IJCRR
Vol 04 issue 22
Section: Healthcare
Category: Research
Received on: 14/09/12
Revised on: 27/09/12
Accepted on: 10/10/12

A STUDY OF GALLSTONES ASSOCIATED ACUTE PANCREATITIS AND ITS MANAGEMENT IN RURAL INDIA

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ABSTRACT

Introduction: Acute pancreatitis is an inflammation of the pancreas caused by auto-digestion of the gland by its enzymes. It includes a broad spectrum of pancreatic diseases, which vary from parenchymal edema to necrosis. The objective of the current study was to describe the symptoms of the patients with gallstones-associated pancreatitis and to reinforce the opinion that operation, within the first 72 hours after the onset of the disease, has many advantages and has to be considered as a treatment option when Endoscopic Retrograde CholecystoPancreatography (ERCP) is not available.

Methods: The present retrospective study concerns all patients that were hospitalized in Civil Hospital, Sangli during the period between Jan 1, 2001 and Dec 31, 2011 under the diagnosis of gallstone-associated acute pancreatitis. From the records 216 cases were identified (86 males and 130 females). The mean age was 62.93 (SD 15.85years), ranging from 17 to 91 years.

Results: 48 patients (22.22%) fulfilled more than 3 of Ranson's criteria. 40 patients (18.52%) presented with necrotizing pancreatitis. All patients underwent open cholecystectomy and common bile duct exploration. Necrosectomy concomitantly with cholecystectomy was performed in 14 patients (6.48%). The mean hospitalization was 10.53 days (S.D. 6.38 days), ranging from 2 to 36 days. The associated mortality reached 5.55% (12 patients) and no patient died in the operating theatre. During the 12-month follow-up period, 4 patients (1.85%) developed pancreatic pseudocysts.

Keywords: Acute gallstone pancreatitis, Cholecystectomy

INTRODUCTION

Acute pancreatitis is an inflammation of the pancreas caused by auto-digestion of the gland, by its enzymes. It includes a broad spectrum of pancreatic diseases, which vary from parenchymal edema to necrosis. The clinical course of an episode of acute pancreatitis varies from a mild-transitory form to a severe necrotizing form characterized by multisystem organ failure and mortality in 20-40% of cases [1]. Mild pancreatitis does not need specialized treatment, and surgery is necessary only to treat underlying mechanical factors such as gallstones or tumors at the papilla of Vater [1]. Etiologically, the most frequent form is acute biliary pancreatitis [2]. Treatment of such an entity is still controversial, but a minimally invasive technique undoubtedly plays an important role [2].

The objective of the current study was to describe the symptoms of the patients with gallstone-associated pancreatitis and to reinforce the opinion that operation, within the first 72 hours after the onset of the disease, has many advantages and has to be considered as a treatment option when Endoscopic Retrograde CholecystoPancreatography (ERCP) is not available.

METHODS

The present retrospective study includes all non-alcoholic patients hospitalized in the Civil Hospital, Sangli during the period between Jan 1, 2001 and Dec 31, 2011 under the diagnosis of gallstone-associated acute pancreatitis (GAAP).

The characteristics of the 216 patients included in the present study are presented in Table 1.

The diagnostic approach of the patients included both laboratory and imaging investigation. All laboratory examinations necessary to a full patient evaluation according to Ranson's criteria were performed. In the context of the imaging study a plain chest film, a plain abdominal film, ultrasonography and computerised tomography were performed. All patients were evaluated with the Ranson's criteria. It is important to notice that 138 (63.89%) patients were aware of the gallstones.

All patients underwent cholecystectomy and common bile duct exploration. Necrosectomy concomitantly with cholecystectomy was performed in 14 patients (6.48%). One hundred and two patients were followed-up during a 12 month period. The follow-up included laboratory examination and CT-scanning every 6 months.

RESULTS

The symptomatology is of prime importance in the diagnosis of the acute pancreatitis in general. Table 2 presents the symptoms appearing in Gallstone-associated Acute Pancreatitis (GAAP) in the present series.

The laboratory investigation plays a major role both in the diagnosis and in the prognosis of the Gallstone-associated Acute Pancreatitis (GAAP). Table 3 presents the laboratory results of the patients. Forty-eight patients (22.22%) fulfilled more than 3 Ranson's criteria. Furthermore, according to Ranson's classification, 176 patients (81.48%) had a mild to moderate acute biliary pancreatitis and 40 (18.52%) had a severe one.

