

Clinical Profiling of Cholelithiasis Patients at a Tertiary Care Facility: A Cross-Sectional Study**Jyotirmaya Nayak¹, Nilamadhaba Prusty², Nagendra kumar Rajsamant³, Sridhar Panda⁴, Bibhas Kumar Sahu⁵**¹Associate Professor, Department of General Surgery, SCB Medical College, Cuttack²Assistant Professor, Department of ENT, FM MCH, Balasore³Assistant Professor, Department of General Surgery, SCB Medical College, Cuttack⁴Assistant Professor, Department of General Medicine, SCB Medical College, Cuttack⁵MBBS Final Year, SCB Medical College and Hospital, Cuttack

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Corresponding author: Dr. Sridhar Panda

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Abstract:**Background and Goals:** Cholelithiasis is a chronic, recurring illness affecting the hepatobiliary system. Gallstones are a leading cause of illness and death worldwide. Gallstones affect around 10% of individuals, a prevalence that has been increased by recent dietary changes. This study aims to evaluate demographic characteristics, various presentation modes, treatment techniques, and following results.**Methodology:** A one-year prospective study comprising 123 individuals with cholelithiasis was carried out. Epidemiological variables, clinical profiles, diagnostic tests, treatment approaches, and results were all thoroughly examined.**Results:** The cohort's average age was 36.95 years, with a female-to-male ratio of 1.41:1. Pain in the abdomen was shown to be the most common symptom. All patients had gallbladder stones detected by ultrasonography, with 30.89% getting open cholecystectomy and 65.04% undergoing laparoscopic cholecystectomy. There was a 5% conversion rate from laparoscopic to open cholecystectomy. The typical postoperative stay for laparoscopic cholecystectomy was three days, but open cholecystectomy required a seven-day stay.**Conclusion:** Laparoscopic cholecystectomy is a better surgical technique, with less postoperative discomfort, a shorter hospital stay, and improved cosmetic results.**Keywords:** Cholelithiasis, Cholecystectomy, Gallstones, Humans.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

Cholelithiasis is one of the most common disorders worldwide, and it is a substantial contributor to abdominal morbidity. Gallstone disease incidence has grown globally, owing to dramatic changes in dietary patterns and lifestyle choices typified by increasing consumption of poor foods and increased sedentary behavior [1, 2].

The prevalence of cholelithiasis in India is believed to vary from 2% to 29%, with a greater presence in the northern states than the southern areas [3,4]. This prevalence, however, varies significantly throughout the globe. The estimated frequency in India is roughly 4%, whereas it exceeds 10% in the Western world [5].

Gallstones are often discovered accidentally in individuals with no obvious biliary symptoms, via ultrasonography, CT scans, abdominal radiography, or during laparotomy. Numerous research has been conducted to investigate the possibility of acquiring

biliary colic or experiencing substantial problems as a result of gallstone disease. Annually, around 3% of asymptomatic persons advance to symptomatic states, resulting in bouts of biliary colic. Recurrent episodes of biliary colic are prevalent once symptomatic and complex gallstone disease develops in 3 to 5% of symptomatic individuals each year [6].

Gallstones affect an estimated 20 million people in the United States, and around 1 million new instances of cholelithiasis are diagnosed each year. According to autopsy studies, the frequency in Europe is 18.5%, with Ireland having the lowest (5%) and Sweden having the highest (38%). Prevalence rates in Australia range from 15% to 25%. Arizona's Pima Indian tribe

The greatest incidence is seen in, with overall and female prevalence reaching 49% and 73%, respectively. Gallstones, on the other hand, are

uncommon in Africa, with a frequency of less than 1%, while in Japan, the incidence has climbed from 2% to 7% [6, 7].

The purpose of this research is to investigate the clinical presentation and therapy of cholelithiasis patients admitted to a tertiary level Indian hospital. The goals include investigating the epidemiological features of cholelithiasis, analyzing its clinical presentation, and evaluating the effects of different treatment methods used at the medical institution. Furthermore, the research intends to compare the postoperative results of open and laparoscopic cholecystectomy. This thorough study seeks to provide important insights into the understanding and treatment of cholelithiasis in the specific medical setting.

Methods and Materials

This prospective cross-sectional descriptive research lasted a year and was carried out in a tertiary level Indian hospital. The study included

123 patients who were hospitalized. Non-consenting patients, those with common bile duct stones, pregnant women, and people with gallbladder or hepatobiliary tract cancer were all excluded from the study. The research included individuals who had dyspepsia, acute or chronic cholecystitis, or pancreatitis, as determined by abdominal ultrasonography, which revealed gall bladder calculi.

