

Original Research Article

A STUDY ON CLINICAL AND DIAGNOSTIC PROFILE OF NON ALCOHOLIC PANCREATITIS IN ADULTS COMING TO GENERAL SURGERY DEPARTMENT

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ABSTRACT

Background: Pancreatitis is an inflammatory condition of the pancreas that occurs when digestive enzymes activate prematurely and begin damaging pancreatic tissue. This leads to both exocrine and sometimes endocrine dysfunction, with symptoms ranging from mild, self-limiting illness to severe, life-threatening inflammation.

Materials and Methods: This was a hospital-based, observational cross-sectional study conducted in the Department of General Surgery over a period of one year. The study aimed to analyze the clinical presentations, etiological factors, and diagnostic profiles of adult patients diagnosed with non-alcoholic pancreatitis.

Results: The study included 50 non-alcoholic pancreatitis patients, mostly aged 31–40 years, with a slight female predominance. Gallstones (50%) and metabolic issues were the main causes; all patients had abdominal pain, with vomiting (74%), fever (26%), and jaundice (16%) also noted. Most cases were mild to moderate in severity based on BISAP, HAPS, and Balthazar scores.

Conclusion: This study concludes that non-alcoholic pancreatitis, mainly affecting middle-aged adults, is often linked to gallstones and metabolic issues, highlighting the need for early evaluation and preventive public health measures.

Keywords: non-alcoholic pancreatitis, Gallstones, BISAP, HAPS, and Balthazar scores.

INTRODUCTION

The pancreas is a vital gland located behind the stomach and adjacent to the small intestine. It plays a crucial role in digestion by releasing powerful enzymes into the small intestine to help break down food. Additionally, the pancreas produces the hormones insulin and glucagon, which regulate how the body uses food for energy.^[1]

Pancreatitis is a condition characterized by inflammation of the pancreas. This occurs when digestive enzymes are activated prematurely, before reaching the small intestine, leading them to attack the pancreatic tissue itself. This can result in damage to both the exocrine and, at times, endocrine components of the pancreas. The severity of pancreatitis can vary significantly—from a mild,

self-limiting illness to a severe, potentially life-threatening inflammatory response, which may lead to either temporary or permanent loss of pancreatic function.^[2,3]

There are two main forms of this disease: acute pancreatitis, which presents suddenly and lasts for a short time, ranging from mild discomfort to a critical condition; and chronic pancreatitis, which involves prolonged inflammation and often follows an acute episode.^[4,5] The causes of pancreatitis can differ based on region but commonly include alcohol consumption, gallstones, metabolic disorders, and certain medications.

Diagnosing pancreatic inflammation can be challenging due to the organ's location and overlapping symptoms with other abdominal conditions. While acute pancreatitis can usually be

diagnosed through clinical evaluation and routine laboratory tests, chronic pancreatitis is more complex and harder to detect through biochemical or clinical means.^[6]

The objective of this study is to evaluate the clinical presentation and diagnostic features of non-alcoholic pancreatitis in adult patients attending the general surgery department.

MATERIALS AND METHODS

Study Design and Setting

This was a hospital-based, observational cross-sectional study conducted in the Department of General Surgery over a period of one year. The study aimed to analyze the clinical presentations, etiological factors, and diagnostic profiles of adult patients diagnosed with non-alcoholic pancreatitis.

Study Population

A total of **50 adult patients** (aged >18 years) presenting with clinical and radiological features suggestive of **acute or chronic non-alcoholic pancreatitis** were included in the study. Only patients with a **confirmed diagnosis of pancreatitis** and **no history of alcohol intake** were enrolled.

Inclusion Criteria

- No history of alcohol consumption (confirmed via patient history).
- Patients presenting to the general surgery department with symptoms such as abdominal pain, vomiting, fever, or jaundice.
- Patients who underwent appropriate laboratory and imaging investigations.

Exclusion Criteria

- Patients with a history of alcohol intake.
- Patients with pancreatitis secondary to trauma or postoperative complications.
- Incomplete clinical or diagnostic data.

Data Collection

After obtaining informed consent, detailed clinical history and examination findings were recorded. The following data points were collected:

- **Demographic profile:** Age and gender.
- **Clinical presentation:** Nature and duration of symptoms including abdominal pain, vomiting, fever, and jaundice.
- **Etiological evaluation:** Gallstone disease, serum triglyceride levels, serum calcium, parathyroid hormone levels, and idiopathic causes.
- **Diagnostic assessment:**
 - Blood investigations were done.
 - Imaging studies including abdominal ultrasonography and contrast-enhanced computed tomography (CECT).
 - Severity assessment using **BISAP score**, **HAPS score**, and **Balthazar CT severity index**.

Statistical Analysis

The collected data were compiled and analyzed using Microsoft Excel. Descriptive statistics were used to express categorical variables as frequencies and percentages.

RESULTS

A total of 50 adult patients with non-alcoholic pancreatitis were included in the study, comprising 23 males (46%) and 27 females (54%). The majority of patients (36%) were in the 31–40 years age group, followed by 22% in the 41–50 years range. All patients presented with abdominal pain (100%), while 74% had associated vomiting, 26% had fever, and 16% had jaundice. The most common etiological factor was gallstones (50%), followed by elevated triglyceride levels (28%), hypertriglyceridemia (10%), hyperparathyroidism (6%), and idiopathic causes (6%). Based on severity assessment, 86% of patients had a BISAP score less than 3, indicating mild disease. HAPS scores were 1 or 2 in 82% of cases, again reflecting low disease severity. Radiologically, 68% of patients had a Balthazar score of 3–5 (moderate severity), while 16% showed severe changes (scores 6–9). Overall, the findings suggest that most cases were of mild to moderate severity, with gallstones and metabolic abnormalities being the leading causes.

