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ORIGINAL ARTICLE

The Prevalence of Gall Stones in Acute Pancreatitis A Prospective View from Lady Reading Hospital MTI Peshawar KP

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ABSTRACT

Aim: To see the prevalence of gall stones in patients admitted at a tertiary care center with acute pancreatitis.
Methods: This is a single center based observational cross sectional study carried out from February 2022 to July 2022 on a sample of patients at casualty surgical bay and general surgical department of tertiary care hospital located in KP province of
Results: Total 106 patients were included in this study. Females 69.8% outnumbered males 30.2% with Mean SD 1.70 ± 0.461. Out of all patients admitted with acute pancreatitis 64.2% found to have no stones on ultrasound and 33% have stones identified on ultrasonography. Maximum number of acute pancreatitis found in age group 21y-30y 24.5%.
Conclusion: In our study 35(33%) found to have acute pancreatitis secondary to gall stones, 68(64.2%) found to have no stones. Females outnumbered in all age groups.
Keywords: Acute pancreatitis, gall stones, CT severity index, prevalence, LRH MTI.

INTRODUCTION

Gall stones causes variety of disease ranging from right hypochondriac pain, acute cholecystitis, bile duct stones, mirizzi syndrome, biliary pancreatitis, biliary fistula, porcelain gall bladder and so many[1]. Acute pancreatitis ranges from a mild, self-limiting disease to severe disease with organ and life jeopardizing complications. Gall stones being main culprit followed by binge alcohol drinking[2]. Hypertriglyceridemia is an uncommon but a well-established etiology of acute pancreatitis, with a reported incidence of 2-4%[3]. The worldwide incidence of Acute Pancreatitis (AP) is 34 per 100,000 people, and on rapid rise worldwide[4]. In most high-income countries, gall stones (approximately 45%) and alcohol (approximately 20%) are the two main causes of AP[5,6]. Followed by idiopathic pancreatitis, other uncommon causes are viral infections, malignant tumors, endoscopic retrograde cholangiopancreatography (ERCP), genetics, autoimmune diseases, hypertriglyceridemia, hypercalcemia, surgical trauma, cystic fibrosis, and complications from drugs or chemotherapy[7]..The diagnosis of AP is established by the presence of at least 2 of the following features : stereotypical abdominal pain, raise in serum amylase and/or lipase greater than three times the upper limit of normal, and/or characteristic findings on abdominal imaging[8,9]. Incidence of gall bladder stones is on rise globally, in Pakistan data is still insufficient but a study from southern Sindh areas of Pakistan showed 9.03%[10]. Another study from Abbottabad reflects 99.8% of stone frequency who went for cholecystectomy out of them 88% were females and 11.8% were males[11]. It has been proven through many studies[12]. Gall stones have multifactorial etiologies which includes age, gender, low fiber diet, rich carbohydrate diet, hypertriglyceridemia, high intake of refined carbohydrates, lack of physical activity, diabetes mellitus[13].

We might have larger percentages of gall stones reporting to us with spectrum of clinical presentation, varying from biliary colic, acute cholecystitis and with variable severity of acute pancreatitis. With gall stones being known culprit. However, how many of acute pancreatitis are caused by gall bladder stones is yet to established as cause. This study will not only highlight the prevalence of gall stones in all patients with acute pancreatitis, but will also reflect how many acute pancreatitis not caused by gall stones along with grading of severity of pancreatitis of acute pancreatitis on CTSI.

The objective of the study was to see the prevalence of gall stone in acute pancreatitis

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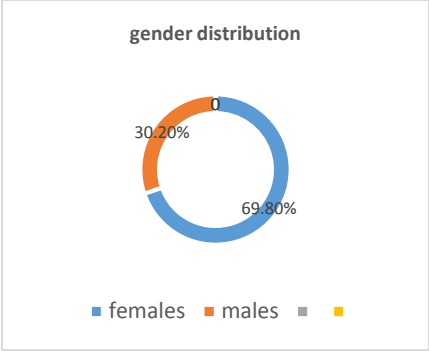
METHODOLOGY

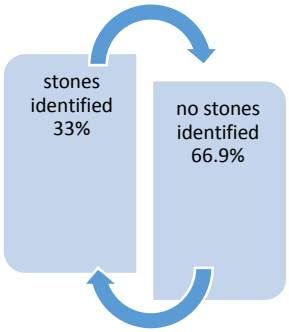
This is an observational analytical cross sectional study carried out on data collected from casualty surgical bay and general surgical ward of a tertiary care hospital located in KP province of Pakistan. Ethical clearance was taken prior to starting data collection from institutional review of ethical board LRH MTI (Ref.no.290/LRH/MTI). The study Spanned a duration of 6 months from February 2022 to July 2022 in Peshawar. Calculated sample size was (N=126) however 106 patients came during tenure of this study. Patients were selected Using simple random sampling technique. All the patients with stereotypical abdominal pain and raise serum amylase activity were detained in casualty surgical bay, after passing 16G IV line NG, Foley catheterization, patients were resuscitated with ringer's lactate, pain was relieved using combination intra venous analgesia using combination of NSAIDS, narcotics, bowel rest. After stabilization of patient baseline investigations CBC, RBS, Urea Creatine Electrolytes, Serum Amylase Levels, LFTs were done. Ultrasound abdomen was done as preliminary imaging done to rule out presence of gall stones followed by admission on surgical floor, after written, informed consent and explaining the purpose of study they were enrolled for the study. CT scan pancreatic protocol was carried out after 72h of admission to grade the severity. The patients were kept nil per oral till 24 h followed by early enteral feeding, all the patients were clinically and biochemically monitored. All the data was entered on predesigned questionnaire containing all the information about patient name, gender, age, MR no., laboratory work up and total leucocyte count, comorbid, LFTs, amylase, serum triglyceride levels, ultrasound. CT scan, complications, intervention, outcomes