Demographic information, prior medical history, risk factors, and dietary habits were all evaluated. Each consenting patient was subjected to a complete examination and necessary studies, with treatment options (open or laparoscopic cholecystectomy) selected by clinical and operational criteria. All patients were given antibiotics and normal care after surgery, and any problems were closely followed. Patients were given adequate postoperative care instructions, food suggestions, and frequent follow-up visits to the surgical outpatient department.

Table 1: Age and gender wise distribution of study participants

Age group (in years)	Female		Male	
	n	%	n	%
11-20	2	1.63	0	0.00
21-30	14	11.38	17	13.82
31-40	38	30.89	18	14.63
41-50	11	8.94	7	5.69
51-60	6	4.88	5	4.07
>60	1	0.81	4	3.25
Total	72	58.54	51	41.46

Table 2: Clinical presentation of cholelithiasis cases

Clinical presentation	n	%
Abdominal lump	0	0.00
Abdominal Pain	111	90.24
Abdominal tenderness	102	82.93
Dyspepsia	57	46.34
Fever	17	13.82
Guarding/Rigidity	25	20.33
Jaundice	11	8.94
Nausea/Vomiting	69	56.10
Risk factors present		
Alcohol	10	8.13
Diabetes Mellitus	10	8.13
Hypertension	14	11.38
Smoking	22	17.89
Tobacco	18	14.63
Non-Vegetarian Diet	64	52.03
BMI (mean ± SD)	26.45 ± 3.56	

Table 3: USG findings in cholelithiasis cases

USG finding	n	%
Multiple stones	42	34.15
Multiple stones + Thickening of GB	38	30.89
Single stone + Thickening of GB	36	29.27
Single stone	7	5.69

Table 4: Treatment of cholelithiasis cases

Treatment Approach	n	%	Mean Operative Time (Minutes)
Laparoscopic Cholecystectomy	80	65.04	52
Open cholecystectomy	38	30.89	118
Laparoscopic converted to Open cholecystectomy	5	4.07	155

Table 5: Post-operative parameters in cholelithiasis cases

Post-operative parameters	Cholecystectomy		Total
	Laparoscopic (n)	Open (n)	
Wound Infection	5	7	12
Bile leakage	1	1	2
Bile Duct Injury	1	1	2
Total	7	9	16
Hospital Stay (mean \pm SD)	3.56 \pm 2.57	7.61 \pm 2.71	p < 0.05

Discussion

Cholelithiasis is a common condition that contributes significantly to abdominal morbidity across the globe. Gallstone disease incidence has increased globally due to significant changes in dietary patterns, the predominance of high-junk diets, and an increased sedentary lifestyle [1,2].

The majority of patients in their fourth and fifth decades was a significant finding in our research, suggesting an early beginning of gallstone disease in the Indian population. This discovery is consistent with the findings of Bhatti in Lahore, Pakistan, and Muthalaisamy in Trichy. However, Veerbhadrappa in Madhya Pradesh observed a rise in incidence in India in the fifth and sixth centuries [8-10].

Females made up 41% of the participants in our research, while men made up 59%. This contrasts with Battacharya's [11] series, which revealed 71.4% females and 28.6% males. Tamhankar AP [12], Ganey et al. [13], and Major Alok Sharma et al. [14] all found a gender predominance favoring females. In the later series, there were 70% males and 30% girls.

Our findings support Shukrya Kamil Khalaf's 2016 research, which found that having a high BMI was related with an increased incidence of gallstones [9]. Similar connections between higher BMI and an increased incidence of symptomatic gallstone disease were found in Talseth's 2016 study in Sweden and Stender's 2013 study [15, 16].

Among the individuals in our study, abdominal discomfort and tenderness appeared as key clinical symptoms. The right hypochondrium was shown to be the most common location of pain, followed by the epigastrium. Prior research undertaken by Alok Sharma, Ganey, Goswitz, et al. [13,14,17] found similar clinical manifestations. All individuals had their gallbladders scanned using ultrasound, which revealed the presence of gallstones. Major Alok Sharma et al.'s [14] research bore striking similarities to the results of our study.

Laparoscopic cholecystectomy was done on 65 patients, whereas open cholecystectomy was performed on 38. The conversion rate from laparoscopic to open cholecystectomy was 5%, which was similar with prior research [18, 19].

Wound infection was the most common consequence in our research, followed by bile duct damage and bile leakage. During the follow-up period, no problems were recorded for any of the patients. Further information cannot be supplied due to the short period of the follow-up. Our findings highlight the need of bigger-scale studies with larger populations to determine the prevalence rate and best therapeutic techniques for people with cholelithiasis.

Conclusion

Ultrasonography has established as the main diagnostic method, with the majority of patients indicating numerous gallstones and gallbladder thickness. Notably, laparoscopic cholecystectomy revealed benefits over open cholecystectomy, including shorter hospital stays, less discomfort, and lower impairment levels.

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