severe pancreatitis group expired. The etiology of AP was alcohol in 27 subjects of studied. Most common symptom was upper abdominal pain followed by nausea or vomiting.

Conclusion: AP was found to be common in males with alcohol being most common etiology and patients with high APACHE scoring had more incidence of pancreatic necrosis, organ failure, duration of hospital stay and complications were on rise with increase in CTSI, serum creatinine.

Keywords: Acute Pancreatitis and CT severity index Evaluation Score, CT scoring index, Intra abdominal pressure, Blood urea nitrogen

INTRODUCTION

One of the most common and serious diseases of the gastrointestinal tract is Acute Pancreatitis. The suddenness of its onset, the illimitable agony which accompanies it, and the mortality attendant upon it, all render it the most formidable of catastrophes¹. Most episodes of AP are mild and self-limiting, with absence of organ failure and pancreatic necrosis. Severe AP with organ failure and death occurs in 15 – 20% of patients.² Clinicians have largely been unable to predict which patients with Acute Pancreatitis will develop severe disease. Uniformly, severity & scoring systems are cumbersome, typically require 48 hours to become accurate, and when the score demonstrates severe disease, the patient's condition is obvious regardless of the score.³ Although laboratory testing such as Hematocrit and Blood urea nitrogen (BUN) can assist clinicians, no laboratory test is practically available or consistently accurate to predict severity in patients with AP.

MATERIALS & METHODS

Informed consent was taken from all the patients. The Ethics Committee had approved the work. A total number of 50 consecutive patients admitted in Prathima Institute of Medical Sciences, Karimnagar were included in this study. Each patient was admitted in the ward or ICU as per individual requirement.

After a thorough history taking and physical examination, all patients underwent Complete blood picture, random blood sugar levels, complete urine examination, BUN, Serum creatinine, serum Amylase, serum Lipase, Liver function tests, Lipid Profile, Chest X-Ray, ECG and USG of abdomen. CECT abdomen was performed in 47 patients and CTSI score was given. CECT was not performed in 3 subjects as they had high Serum Creatinine levels. Intra-abdominal pressure was also measured in all the subjects using a 3 way Foley catheter and a manometer. All patients were scored for predictability of disease severity by APACHE II scoring system. The patients were followed up till discharge/death.

RESULTS

Out of the 50 patients, 31 were classified as mild pancreatitis, 9 patients as moderate pancreatitis, and 10 patients had severe pancreatitis. 2 patients out of the severe pancreatitis group expired. 29 patients come under the age group of 31-50 years and incidence appears to be common in this age. The etiology of AP was alcohol in 27 subjects of studied. Etiology in 10 was biliary. The cause was unknown in 10 subjects. Pancreas divisum was the cause in 2 subjects. Only one subject had auto immune pancreatitis.

All the subjects of the study group presented with upper abdominal pain. The second most common symptom in our study group was Nausea/Vomiting presented in 48 subjects. Jaundice in 11 and fever in 10 subjects. In the study population 16% (8 subjects) of the subjects presented with shock. Of these (8 subjects), 7 subjects had ascitis. In the present study all the subjects underwent evaluation of serum amylase levels at the time of admission. In the study population serum amylase levels had a wide range of 3648 (3720-78).

In the study population serum lipase levels had a wide range of 2163(69-2332) at the time of admission. Most of the subjects (66%) had Serum lipase value between 60-200. Only 16% (8 Subjects) had >3 times elevation of serum lipase levels. Contrarily in a study by Astha K Trivedi et al,⁴ levels of serum lipase were more than 340 units in 68 % of their patients. All the subjects in the study group were evaluated for BUN levels at time of admission. BUN level of > 20mg/dl is known as a predictive marker for severity of AP. BUN measured during admission was found more accurate in a Cohort study^{5,6}.

14 subjects who had BUN> 20mg/dl, CECT was performed in 12 subjects and among 6 subjects (16.6%) evidence of necrosis on CECT presented with BUN<20mg/dl. Subjects presenting with higher BUN(>20mg/dl) are more prone to develop pancreatic necrosis in the present study population. High Serum creatinine i.e >2mg/dl in AP has grave implications on prognosis. 10 subjects in the present study have presented with serum creatinine >2 either at the time of admission or 48 hours after admission. Among these 10 subjects, 70% (7) developed AKI and metabolic acidosis. Both deaths were in this group.

The mean CTSI score was 3.9 in the group of subjects with serum creatinine <2mg/dl. In the group of subjects with serum creatinine >2mg/dl the mean CTSI score was 4.6. This finding shows that incidence of necrotizing AP was more in the group of subjects with high serum creatinine (>2mg/dl). In the study population CTSI scoring was done in 47 subjects. Subjects in the study population were divided into 3 groups as per Balthazar scoring⁷. [Table 1].