Table 1: Characteristics of the patients in this series

Sex	Male : 86	Female: 130
Age (Years)	62.93 (S.D. 15.85)	
Age Range (Years)	17 to 91	

Table 2: Symptomatology of Gallstone-associated Acute Pancreatitis (GAAP)

Symptoms	No of Patients (n = 216)	Percentage (%)
Abdominal pain	216	100
Nausea & vomiting	184	85.19
No bowel sounds	158	73.15
Hypovolemia (Tachycardia - Hypotension)	26	12.04

The imaging studies represent a paramount factor in the diagnosis and decision-making of Gallstone-associated Acute Pancreatitis (GAAP). The results of the imaging investigation are presented in Table 4. In the above table under each examination are cited the possible findings that led the examination to be conclusive.

All patients underwent cholecystectomy and common bile duct exploration. Necrosectomy concomitantly with cholecystectomy was performed in 14 patients (6.48%). The mean hospitalization period was of 10.53 days (S.D.= ±6.38days). The duration of the hospitalization ranged from 2 to 36 days.

The associated mortality was 5.55% (12 patients) and no patient died in the operating theatre. During the 12-month follow-up period: 4 patients (1.85%) developed pancreatic pseudocysts.

Table 3: Laboratory findings

	Parameter	No. of Patients	Percentage (%)
Admission	WBC >15,000 cells / µl	30	13.89
	Glucose >200 mg/dl	18	8.33
	LDH >350 I.U./L	42	19.44
	Serum Amylase >1000 I.U/L	206	95.37
	Hematocrit elevated	14	6.48
	CRP elevated	14	6.48
	SGOT (AST) >250 IU/L	54	25.00
First 48 hours	Hematocrit >10%	26	12.04
	Ca^{2+} <8 mg/dl	18	8.33
	paO_2 <70 mmHg	68	31.48
	Base deficit >4mEq/L	30	13.89
	Fluid sequestration >600ml	16	7.41

Table 4: Results of the imaging studies

	No. of Patients	Percentage (%)
Plain abdominal film Sentinel loop sign Colon cutoff sign Radio opaque stones Air in the duodenal loop Obliteration of the psoas sign	142	65.74
Plain chest x-ray Left basal atelectasis Left pleural effusion Elevation of left hemidiaphragm	64	29.63
Pancreatic ultrasonography Edema Peripancreatic fluid collection	156	72.22
Biliary tree ultrasonography Gallstones	184	85.19
CT scan Abdomen Pancreatic changes Peripancreatic changes Nonspecific findings	200	92.59

DISCUSSION

It is well known that acute biliary pancreatitis is more frequently found among females than males [3-8]. The above data is consistent with the findings in the present study, since the female: male ratio is around 2:3. As for severity, there was no significant association between gender and any of the severity parameters with a few minor exceptions: longer hospital stays, higher Imrie scores and more pseudocysts for women, and more necroses in women with idiopathic pancreatitis. Thus, gender is no independent risk factor for the severity and outcome of acute pancreatitis [9],

Overall length of hospital stay was positively correlated with complications, choledocholithiasis, co-morbidity, and deferment of endoscopic or surgical procedure [10-12]. In the present series the above statement reflects to the fact that the range of the hospitalization varies from merely 2 days to 36 days.

In the modern era of laparoscopic and endoscopic surgery it is generally accepted that Gallstone-associated Acute Pancreatitis (GAAP) has to be managed by endoscopic removal of the gallstone

and secondary laparoscopic removal of the gallbladder [13-16]. In the present series neither Endoscopic Retrograde Cholecysto Pancreatography (ERCP) nor laparoscopic approach was available for that reason open surgery was performed.

A field of controversy is the timing of the operation. According to several authors operation can be performed at the acute phase, while according to others it should be performed several weeks after the acute episode [17-23]. In our series the preferred time of the operation was within 72 hours from the acute episode. This choice was proved to be right as this was proven by the low mortality rate and the duration of the hospitalization.

CONCLUSION

Despite the fact that open surgical management of the Gallstone-associated Acute Pancreatitis (GAAP) is not the optimal treatment of the disease, the operation has to be a logical option in the interventional arsenal of the surgeon, especially when the institutional facilities at which he works don't offer access to Endoscopic Retrograde CholecystoPancreatography (ERCP) and laparoscopic instrumentation.

ACKNOWLEDGEMENT

We acknowledge all the immense help received from the scholars whose articles are cited and included in references of this manuscript. We are also grateful to Editors, Publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

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