Original Article

Experience of managing acute pancreatitis in a surgical unit of a tertiary care hospital

Haroon ur Rashid [1], Ihtasham Muhammad Ch [2], Ahmad Raza [3], Muhammad Asghar [4], Hamid Rasheed Goreja [5], Saba Maqsood [6]

[1] Consultant Surgeon, KRL hospital Islamabad.
[2] Associate Professor Surgery, Al-Nafees Medical College & Hospital Islamabad.
[3] Associate Professor Surgery, Islamabad Medical & Dental College.
[4] Consultant Surgeon, POL hospital Khor
[5] Consultant Surgeon, Social Security Hospital RWP
[6] Consultant Gynaecologist, Razi Hospital RWP

Author`s Contribution
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Corresponding Author
Dr Ihtasham Muhammad Ch., Associate Professor Surgery, Al-Nafees Medical College & Hospital Islamabad.
E-mail: ihtashamdr@gmail.com

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Abstract

Objective: To study the etiology, diagnosis, treatment and complications of acute pancreatitis in a tertiary care hospital.

Methodology:

Study Design: It was a descriptive study.

The study was conducted at Surgical Unit of Benazir Bhutto Hospital (BBH) Rawalpindi from 1st January 2014 to 31 July 2017. All the patients who presented in emergency with abdominal symptoms and diagnosed as a case of acute pancreatitis were included in the study. All the data of gender, age, serum amylase & lipase, etiology, CT severity index, Ranson's criteria, complications, mortality and management were noted on a predesigned proforma. Percentages and frequencies were calculated for all the data by SPSS 21 version.

Results: Total 161 patients were included in the study, with 60.9% females and 39.1% males. Maximum patients 31% were from age group of 26 to 40 years of age and minimum 1.2% from 71 to 85 years. Gall stones were the major cause of the disease contributing 67% of cases. At admission Ranson's score of the maximum patients 32.2% had total score of 1, While only 1.2% had moderate pancreatitis. After 48 hours of admission 24.2% had 2 score while only 1.2%had severe pancreatitis. The radiological CT severity index 82.6% patients had mild pancreatitis while1.2% patients had severe disease. 93.1% patients were managed conservatively, 1.9% patients went Cystogastrostomy, 1.2% patients needed Exploratory laparotomy and 1.2% patients went for Pancreatic Necrosectomy. On calculating the morbidity 67.7% patients had no significant morbidity. 32.3% had complications including pleural effusion, ascites, pancreatic necrosis, pseudo cyst formation, shock, acute renal failure and multi organ failure. Overall mortality rate was 3.7%.

Conclusion:

Acute pancreatitis in our set up is mainly due to gall stones. A multidisciplinary approach, measurement of severity of disease with computerized tomography scan and Ranson's scoring system is always helpful in disease management and its complications.

Key Words :

Acute pancreatitis, Gall stones, Ranson's scoring, Pancreatic necrosis, Pseudocyst.

Introduction

Patients presenting in emergency department with acute abdomen, acute pancreatitis is one of leading life threatening cause[1]. The incidence varies from 20 to 80 cases in 100,000 persons annually in different parts of world[2]. The incidence is increasing from last 40 years

as reported in different countries[3]. From etiological point of view gall stones and alcohol is the major contributor of acute pancreatitis[4]. The disease may be in mild form and self limiting and can lead to life threatening complications. The severity of disease is divided in 3 grades. Mild acute pancreatitis is with no organ failure and no local complications. Moderately severe acute pancreatitis is labelled to those cases having local complications or transient organ failure of less than 48 hours. Third grade is severe pancreatitis, in which there is persistent organ failure of more than 48 hours[5].