Table 1: Balthazar Scoring

| CTSI | Number of subjects | Percentage age |
|-------------------|--------------------|----------------|
| 0 TO 3 (Mild) | 17 | 36.2% |
| 4 TO 6 (Moderate) | 26 | 55.3% |
| 7 TO 10 (Severe) | 04 | 8.5% |

Subjects with severe disease score had a mean duration of stay of 10.2 days. As expected high CTSI scores depict more serious disease. 43 subjects of the study group had an APACHE score of less than 8. APACHE score was =8 in 7 subjects. See comparison of APACHE II scores with Pancreatic necrosis and Organ failure. [Table 2].

Table 2: APACHE II Scoring system

| APACHE II | Number of subjects | Age of subjects with pancreatic necrosis (%) |
|-----------|--------------------|--|
| < 8 | 43 | 21.4% |
| ≥ 8 | 07 | 80% |

All patients had serial measurements of IAP every 24 hours. The maximum IAP values were taken into account. 37 subjects had an IAP Maximum of <12 at presentation. 8 subjects had a maximum IAP from 12 to 15 in the study group. Maximum IAP of more than 16mm of Hg was recorded in 5 subjects These findings of our study are consistent with the study of Jan J De Waele et al.^{8,9}

DISCUSSION

Acute pancreatitis is an acute inflammatory process ranging from mild discomfort with localized inflammation to severe disease with multi organ failure. This study tries to evaluate the etiology, presenting symptoms, various methods of severity assessment and outcome. In this study the sex distribution was 80% males and 20% females. The most common age group to be affected was 31 -50yrs in this study. In our study the etiology was predominantly alcoholic (54%). Biliary pancreatitis was present in 20% patients, while in 20% of patients the cause could not be identified.

Our study revealed that the cause of AP in a rural setting was predominantly alcoholic, biliary cases were less, and in many cases, the etiology could not be identified. This might be due to the prevalence of alcohol abuse in this area, and the sample size may be too small. Philip V et al¹⁰, have concluded that gallstones and alcohol abuse were the most common cases of AP, which together amount for 60- 80 percent of all cases.

The value of normal amylase for this study was taken as 130 units/L. Any rise three times above normal values combined with positive clinical features and radiologic data was taken as a proven case of AP. Serum Amylase was increased by more than 390 in 82 % of cases.

In our study Serum Lipase levels were increased to 60 - 200 /L in 66% of patients, 201 – 340/L in 18 % of patients and more than 340 U/L in 16% patients. The lower percentage of 16% in our study may be due to the small sample size and the fact that se lipase levels were estimated on the day of admission.

Amylase levels generally rise within a few hours after the onset symptoms and return to their normal values within 3-5 days, as amylase has a shorter half-life than lipase. In contrast to serum amylase, serum lipase is considered a more valuable diagnostic tool, because abnormally elevated values persist for a longer duration, which is an advantage in patients with a delayed presentation. Recent data suggest that serial measurement of BUN levels is the most useful routine laboratory test determining risk of death. However he also cautions that raised BUN levels may reflect several disease processes¹¹.

In our study, BUN levels >20mg/all were found in 14 patients at the time of admission. CECT was performed in 12 subjects; 5 subjects (41.6%) showed pancreatic necrosis, 6 subjects(42.8%) developed acute renal failure and 2 of them have expired.

High serum creatinine is a well-known unfavorable prognostic parameter in AP. Elevated serum creatinine on admission and 48 hours after admission was described as a marker for pancreatic necrosis in AP by Muddana et al¹². In our study, 10 patients had Serum creatinine >2 either at the time of admission or 48 hours after admission among these, 7 patients developed metabolic acidosis.

In our study 36.2% of patients had CTSI 0 – 3 indicating mild disease, 55.3 % of patients had CTSI 4 to 6, (moderate) and 8.5% of patients had a CTSI score of 7 – 10 (Severe disease).

Recent clinical experience has indicated that some patients dying of early MOF might have suffered from untreated abdominal compartment syndrome (ACS). Massive fluid resuscitation in the early course of the disease combined with the severe inflammatory process in the retroperitoneum could contribute to visceral edema leading to increase IAP. Our study agrees with other studies such as Aitken et al¹³ that IAP is a good predictor of mortality and organ failure in AP.

CONCLUSION

In the present study patients with AP, alcohol (54%) was the most common etiology followed by gall stone pancreatitis (20%). The cause for AP could not be identified in 20% of the patients. Pancreas divisum was the cause in patients below 15 years presenting with AP. In the present study most of the patients (58%) belonged to the age group between 31- 50 years. Males (80%) were commonly affected than females probably due to higher incidence of alcoholism in males in the general population.

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