

Acute pancreatitis. A more common and severe complication of gallstones in males

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Abstract

Objective: To describe an increased incidence and severity of gallstone pancreatitis in males compared to females.

Design: Methods: This is a retrospective observational comparative study conducted at Liaquat University of Medical and Health Sciences, Jamshoro, Pakistan, over 3 years from June 2008 to June 2011. The study includes two hundred and thirty seven (237) patients with a mean age of 52.38, Std 13.311,65 (22-87) with 157 (66.24%) females and 80 (33.75%) males who were admitted as acute abdominal pain secondary to gallstones. The patients were mostly diagnosed on ultrasonography and enzyme studies. Demographics and other variables are studied and statistical analysis done on SPSS version 20.

Results: More frequent cases of severe acute pancreatitis were observed in males with gallstones (70%) compared to females ($P<0.001$). The aged people had a high prevalence while males were more likely to develop local and systemic complications. Severity stratification was done based on different criteria's like Ranson's criteria, and APACHEII. Overall mortality was 7.59%. Mortality among males was significantly high (70%, $n=16$) in our study due to an increased incidence of fulminant course of the disease.

Conclusion: Contrary to the belief, gallstone associated acute pancreatitis is getting more common in our society and especially so in male population.

Key Words: Symptomatic gall stones, complications, male population, acute pancreatitis

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Introduction

Gallstones are a common problem all over the world. One of the most dreaded complications of gallstones is acute pancreatitis due to passage of a tiny stone into common bile duct where it gets impacted at ampula of Vater. ⁽¹⁻²⁾ Acute pancreatitis refers to an acute inflammatory process secondary to damage to pancreatic acinar cells. The triggering event is an activation of pancreatic enzymes leading to auto digestion of pancreatic parenchyma. This usually results when a tiny stone passes through cystic duct to enter common bile duct and finally lodges in the ampula of Vater. The course of the disease ranges from a mild, self limiting disease in 85% patients to a more severe acute illness with a high morbidity and mortality in the range of 5-35%. ⁽³⁻⁶⁾ There are a number of scoring systems to assess the severity of the pancreatic damage for example enzyme estimation, Ranson's criteria, Glasgow scale and APACHE II (Acute physiology and chronic health evaluation) systems. Early diagnosis and stratification of severity with aggressive treatment can prevent lethal complications like multiple organ failure, pancreatic necrosis and fluid collections and decrease mortality. ⁽⁷⁻¹¹⁾ There is a general belief that gall stone pancreatitis is more common among females as cholelithiasis is comparatively more common among them. ⁽¹²⁾ The men are however found to be more technically prone to develop acute biliary pancreatitis. ⁽¹³⁻¹⁴⁾ This study is conducted to study the incidence, severity and outcome of acute pancreatitis in males compared to females.

Methods

This study is based on two hundred and thirty seven patients with a mean age of 52.38, Std 13.311,65 (22-87) with 157 (66.24%) females and 80 (33.75%) males who were admitted as acute abdominal pain due to gallstones with a suspicion of acute pancreatitis. Patients of either sex below the age of 15 years were excluded while data was collected on arrival of the patients. Patients with causes other than biliary pancreatitis were also excluded regardless of age and gender. Ranson's criteria and APACHEII were mainly used to assess the severity of the disease. Depending upon severity stratification, the patients were classified into mild and severe

pancreatitis for the sake of ongoing management. Patients with severe acute pancreatitis were shifted to ICU while mild cases were treated in the ward with a very close watch on the course of the illness.

The data was entered and coded where necessary and statistically analyzed using SPSS version 20. Descriptive analysis were done to summarize data in the form of percentages and numbers for categorical data while continuous variables were shown by using mean and standard deviation. Chi square and other statistical tests were used where necessary. A P-value of less than 0.05 was kept to determine the statistical significance.

Outcome measure

The prime outcome of the admission and treatment was considered to be mortality. Deterioration in the acute pancreatitis despite effective and efficient conservative treatment was another criterion of outcome. Development of local complications was considered serious complications and systemic involvement as life threatening complications.

