

**SPECTRUM OF CARCINOMA GALLBLADDER**

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**ABSTRACT****BACKGROUND**

Carcinoma of gallbladder is uncommon but is a highly fatal malignancy due to late presentation. However, it is the most common malignancy of biliary tract and represents 80-90% of the biliary tract complications. The northern parts of India has high incidence of gallbladder stone disease with a rising trend in gallbladder malignancy.

**MATERIALS AND METHODS**

A total of 90 cases who reported to Department of Surgery, GSVM Medical College, Kanpur & J K Cancer Institute, Kanpur from January 2015 to June 2016 were included in this study. The trend and its magnitude were analysed.

**RESULTS**

35.5% cases were in sixth decade of life while 31.11% were in fifth decade. The male to female ratio was 2.1:1. 75.55% presented with abdominal lump and 22% with ascites at the time of presentation.

**CONCLUSION**

Carcinoma of gallbladder is a silent progressive disease with increasing risks in late presentation. Ultrasound screening may be a valuable tool for an early diagnosis, mainly where there are high incidences of gallstone disease.

**KEYWORDS**

Gallbladder, Malignancy, Icterus, Pain.

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**BACKGROUND**

Gallbladder cancer is uncommon but a highly fatal malignancy. However, gallbladder cancer is the most common malignancy of the biliary tract representing 80% – 90% of biliary tract cancers worldwide according to autopsy study.

Around 5000 new cases are diagnosed each year in USA. The worldwide incidence varies as per geographic location. High rates are seen in South American countries, particularly Chile, Bolivia, Ecuador, as well as some parts of India, Pakistan, Korea and Japan.<sup>1,2</sup>

Gallbladder cancer is the most common of all abdominal malignancies in Northern part of India. An incidence rate of 4.5 and 10% per 1,00,000 noted in males and females respectively.

80% cases of gallbladder cancer are associated with gall stone disease and 7-20% were porcelain gallbladder cases.

**Aims & Objectives**

1. Study of trend and magnitude of carcinoma of gallbladder in Kanpur and surrounding districts.
2. Study of risk factor of carcinoma of gallbladder in in Kanpur and surrounding districts.

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**MATERIALS & METHODS**

Present descriptive study was carried out in the Department of Surgery, GSVM Medical College, Kanpur, UP, India.

**Cases**

All consecutive newly diagnosed patients with GBC (outpatients & inpatients from January 2015 to June 2016) reporting in Department of Surgery, GSVM Medical College, Kanpur as well as from J K Cancer Institute, Kanpur were included.

**Diagnosis of GBC**

The diagnosis of gallbladder cancer (GBC) was made on the basis of ultrasound CT and MRI findings, imaging features and was confirmed by histology (if the patient was found to be inoperable based on imaging studies).

**Criteria for Diagnosis**

1. Clinical.
2. USG, CT & MRI.
3. Gallbladder wall thickness.
4. Liver infiltration, Jaundice & Lymph node.

**Inclusion Criteria**

Consecutive patients with GBC who were in sufficiently good physical and mental health to give reliable answers to the questionnaire were included in the study.

**Exclusion Criteria**

- Patients with any other major comorbid illness.
- Refusal to participate in the study.

**RESULTS**

These patients were mainly from Kanpur and surrounding areas. The patients' data were analysed & results are given in the following tables.

Age Group	No. of Cases	Percentage
21 - 30	00	00
31 - 40	06	6.66
41 - 50	24	26.67
51 - 60	32	35.55
61 and above	28	31.11
<b>Total</b>	<b>90</b>	<b>100</b>

**Table 1. Age Distribution of Patients**

In our study of 90 cases, we found 35.5% cases in the sixth decade (51-60 years). The second largest group (31.11%) was from 5<sup>th</sup> and 7<sup>th</sup> decade.

Age group	Male	Female
21-30	0	0
31-40	0	6
41-50	7	17
51-60	9	23
61 and above	13	15
<b>Total</b>	<b>29</b>	<b>61</b>

**Table 2. Sex Distribution**

Female to male ratio was 2.1:1 according to the above table. 61 patients out of the 90 cases were female. It shows high prevalence of gallbladder cancer in elderly females mostly above 40 years of age.

Symptoms	No. of cases	Percentage (%)
Abdominal pain	71	78.88
Weight loss	46	51.11
Nausea	34	37.77
Pruritus	23	25.55
Fever	10	11.11

**Table 3. Distribution of Symptoms**

Pain in abdomen was the most common symptom and was present in 78.88% of cases. Jaundice and weight loss were present in significant proportion of cases.

Signs	No. of cases	Percentage
Abdominal lump	68	75.55
Tenderness	38	42.22
Icterus	40	44.44
Ascites	20	22.22

**Table 4. Distribution of Signs**

75.55% of the cases presented with abdominal lump, second most common sign was tenderness in abdomen and icterus. Ascites was present in approx. 22% cases.

Socioeconomic class	No. of cases	Percentage
Upper	0	0
Upper middle	6	6.66
Lower middle	5	5.55
Upper lower	14	15.55
Lower	65	72.22

**Table 5. Socioeconomic Status**

72% of the cases belonged to lower socioeconomic class (Kuppuswamy) and 15.55% belonged to upper lower class. Only 6.66% and 5.55% patients belonged to upper middle and lower middle class.

Duration	No. of Cases	Percentage
<1 month	0	0
1-3 months	22	24.44
3-6 months	57	63.33
6 m - 1 year	7	7.78
>1 year	4	4.44
<b>Total</b>	<b>90</b>	<b>100</b>

**Table 6. Duration of Symptoms**

Most of the patients i.e. 88% (79 out of 90) had duration of symptoms less than six months. Only 12% of the patients had symptoms for more than 6 months.