Severity of disease and prognosis of the disease assessed by different investigations and different scoring systems are developed on the basis of blood investigations and radiological investigations. These criteria include Ranson's criteria, Acute Physiology and Chronic Health Evaluation (APACHE)-II scoring system, bedside index for severity in acute pancreatitis (BISAP) scores, and computed tomography severity index (CTSI). These scoring systems have almost similar predictive value for prognosis of patients [6, 7, 8]. The severity of disease is important for future admission to Intensive care unit (ICU) as well as the hospital stay of the patient. There are multiple guidelines for the management of acute pancreatitis, there were 14 guidelines published in the era of 2004 to 2008 [9]. The available guidelines overlap there modalities for investigating and treating acute pancreatitis. Despite the availability of multiple guidelines there are still challenges in the management of cases of acute pancreatitis[10]. In our country there are no such national guidelines which can determine the management plan. There are hospital policies as well as surgical unit policies in management of acute pancreatitis in our country. The purpose of our study is to identify the causes, give evidence-based recommendations for the management of acute pancreatitis and appreciate the complications in our set up.

Material and Methods

After approval from hospital ethical review board this descriptive study was conducted at Surgical Unit of Benazir Bhutto Hospital (BBH) Rawalpindi from 1st January 2014 to 31 July 2017. All the patients who presented in emergency with abdominal symptoms and diagnosed as a case of acute pancreatitis were included in the study. Patients having recurrent pancreatitis, any malignancy, diabetes, renal disease and chronic liver disease were excluded from the study.

In emergency department serum amylase, lipase and abdominal scan were done to make the diagnosis. Later on Computerized tomography (CT) scan were done to calculate CT severity index. Investigations to calculate Ranson's criteria were also carried out. Patients were managed in the surgical wards as well as in Intensive care unit, according to their disease severity. All the data of gender, age, serum amylase & lipase, etiology, CT severity index, Ranson's criteria, complications, mortality and management were noted on a predesigned proforma. Percentages and frequencies were calculated for all the data by SPSS 21 version.

Result

Total 161 patients were included in the study. Among these patient majority of the patients were female 98 (60.9%), while males were 63(39.1%) as shown in figure 1. Regarding the age of the patients maximum patients 50 (31%) were from age group of 26 to 40 years of age and minimum 2(1.2%) from 71 to 85 years of age as shown in figure2. The etiological factors of acute pancreatitis in our study showed that gall stones were the major cause of the disease contributing 108 (67%) of cases, idiopathic were 41 (25.4%), Alcohol 10 (6.2%) and drugs were only 2 (1.2%) as shown in figure3. At admission Ranson's score of the maximum patients 52 (32.2%) had total score of 1 showing mild pancreatitis. While only 2 (1.2%) had moderate pancreatitis. On calculating Ranson's score after 48 hours of admission 39 (24.2%) had 2 score while only 2 (1.2%) had severe pancreatitis as shown in figure 4. On measuring the radiological CT severity index 133 (82.6%) patients demonstrated mild pancreatitis with score of 2, While 2 (1.2%) patients had score of 10 showing severe pancreatitis as shown in figure 5. On reviewing the management maximum patients 147 (91.3%) managed in High dependency unit and only 14(8.7%) patients needed Intensive Care Unit. Similarly 150 (93.1%) patients were managed conservatively, 3 (1.9%) patients went Cystogastrostomy, 2 (1.2%) patients needed exploratory laparotomy (for drainage of pancreatic abscess and acute collection of peri-pancreatic fluid) and 2 (1.2%) patients went for Pancreatic Necrosectomy. On calculating the morbidity 109 (67.7) patients had no significant morbidity, few patients had single complication while few developed multiple so overall frequency of complications were as follows, 24 (14.9%) patients developed pleural effusion, 21 (13%) patients had ascites, 18 (11.2%) patients had pancreatic

necrosis, 11 (6.8%) patients developed pseudo cyst formation 2 (1.2%) patients developed shock, 2 (1.2%) Acute Renal Failure (ARF), 2 (1.2%) developed multi organ failure (MOF) so overall 6 (3.7%) patients had mortality as shown in table figure6.