All the patients who refused to participate in study were excluded from study as well the questionnaire with incomplete details were excluded from study, we included the LAMA patients who had their work up complete but left against medical advice. The data was entered and analyzed using SPSS Vr 22

RESULTS

Total 106 participants were enrolled. Out of them females were 74 and males 32. Amongst males, only 10(31.2%) found to have gall stones and 22(68.75) found to have no stones. Out of 74 female participants 27(36.4%) found to have stones and 47(63.5%) of females have no stones identified on ultrasonography. So the prevalence of gall is above mentioned population is only 33%.





Out of 106 participants 8 were in age group younger than 20 years making up 0.5% of participant's population. With youngest one being only 15 years old. Male: female ratio of 1:3. Highest frequency of Acute pancreatitis was found in age group 21-30 years 26(24.5%) out of them 4(15.3%), were males and 10(36.4%) were female. Amongst younger age group 18 out of 26 found have no stone identified on ultrasonography, 9 have gall stones identified on ultrasonography. CT severity index amongst this age group varied between 6-2 with higher score associated with complications.

Identification of stones gender wise distribution

Gender		Gall stones identified	Call stones not identified
Male	Count	10	22
	Gender wise %	31.2%	68.7%
Female	Count	26	48
	Gender wise%	35.1%	64.8%
Cumulative %		33.9%	66%

Total 33.9% of participant were identified with gall stones on ultrasonography with female in high preponderance and males being on higher number where no stones were identified on ultrasonography.

Patterns of LFTs

Out of n=106 LFTs done, 21(19.8%) were normal LFTs. 12(57.1%) of normal LFTs found to have no stones identified on ultrasound, and 7(33.3%)found to have stones. 85(80%) out of n=106 LFTs, were deranged. 47(55.2%) of patients with deranged LFTs found to have no stones on ultrasound and 28(32.9%) of patients with deranged LFTs found to have stones identified on ultrasound.

CT Score

Not done	36	34.0
2	16	15.1
3	12	11.3
4	10	9.4
5	4	3.8
6	7	6.6
7	1	.9
8	13	12.3
10	3	2.8

in patient amongst those CT scan pancreatic protocol was done out of them 13(12.2%) found to have stones and 23(21.6%) found to have no stones which is statistically a higher percentage.

DISCUSSION

Acute pancreatitis (AP) is defined as an acute inflammatory process involving pancreas with abrupt onset of symptoms, in the absence of post necrotic damage to pancreas, results in complete resolution of morphology, and symptoms and provided the triggering cause is reversible there will be no further attacks. The commonest causes for AP are gallstones (40–65%) and alcohol (25–40%), and the remainder (10–30%) are due to a variety of causes including autoimmune and genetic risk factors[13]. Acute pancreatitis is a common disease in the surgical emergency with an annual incidence varying from 4.9 to 35 per 100,000 population[14]. As per Atlanta classification, 80% of patients with pancreatitis have mild acute pancreatitis[15]. Acute biliary pancreatitis is one of the most common types of acute pancreatitis, accounting for up to 40 to 70% of cases[16].

Gall stones is assumed to be an escapable cause of death with most expensive complications associated with it[17]. The prevalence of gall stones in patients presented to us with acute pancreatitis is 33.3%. When compared to this which is study on a city population from different health care centers[18] we have higher population in younger age group 21 years to 30 years n=26(24.5%). Females found to have a higher number in all age groups which has been reflected in many studies as well[19,20]. Our study has higher number of pancreatitis where gall stones were not identified on ultrasonography was 66.6% which is higher percentage and it is a significant burden on healthcare system and health care budget.

In our study population 61% found to have no comorbid and 45% found to have comorbid. Patients with no comorbid tends to have no gall stones identified on ultrasound 41% and only 19% found have stones identified on ultrasound reflecting event leading to acute pancreatitis secondary to gall stones multifactorial etiology leading to gall stones formation proven through 0ther studies[21,22].

CONCLUSION

Gall stones being a leading cause of acute pancreatitis worldwide with higher preponderance towards female. however, our study reflects with higher number of participants where no gall stone found. It need detailed survey on demography as well as analysis of biochemical parameters to find out more triggering factors.

Authors competing interest statement: Non

Limitations: It is a single center based study on a smaller number of patients. So results cannot be generalized to population based individuals. We have not included the risk factors to rule out population at risk of developing pancreatitis with or without gall stones.

Authors contribution: NM: Concept /supervision, **AA:** write up, **SNAS:** data analysis, **AS:** Revision of manuscript
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