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Frequency of Acute Pancreatitis in Patient Presenting With Acute Abdomen

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ABSTRACT

Background: Acute abdomen pain, a nontraumatic abdominal pain of shorter than seven days' duration, is a frequent presenting complaint with broad differential diagnosis. Acute pancreatitis (AP) is an extremely frequent GI disease and the incidence of AP has risen over the last decade across the world. Gallstone Alcohol and hypertriglyceridemia are the most common causes of AP. **Objective:** To figure out the frequency of acute pancreatitis among patients with acute abdomen. **Methodology:** The study was cross-sectional and was carried out in surgical department of Ayub Teaching Hospital, Abbottabad. 121 patients were seen coming with acute abdomen for the duration from January 2025 to May 2025. Non-probability consecutive specimen was used for sampling. **Results**: The study's participants ranged in age from 18 to 60, with a mean age of 37.2 ± 6.2 years, mean complaint duration of 1.26 ±0.52, and mean BMI was 24.4 ±3.4. Frequency of acute pancreatitis was 11(9.1%) out of total 121 patients of acute abdomen, diabetes mellitus in 22(18.2%) and hypertension in 46(38%) patients. On data stratification there was statistically significant Diabetes mellitus and acute pancreatitis are related. As clear from table no-3. There was no association between acute pancreatitis and hypertension, gender and patient's BMI. **Conclusion:** This study suggests that nearly one in ten patients presenting with acute abdomen may have acute pancreatitis and the diabetic patients are at increased risk than normal population. The emergency surgeon evaluating acute abdominal pain should maintain high suspicion for pancreatitis in individuals with diabetes. Early recognition, targeted biochemical and imaging investigations in these individuals may facilitate in prompt diagnosis, appropriate management, and reduction of morbidity/mortality

INTRODUCTION

With a wide differential diagnosis, acute abdominal pain characterized by nontraumatic abdominal pain that lasts less than seven days is a frequent presentation. Acute abdominal pain, which can be initiated by infections, inflammation, vascular compromise, or obstruction, must be addressed very promptly. Patients are usually very ill-appearing and present with sudden onset abdominal pain with associated nausea or vomiting. If a patient presents with an acute abdomen, it is important that he or she undergoes a detailed examination to identify the localization or generalization of pain in case there is free air. 2.

It is important to follow through with a physical exam that involves auscultation of bowel sounds and examination for signs of rebound and guarding since these are indicative of peritonitis. Acute abdomen is a presentation of many conditions such as appendicitis, perforated peptic ulcers, acute pancreatitis, ruptured sigmoid diverticulum, ovarian torsion, volvulus, ruptured aortic aneurysm, and splenic, hepatic, or ischemic bowel injury. 3, 4.

It is important to treat and diagnose potentially life-threatening causes of acute abdomen promptly. Evaluation and treatment should occur at the same time. 5. Radiological and hematological investigations are done. In the very ill patients above 40 years, ECG (12 lead) may be employed to eliminate myocardial infarction as a cause of acute abdominal pain. Checking whether a patient with mesenteric ischemia is in atrial fibrillation is also important. Typically, lipase, metabolic panel, and complete blood count (CBC) are done. 6.

Acute pancreatitis (AP) is a prevalent gastrointestinal illness that has spread globally in the last decade. 7. Alcohol, the most frequent causes of AP are gallstones and hypertriglyceridemia 8. The overall causes of AP may be different globally. Between 2011 and 2017, 5146 adult patients of AP were recruited by He et al. to explore the differences in the etiology of the disease. They discovered that though the diagnosis of acute biliary pancreatitis (ABP) was declining, alcohol-related AP was on the rise. 9.

Festivals and seasons also had fluctuations in the incidence of ABP and hypertriglyceridemia-AP, possibly due to individuals consuming more fatty foods. 9.

In research conducted by Abdullah MT, et al. it has demonstrated frequency of acute pancreatitis was 13% among patient presenting with acute abdomen.10

There is lack of local statistics on prevalence of acute pancreatitis in Abbottabad. Conducting a focused study would be hugely beneficial to assess disease burden, understand local risk factors, formulate management strategies and ultimately improve diagnosis and outcomes of patients presenting with this serious medical condition. The results could have important healthcare and economic implications by guiding policies around prevention and optimal utilization of available resources.

MATERIALS AND METHODS

A cross-sectional study was conducted at surgical department of Ayub Teaching Hospital, Abbottabad from January 2025 to May 2025.

Sample size: 121

With a 95% confidence interval, 6% margin error, and a predicted 13% prevalence of acute pancreatitis among patients presenting with acute abdomen, the WHO sample size program calculates the required sample size. 10.

Method of sampling: Consecutive non-probability sampling.

Inclusion Criteria:

- Age between 18 to 60 years
- Both genders
- Acute abdomen as per operational definition

Exclusion Criteria:

- H/o pancreatic or periampullary cancer
- H/o chronic pancreatitis
- H/o perforation of the gut
- H/o diabetic ketoacidosis

Method for Gathering Data

Those patients who admitted in surgical department (Surgical C Ward) of Ayub Teaching Hospital, Abbottabad and fulfilling the inclusion criteria were selected. History and demographic information was documented and baseline investigation was done. After clearance, informed written consent was obtained from all the patients.

