

Contribution of Biliary Disease in the Pathogenesis of Acute Pancreatitis

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Objectives: To determine the major cause of pancreatitis in our set up. **Design:** Clinical trial **Setting:** Surgical Unit-III, Sir Ganga Ram Hospital, Lahore. **Subjects & methods:** 20 patients included in this study received either through emergency or through OPD. **Results:** Gall stones are major contributor of acute pancreatitis. **Conclusion:** Biliary tract disease is a major contributor of pancreatitis.

Key words: Pancreatitis, cholelithiasis

Acute Pancreatitis is not an uncommon surgical emergency, with presentation varying from a mild self-limiting attack of abdominal pain, to severe systemic upset and eventual death as a consequence of pancreatic necrosis.

Causes of acute pancreatitis are many and varied. In the past the diagnosis of this condition was a conflict for the surgeons. In some cases of acute pancreatitis especially in the initial few hours, the pancreatic enzymes in the blood and urine may not be sufficiently raised to confirm the diagnosis. In recent years better understanding of the causes and latest methods of diagnosis e.g., Ultrasonography, ERCP and CT - scan etc, have made the diagnosis and management of its complications has similarly improved, hence reducing its morbidity and mortality to a great extent.

A thorough knowledge of the aetiology and pathogenesis of acute pancreatitis can help in devising standard treatment in this condition.

In our setup the determination of the relative contribution of gallstones to acute pancreatitis has a great clinical significance, as biliary lithiasis is quite common in Pakistan.

Cholelithiasis is present in 35–60% of cases of pancreatitis and 5% of the gallstones develop pancreatitis at some point in life³. The gall stones predominate in elderly and rural communities. Pancreatitis occurring during pregnancy or postpartum is often caused by occult gall stones².

It is now believed that stones impact transiently in the common channel and so promote reflux of bile into the pancreatic duct and / or impair the normal flow of pancreatic juice. Stones ranging in diameter from 1–12 mm have been recovered from the faeces in the days following an attack, supporting this concept. It has also become apparent that many patients with 'idiopathic' AP are actually suffering from pancreatitis caused not by stones per se but by debris containing microcrystals of cholesterol and calcium bilirubinate granules⁴.

Material and methods

This prospective study was conducted on 20 consecutive patients suffering from a cute pancreatitis from November

2002 to April 2003 at Surgical Unit-III, Sir Ganga Ram Hospital, Lahore.

Two patients were admitted from the outpatient clinic, 11 patients admitted through emergency department and 7 patients were referred from the medical floor. Full clinical presentation with symptoms, and signs of all patients were recorded. Routine investigations e.g. complete blood picture, urine complete examination, blood sugar, blood urea, serum creatinin, serum electrolytes, E.C.G. and chest x-ray were done in all cases. Ultrasound scan was also done in all the patients.

Special investigations e.g. serum amylase, serum calcium, serum lipase, LFTs and serum albumin were done in almost all the patients. CT-Scan and ERCP were performed in selected patients.

Per-operative findings were recorded, and appropriate procedures done as required. Ten patients managed conservatively and surgery was done in 10 patients.

Results

In our study we had 14 patients with acute pancreatitis due to biliary tract disease, 1 patient due to ethanol abuse, 1 patient due to viral infection and 4 patients with idiopathic acute pancreatitis. In sex distribution, 10 were male patients and 10 were females. Average age of these patients was 51 years for male and 27.75 years for female. Twelve patients presented before 48 hours from the onset of the symptoms, 2 patients after 48 hours but before 4 days, while 6 patients presented even after that period. We had divided these cases into low-risk group and high-risk group depending on the severity of the disease in accordance with Ranson's criteria. Patients in low-risk group had number 4 or less than four and in high-risk group more than 4 according to Ranson's scoring system. Fifteen patients were included in low-risk group and 5 patients in high-risk group.

Among high-risk group 3 patients were suffering from Biliary pancreatitis, one patient from alcohol-induced pancreatitis and 1 patient with idiopathic pancreatitis. In low-risk group 11 patients were suffering from biliary pancreatitis and 4 patients with other etiologies.

Table 1 Diagnosis

Disease	n=	%age
Biliary Pancreatitis	14	70
Ethanol - Induced Pancreatitis	1	5
Viral Pancreatitis	1	5
Unknown	4	20

Table 2 Risk factors

Risk Factors	n=	% age
Low-Risk with Ranson Criteria 4 or <4	15	75
High-Risk with Ranson Criteria > 4	5	25

Discussion

Acute pancreatitis is a serious health problem, which may progress to fatal outcome. It has been supposed that there are differences with regard to clinical course and outcome due to the underlying etiological factor in acute pancreatitis⁶. The clinical experience have shown that once the pathogenetic mechanisms have initiated the disease, the course and outcome are not influenced by the underlying etiological factor³. At present, the mainstay of treatment is the early identification and removal of the cause if possible⁴.

Gallstones and alcohol are the most important factors in the pathogenesis of AP. Other factors are less frequent and in some patients one is unable to identify any risk factor⁷. Even in the most frequent forms of alcoholic or biliary pancreatitis little is known about the cellular and molecular mechanisms which lead to severe pancreatitis. The incidence of AP is around 5-10 per 100,000 in western literature . The incidence among the males is about the same as in females. In women it occurs at the age of fifty but in men it affects a bit earlier, at the age of 30-40 years.

The ratio of biliary pancreatitis in male: female is 1:3 and 6:1 in those with alcoholic pancreatitis. Most of the

attacks are mild, which recover with conservative treatment. When the attack is severe, it usually needs intensive care management with considerable morbidity and mortality⁵. Certain recent diagnostic modalities have made the diagnosis easier e.g. ultrasonography and CT-Scan and even some have therapeutic role as well i.e., ERCP.

Our study shows that the incidence of biliary disease in a cute pancreatitis is 70% in our society and males are effected equally as the women.

Conclusion

Acute pancreatitis due to biliary tract disease is the most common i.e 70% and due to ethanol abuse is very low i.e 5% . The other rare causes are also rare in our setup. We also concluded that the morbidity was quite high and most of the patients need ICU management, with mortality reaching up to 10%.

References

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