Characteristics	No. of Cases	Percentage
Vegetarian	43	47.78
Non-vegetarian	47	52.22
Mustard oil users	70	77.77
Refined oil users	20	22.22

**Table 7. Relationship with Dietary Habits**

52.22% of patients were non-vegetarian and almost all other patients used mustard oil as cooking medium.

Variable	No. of Cases	Percentage
History of Typhoid	40	44.44
Family history of Ca GB	17	18.88
Cholelithiasis associated with Ca GB	73	81.11

**Table 8. History of Past or Present Illness**

40 patients (44.44%) had past history of Typhoid and 81% of the patients had gallbladder stones.

Lab Parameter	Mean	Range
Hb (g/dL)	8.1	4.2 - 12.8
S. bilirubin (mg/dL)	2.8	0.4-25.3
S. ALP (IU/L)	938.6	79.0 - 2255.0
Total Protein (g/dL)	6.9	4.8 - 8.3
S. Albumin (g/dL)	3.5	1.9-5.2

**Table 9. Lab Parameters of the Patients in the Study**

Mean Hb of the patients was 8.1 and ranged from 4.2 - 12.8 (g/dL). Maximum bilirubin level observed was 25.3 (mg/dL).

BMI	No. of Cases	Percentage
<24 (kg/m <sup>2</sup> )	17	18.88
24-25	7	7.78
26-28	39	43.33
>28	27	30
<b>Total</b>	<b>90</b>	<b>100</b>

**Table 10. Body Mass Index (kg/m<sup>2</sup>)**

73% of the patients had BMI >25 (kg/m<sup>2</sup>). Gallbladder cancer is prevalent in patients having higher BMI.

	No. of Cases	Percentage
Tobacco chewer	48	53.33
Cigarette smoking	21	23.33
Alcohol consumption	13	14.44

**Table 11. Tobacco and Alcohol Consumption**

53% patients are tobacco chewers while smoking and alcohol consumption is found in 23% and 14% respectively.

**DISCUSSION****Hospital-based Prevalence**

The total number of registries of all types of cancers in Department of Surgery, LLRH & JK Cancer Institute from January 2015 to June 2016 are 25797, out of which 90 cases are of carcinoma gallbladder.

So the hospital-based incidence showing magnitude of Ca GB is  $(90/25797 \times 1000)$  3.49 per 1000 cancer cases at Kanpur.

Results from this study shows that gallbladder cancer is predominantly a disease of elderly females; with an overall female to male ratio of 1.2:1. These results are consistent with the results of other studies as well.<sup>3,4</sup>

There is a direct link between gallstones and Carcinoma gallbladder.<sup>5,6</sup> In patients with Carcinoma gallbladder, the incidence of cholelithiasis ranges from 54% to 97%. Carcinoma gallbladder is more common in patients with Mirizzi's syndrome and typhoid carriers are a high-risk group. Moreover, porcelain (calcified) gallbladder has a high malignant potential and large, sessile polyps (more than 10 mm) are more likely to be malignant than multiple, small, pedunculated ones.<sup>7,8</sup> Polyps over 18 mm must be removed, as they are likely malignant. Approximately, 60% of tumours originate in the fundus of the gallbladder, 30% originate in the body, and 10% originate in the neck.

Gallbladder Cancer presents early in females (51 to 60 years) than males (61 years of age). Similar results were observed in other studies from India.<sup>3</sup>

Typhoid carrier state was found to be one of the important risk factors for the development of GB cancer in the current study. Chronic S. typhi infection can be carried in the GB. Several other studies also suggested an association between GB cancer and typhoid carrier state.<sup>9,10</sup> However, the association found in the current study can be only suggestive and was not confirmed by the serological examination.

In our study, most of the patients belonged to lower and upper lower socioeconomic status. There were 72.2% cases. It is reported that metabolic and lifestyle factors including obesity, dietary habits, infection and parity also contribute to the occurrence of gallbladder cancer.

The association of cholelithiasis with gallbladder carcinoma is very strong.<sup>6,11</sup> The gallstones are the commonest factor leading to gallbladder carcinogenesis.<sup>11</sup>

Signs of malignant disease on ultrasound examination include discontinuous mucosa, echogenic mucosa, and submucosal echolucency.<sup>12</sup> Diffuse thickening of the gallbladder is also common in gallbladder cancer but is also found in benign condition.

Serum carcinoembryonic antigen (CEA) greater than 4 ng/mL is 93 percent specific and 50 percent sensitive for detecting gallbladder cancer in the presence of appropriate symptoms.

A magnetic resonance (MR) scan with MR cholangiography is an ideal study.

The role of dietary factors in gallbladder carcinogenesis is now well defined. But in our study, we found non-vegetarians more prone to GBC than vegetarians. This could be due to the protective effect of vegetables on gallbladder carcinogenesis while consumption of red meat was associated with increased risk of gallbladder cancer.<sup>4</sup>

The study of was consistent with our finding that the consumption of carcinogenic impurities in mustard oil may

contribute to elevated incidence of gallbladder cancer in North India.<sup>13</sup>

**CONCLUSION**

Carcinoma gallbladder is a silent progressive disease with most of the patients presenting in an advanced stage. There is a neglect in surgical treatment of gallstone disease in spite of better imaging facilities and surgical facilities.

Due to lack of awareness, poor economic status, the rural population presents with deep jaundice and a non-resectable disease. Carcinoma gallbladder is on the rise in Kanpur area, but much could not be offered to the patients due to late presentation.

Ultrasound screening programme may be considered for its role in early diagnosis of gallbladder malignancy. It is worth studying as there are increasing incidences, mainly in northern India.

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