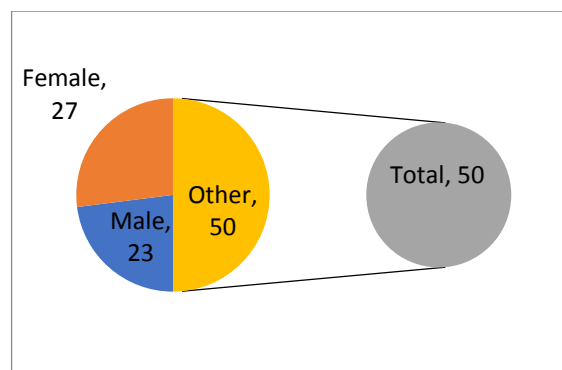


Chart 1: Distribution of cases according to gender

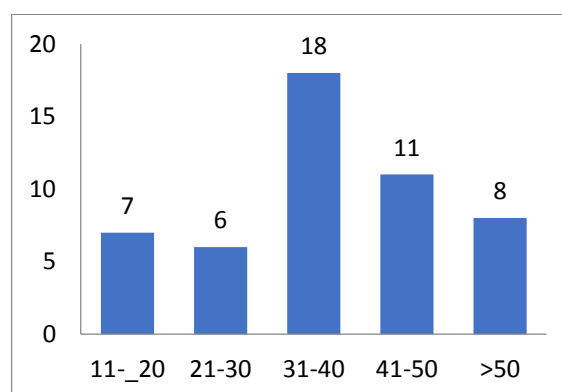


Chart 2: Distribution of cases according to age

Table 1: Distribution of cases according to symptoms

Symptoms	Number of cases	Percentage
Abdominal pain	50	100%
Abdominal pain with fever	13	26%
Abdominal pain with vomiting	37	74%
Abdominal pain with Jaundice	8	16%

Table 2: Distribution of cases according to etiology

Etiology	Number of cases	Percentage
High triglyceride	14	28%
Gall stones	25	50%
Hypertriglyceridemia	5	10%
Hyperparathyroidism	3	6%
Idiopathic	3	6%
Total	50	100%

Table 3: Distribution of cases according to BISAP score

BISAP score	Number of cases
<3	43
>3	7
Total	50

Table 4: Distribution of cases according to HAPS score

HAPS score	Number of cases
1	29
2	12
3	5
4	4
Total	50

Table 5: Distribution of cases according to Balthazar score

Balthazar score	Number of cases	Interpretation
0-2	8	Mild
3-5	34	Moderate
6-9	8	Severe
Total	50	

DISCUSSION

The present study evaluated the clinical and diagnostic profile of 50 adult patients with non-alcoholic pancreatitis at Baba Kinaram Autonomous State Medical College, Chandauli, Uttar Pradesh. A slight female predominance (54%) was observed, which aligns with previous studies such as Yadav et al. (2002), who attributed the higher incidence in females to the predominance of gallstone-related pancreatitis in women.^[7] The most affected age group was 31–40 years, consistent with findings by Kapoor et al. (2018), who reported similar age distribution in non-alcoholic pancreatitis cases in North India.^[8] Clinically, all patients presented with abdominal pain, and the majority had associated symptoms like vomiting (74%), fever (26%), and jaundice (16%), reflecting a typical presentation of acute pancreatitis as documented by Reddy et al. (2016).^[9] Gallstones were the leading cause in our study (50%), followed by hypertriglyceridemia (28%), idiopathic causes (6%), and hyperparathyroidism (6%). This pattern matches the global trend reported by Yadav and Lowenfels (2006), who found gallstones responsible for up to 70% of non-alcoholic pancreatitis cases,^[10] and Nair et al. (2000), who noted an increasing role of hypertriglyceridemia in metabolic pancreatitis.^[11]

Severity assessment using BISAP scores revealed that 86% of patients had scores <3, indicating mild disease, similar to the distribution seen in the work of Papachristou et al. (2010), who emphasized the value of BISAP in predicting complications and outcomes.^[12] HAPS scoring further supported this, with 82% of cases scoring 1 or 2, suggesting favorable prognosis, in agreement with George et al. (2009), who showed that lower HAPS scores correlate with mild disease and fewer complications.^[13] Radiological severity assessed by Balthazar scoring placed most patients (68%) in the moderate range (scores 3–5), consistent with Bollen et al. (2007), who highlighted that these scores often correspond to interstitial pancreatitis with local inflammation.^[14]

Compared to other studies, our findings reiterate the dominance of gallstones and metabolic syndrome as key non-alcoholic triggers, while also highlighting the importance of thorough etiological evaluation in idiopathic and recurrent cases. The demographic and clinical trends in our study closely mirror regional and international data, emphasizing the need for early identification, risk stratification, and management. Preventive strategies such as cholecystectomy and lifestyle modifications to control lipid levels could significantly reduce the burden of non-alcoholic pancreatitis. Overall, the

study underscores that most non-alcoholic pancreatitis cases are mild to moderate in severity and respond well to supportive care, but a subset of patients remains at risk for complications, warranting careful monitoring and follow-up.

CONCLUSION

Non-alcoholic pancreatitis primarily affects middle-aged adults and is most commonly caused by gallstones and metabolic disorders. Accurate clinical evaluation and severity scoring can aid in timely intervention and improved outcomes. Public health initiatives aimed at gallstone disease and metabolic risk factors could help reduce the incidence of non-alcoholic pancreatitis in the future.

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