Basic demographics like age, sex, symptom duration, occupation, education, socioeconomic status, residential status, hypertension, diabetes and BMI in Kg/m2.

Routine investigations i.e., Chest x-ray, liver enzymes, urine R/E, renal function tests, and complete blood count, 12 lead ECG, viral serology and investigations to confirm the diagnosis i.e., s/amylase, s/lipase, USG abdomen were conducted.

Acute pancreatitis were documented by operational definition and reported on proforma specific (Annexure-I).

Data Analysis

Data were computed through statistical analysis software (SPSS: V26). Qualitative variables such as gender, occupation, education, socioeconomic status, hypertension, diabetes, residential status and acute pancreatitis were described by the use of frequencies and percentages. Quantitative variables such as age, history of complaints and BMI were computed through mean ±SD or median (IQR). Following the test for normality by Shapiro wilk test acute pancreatitis was stratified by age, gender, duration of illness, profession, education, socioeconomic status, residential status, hypertension, diabetes and BMI. Post stratification chi-square or Statistical significance is defined as p≤0.05, and Fisher's exact test was employed.

RESULTS

Age group in this research was 18 to 60 years with mean age being 37.2 ± 6.2 years, mean duration of complaints 1.26 ±0.52, and mean BMI was 24.4 ±3.4 as depicted in Table-1

Frequency of acute pancreatitis was 11(9.1%) among a total of 121 patients presenting with acute abdomen, diabetes mellitus was seen in 22(18.2%) cases, hypertension was seen in 46(38%) cases as depicted in table-2

On data stratification there was a statistically significant association between diabetes mellitus and acute pancreatitis as evident from table no-3. There was no significant association between acute pancreatitis and hypertension, gender and patient's BMI as evident from table no-3

Table 1

(n=121)

Serial No	Demographics	Mean ± SD
1	age	37.2 ± 6.2
2	BMI in kg/m2	24.4 ±3.4
3	Duration of complaints in days	1.26 ±0.52

Table 2

(n=121)

Variables		Frequency	Percentage
Acute pancreatitis	Yes	11	9.1
	No	110	90.9
	Total	121	100.0
Diabetes mellitus	Yes	22	18.2
	No	99	81.8
	Total	121	100.0
Hypertension	Yes	46	38.0
	No	75	62.0
	Total	121	100.0
Gender	Yes	46	38.0
	No	75	62.0
	Total	121	100.0

Table 3

(n=121)

Variables		Acute Pancreatitis			p-value
		Yes	No	Total	
Hypertension	Yes	7	39	46	0.066
	No	4	71	75	
	Total	11	110	121	
Diabetes mellitus	Yes	5	17	22	0.014
	No	6	93	99	
	Total	11	110	121	
Gender	Male	3	43	46	0.441
	Female	8	67	75	
	Total	11	110	121	
BMI in kg/m2	18.5 -24.5	6	59	65	0.15
	24.5 – 29.5	3	46	49	
	>29.5	2	5	7	
	Total	11	110	121	

DISCUSSION

In acute abdomen, emergency department is a frequent

presentation with both dangerous and non-dangerous intra-abdominal diseases. Intra-abdominal disease has non-specific symptoms that complicate diagnosis particularly in early stages of their disease. The major function of the emergency surgeon is to identify and stabilize potentially life-threatening conditions in speedy and affordable way.

One of the most common life-threatening conditions presented in acute abdomen is acute pancreatitis and it is associated with high mortality rate up to 20% (11). CT abdomen is perhaps the most helpful investigation in the diagnosis but surgical judgment is paramount. Majority of the cases are self-limiting and do not leave a sequela but the condition has the potential to cause fatal systemic complications which might require surgery (16). Our rates of acute pancreatitis in acute abdomen were 9.1% which is slightly lesser than the study conducted by Zahid M et al who reported 13.4% (12)

Diabetes was associated with a significantly increased incidence of AP in both age and sex (15). In research conducted by Yadav D et al demonstrated increased risk of AP by 1.5 to 3-fold in type 2 diabetes mellitus patients (14). In another research conducted by Richardson A et al demonstrated that there is bidirectional relationship between AP and diabetes which is parallel to our research demonstrating positive correlation between AP and diabetes. In Richardson A research they had even greater frequencies of AP if they had history of hyperglycemic crisis (13). AP as per BMI, in our study did not correlate which is consistent with study by Yadav D et al that demonstrated abdominal adiposity rather than body mass index increased the risk of AP. Patients who had waist circumference of >105cm had 2-fold increase in risk of AP. Obstructive sleep apnea also aggravates severity of AP (14).

In one research conducted by Eland IA et al demonstrated positive correlation between AP and calcium channel blockers, potassium sparing agents but not with loop and thiazide diuretics (17). In this study hypertension did not correlate with acute pancreatitis

CONCLUSION

This study suggests that nearly one in ten patients presenting with acute abdomen may have acute pancreatitis and the diabetic patients are at increased risk than normal population. The emergency surgeon evaluating acute abdominal pain should maintain high suspicion for pancreatitis in individuals with diabetes. Early recognition, targeted biochemical and imaging investigations in these individuals may facilitate in prompt diagnosis, appropriate management, and reduction of morbidity/mortality.

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