Results

A total number of 237 mixed populations with symptomatic gallstone disease with a mean age of 52.38 years and Std of 13.311, range of 65 (22-87) presented with a severe abdominal pain and vomiting and were diagnosed as acute pancreatitis. Of the total number, 157 (66.24%) were females and 80 (33.75%) were males. All patients were admitted and treated in a teaching unit with full facility of laparoscopic surgery. The various diagnostic modalities used were Ultrasonography, enzyme studies, CT scanning and ERCP in selected cases. Mean APACHE II score was found to be comparatively higher in males. Co-morbidities were also common in males and contribute to the severity of the illness. There was a history of acute cholecystitis before admission in 105 (66.87%) females while only 19 (23.75%) males had a previous history of admission due to acute cholecystitis. Of the total patients 71 (45.22%) females were already diagnosed to have gallstones while only 13 (16.25%) males were diagnosed patients of cholelithiasis. The severity of the pancreatitis was determined by Ranson's criteria at admission and later on

APACHI 11 scores and patients were managed accordingly. Of the total number 59(73.75%) male patients were successfully treated by conservative treatment followed by laparoscopic cholecystectomy. Twenty one (26.25%) males developed severe disease accompanied by necrosis followed by infection of the necrosis as evidenced by CT, ARDS confirmed by X-ray chest showing bilateral infiltrates and refractory hypoxemia, pleural effusions and were kept in ICU for a couple of weeks but 16 (20%) finally succumbed to death due to widespread necrosis and hemorrhagic pancreatitis leading to multiple organ failure as evidenced by multiple organ

dysfunction score. Various local and systemic complications and their incidence in both sexes are shown in **Table-1**. Of the females, 155 (98.72) patients were successfully treated by conservative treatment and hospitalization. In 15(16.85%) patients ERCP was combined with conservative treatment with complete recovery. Eighteen (7.59%) patients developed severe hemorrhagic pancreatitis and died due to multiple organ failure giving rise to an overall mortality of 7.59%. **Table-II** shows the outcome, initial measures and the mortality in both sexes. The overall mortality in males is significantly high as shown in the Table-II.

Table-1. Local and systemic complications in both sexes

Local complications			Multiple organ failure		Total
			yes	No	
Necrosis	Sex	Males	13		13
		Females	1		1
peripancreatic fluid collections	Sex	Males	2	65	67
		Females	0	156	156
Total	Sex	Males	15	65	80
		Females	1	156	157
Total			16	221	237

Table-II. Sex, Initial measures and Mortality

Mortality		Initial measures		Total
		conservative treatment in mild cases	Aggressive approach in severe cases	
Died	Sex	Males	16	16
		Female	2	2
Survived	Sex	Males	59	64
		Female	148	155
Total			207	237

Discussion

Acute pancreatitis, although not a very common disease but is a killer disease especially so in smoker males. It imposes a lot of social, mental and economical trauma to the patient. Majority of these patients run a mild course which is either self limiting or is well controlled by conservative measures. It's a common practice that acute pancreatitis is the last diagnosis which strikes our mind when we receive a patient with severe abdominal pain. This attitude has led to a lot of disastrous results in the past. With the ongoing awareness and development in the healthcare system, there has been a decline in the mortality of this disease but despite that a number of people die during the first week of illness.⁽¹⁵⁾ To identify the severe disease is a very vital step in the management of the disease as complicated cases have a significantly high mortality.⁽¹⁶⁻¹⁷⁾ Our results are focused on the severity and incidence of acute pancreatitis in male subjects compared to their female counterparts. There is a consensus that in men the disease suffers a very serious and potentially lethal course as they have more co-morbidities and reserve.⁽¹⁸⁻²¹⁾ This is contrary to the belief of many other authors who think that females are more prone to develop gallstone pancreatitis.⁽²²⁻²³⁾ In our study, more elderly males developed multiple organ failure and other local and systemic complications compared to females. This is consistent with the findings of other authors.⁽²⁴⁾ In our study the history of most male patients was suggestive that they had multiple mild attacks previously but since they could not afford to stay away from job, they did not pay much attention. This is probably the reason that in third world man is the earning member of whole family and that's why they keep delaying treatment till such time that it becomes unbearable. This restrained attitude to a potentially dangerous problem further worsens the condition and increases mortality rate. This is consistent with the findings of many similar studies who claim higher morbidity and mortality in elderly males presenting late in the course of the disease.⁽²⁵⁻²⁶⁾ This sex difference is, however, contradicted by Lankisch PG et al,⁽²⁷⁾ showing their reservation on this issue. There is a continuous debate on the effects of acute pancreatitis on the outcome, severity and

incidence in the males and females. Generalizations can only be made with further randomized control trials with a high number of patients with focus on such differences as we discussed.

Conclusion

This study claims a comparatively increased vulnerability and severity of developing acute pancreatitis in males due to gallstone disease. We recommend further studies in this area to establish consensus on this disputed issue.

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