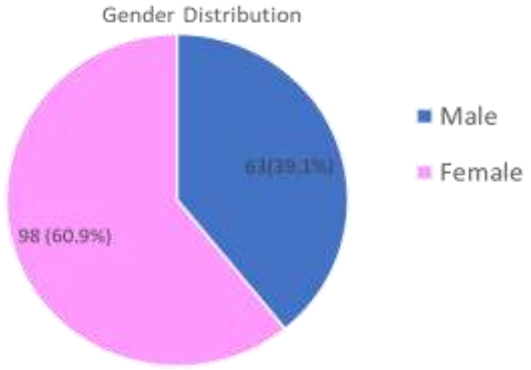

Figure 1: Gender distribution of patients included in study. N=161

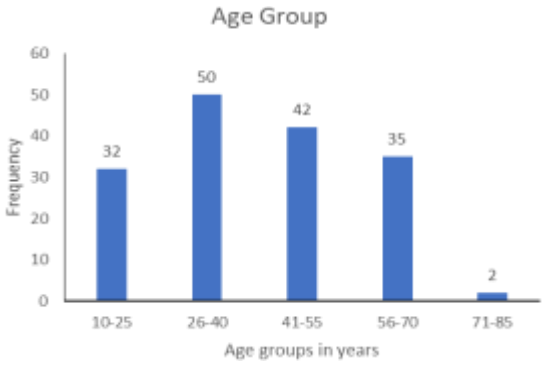

Figure 2: Age distribution of patients included in study in different age groups N=161

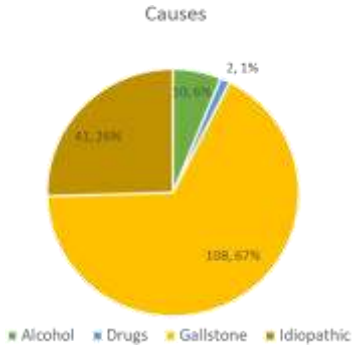

Figure 3: Different etiological factors of acute pancreatitis in patients of study N=161

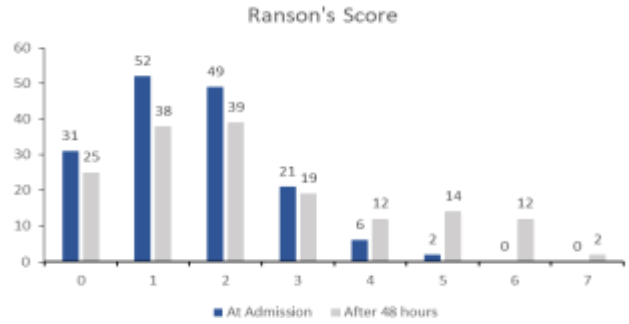

Figure 4: Ranson's Score after 24 & 48 Hours of admission in patients included in study N=161

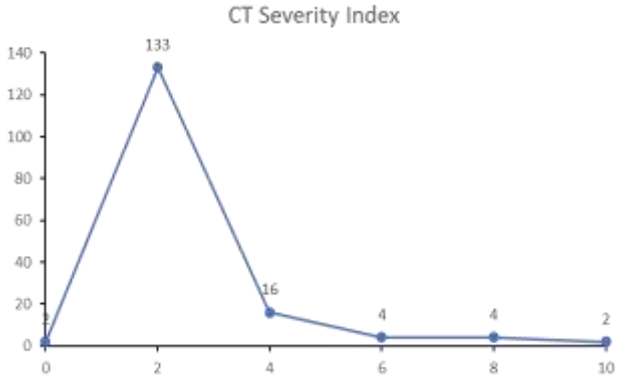

Figure 5: Computerized Tomography Scan Severity Index of Acute Pancreatitis patients N=161

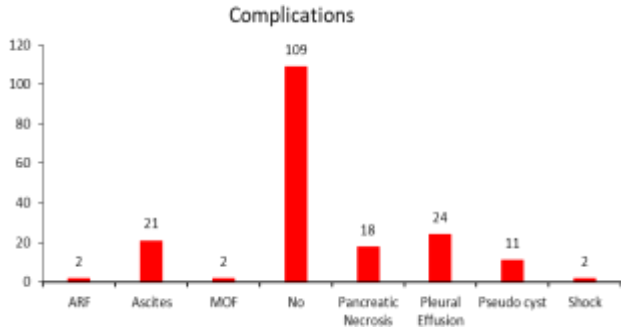

Figure 6: Frequency of complications after acute pancreatitis patients of study N=161

Discussion

Pancreatitis is quite a large spectrum disease. It can present from non complicating mild pancreatitis to severe pancreatitis with multiple local & systemic complications. So the outcome depends on the

etiology, co morbid conditions and management modalities used for the patient. In a tertiary care setup one should reconsider their management plans by regularly reviewing their past experience.

The diagnosis of acute pancreatitis in our study was mainly related to clinical presentation of severe abdominal pain and laboratory findings of elevated levels of serum amylase and serum lipase. Quinlan JD also used the same criteria in diagnosing acute pancreatitis in his study[11]. If we compare the gender distribution our results are comparable to local study, Ahmed R et al[12] reported the higher frequency of females like our study while, Garber A et al[13] showed higher incidence in male that might be due to Alcohol use is high in these societies. On considering the etiology Alcohol is the top most cause as shown by Li J at el [14] while in our study gall stones are the major cause which are supported by local study by Shamim Qureshi at el [15]. The management of acute pancreatitis is entirely dependent on the severity of the disease. There are different scoring systems to measure the severity of disease. In our study the severity of disease is mainly dependent on CT scan and Ranson's Criteria, the same parameters were used by Waller A et al[16] and Aswani Y at el[17]. In our study we have managed maximum cases with conservative management with resuscitative measures and prophylactic antibiotics and enteral nutrition. Janisch NH et al also managed these cases in our line of treatment[18]. Management of patients were carried out at surgical wards and those having unstable vitals and developed systemic complications were shifted to intensive care unit. Only 14 patients out 161 needed ICU care in our study. Majority were settled in the wards. We had observed the following complications in less than one 3rd of total patients admitted with acute pancreatitis. These include shock, ascites, pleural effusion, pancreatic pseudo cyst formation, necrotizing pancreatitis, acute renal failure and multi organ failure. In our study we managed these complications by Endoscopic Retrograde Cholangio Pancreatography (ERCP), exploratory laparotomy (for drainage of pancreatic abscess and acute collection of peri-pancreatic fluid), Necrosectomy and Cystogastrostomy. Baig SJ et al and Frossard et al in their study also observed the similar complications in their study and mentioned almost the similar procedures as we discussed in our study[19,20]. On reviewing the overall mortality we had 3.7% overall mortality as compare to international literature by Popa et al showed 21.1% overall mortality[21] while a local study by Azeem Taj et al also documented 20 % mortality[22]. The disparity with international study and local study may be due to the difference in sample size between the studies. The other factor which may cause the change in the results is the etiology of the disease and the severity of disease.

The spectrum of acute pancreatitis is very vast and it includes a vigilant management plan. The patients presenting in surgical emergency with severe abdominal pain must have a differential diagnosis of acute pancreatitis. Because sooner it is diagnosed the better will be the outcome. Categorization of disease with respect to its severity is also a cornerstone in management, for this purpose all the best available relevant blood and radiological investigations should be carried out. A multidisciplinary approach by radiologist, physician, intensivist, nutritionist and surgeon results the best possible results.

Conclusion

Acute pancreatitis in our set up is mainly due to gall stones. A multidisciplinary approach, measurement of severity of disease with computerized tomography scan and Ranson's scoring system is always helpful in disease management and its complications

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