



## EPIDEMIOLOGY OF CARCINOMA GALL BLADDER ATTENDING RADIOTHERAPY DEPARTMENT OF A MULTISPECIALITY HOSPITAL DURING 2015-2017

**Saptarshi Banerjee\***

RMO cum Clinical Tutor, Radiotherapy, NRS Medical College Santoshpur, Kolkata-700075, West Bengal, India. \*Corresponding Author

**Subir Pal**

Medical Officer, WBHS,

### ABSTRACT

Gallbladder cancer is the most common malignancy of the biliary tract. Various epidemiological reviews have reported that incidence of Gall Bladder Cancer varies geographically, with highest incidence in Chile. Gall bladder cancer is a common cancer in the northern and Northeastern States of India and rare in southern part. Females are affected 2-6 times more than male. Cholelithiasis is one of the major risk factors associated with gall bladder carcinoma. Objective of this study is to find the epidemiological pattern of carcinoma gall bladder attending to a tertiary centre, during a span of 2 years. This study included all patients with carcinoma gall bladder attending to the department of radiotherapy, of a multispeciality hospital, in Kolkata, West Bengal, India, during the period from June 2015 to May 2017. The male-female variation, age distribution, main symptoms, presence of associated gall stones, mode of diagnosis (incidental/ non incidental), stage at diagnosis, and performance status of the patients were recorded. During the 2 years duration, from June 2015 to May 2017, total 177 patients of gall bladder carcinomas attended our department. Maximum patients are of fifth and sixth decade. Among them 136 are female and 41 are male. Male female ratio is 1: 3.32. Among these 177 patients 169 patients presented with co-existent gall stone and 8 patients without stone. So the percentage of co-existent gall stone disease in gall bladder cancers in this study is 95.48%. Maximum patients presented with abdominal pain (98) and considerable amount with jaundice (49). 10.7% patients were diagnosed incidentally during or after cholecystectomy for gall stone. Maximum patients of gall bladder carcinoma were in diagnosed in advanced stage.

**KEYWORDS :** gall bladder carcinoma, epidemiology, gall stone

### INTRODUCTION

Gallbladder cancer is the most common malignancy of the biliary tract, representing 80%–95% of biliary tract cancers worldwide, according to autopsy studies (1). Gallbladder cancer is a rare though lethal malignancy with marked ethnic and geographical variations. The presenting symptoms are typically vague so that its diagnosis commonly occurs at an advanced stage. This late diagnosis plus the anatomic feature that the gallbladder lacks a serosa culminates in a rather dismal prognosis (2-4). Various epidemiological reviews have reported that incidence of Gall Bladder Cancer varies geographically. Highest incidence rate is observed in Chile, which also has the highest mortality rate (5). Sex differences demonstrate a marked predominance of women over men worldwide, especially in northern India, Pakistan, and in American Indian females (6). Gall bladder cancer is a common cancer in the northern and Northeastern States of India (7). The six cancer registries of the Indian Council of Medical Research (ICMR) (1990-1996) show a 10 times lower incidence of GBC per 100000 in South India compared with the North. Women are affected two to six times more often than men (8). The main etiology for gallbladder cancer is some form of chronic inflammation. The overwhelming inciting factor for chronic inflammation is gallstones. 70% to 90% of all patients with carcinoma of the gallbladder have cholelithiasis (9, 10).

Objective of this study is to observe the epidemiological pattern of gall bladder carcinomas presented to a tertiary centre, of Kolkata, West Bengal, India.

### MATERIALS AND METHODS

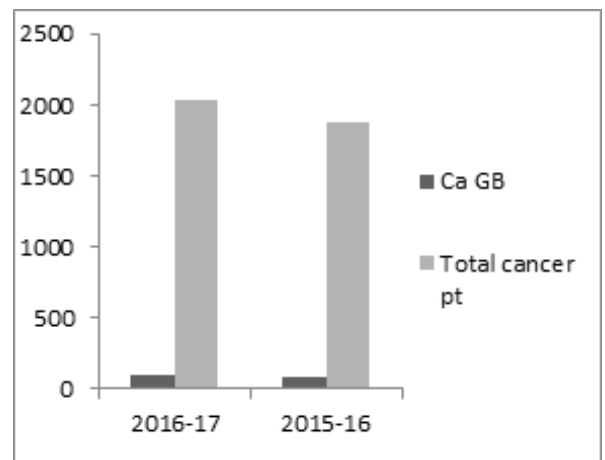
- **Patient population-** All patients with carcinoma gall bladder (biopsy proven) attending to the department of Radiotherapy, of a multispeciality hospital of Kolkata.
- **Time frame-** From June 2015 to May 2017.
- **Sample size-** 177 patients.
- **Method of data collection-** Data has been collected by retrospectively studying the hospital records of the patients of carcinoma gall bladder, of last 2 years.
- **Experiment design-** Retrospective, single institutional, descriptive study.

All patients with carcinoma gall bladder (biopsy proven) attending

to the department of Radiotherapy, of a multispeciality hospital of Kolkata, have been retrospectively analyzed to observe the epidemiological pattern of gall bladder cancer in single tertiary health care centre of eastern India.

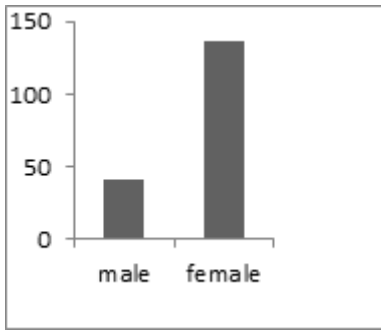
### RESULTS

A total of 177 patients of carcinoma gall bladder attended to the department during June 2015- May 2017. Total number of patients attending the department during this period is 3912. The percentage of carcinoma gall bladder among total cancer patients is about 4.5%. Among 177 patients of carcinoma GB, 97 patients attended during June 2016- May 2017, 80 patients attended during June 2015- May 2016. Among total 3912 patients with cancer, 2032 patients attended during June 2016- May 2017, and 1880 patients attended during June 2015- May 2016. So, year-wise percentage of gall bladder carcinoma among all cancer patients were 4.8% during 2016-2017- and 4.3% during 2015-2016 (fig.1).



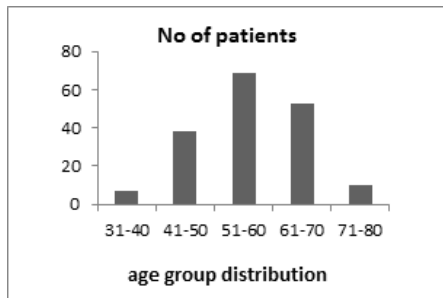
**Fig. 1- Year wise distribution of gall bladder Carcinoma**

Total 177 patients of gall bladder carcinoma attended our department during June 2015- May 2017. Among them 136 were females and 41 were males. So, male: female = 1:3.32 (fig.2).



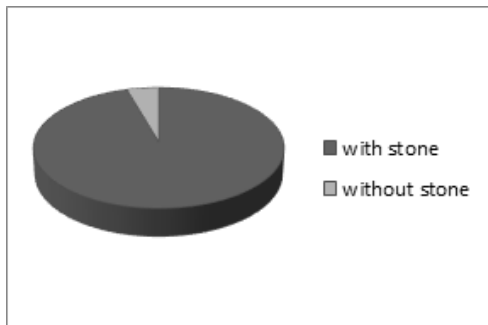
**Fig. 2- Male-female distribution**

Age distribution- only 7 patients were in between 31-40 years, 38 patients were in between 41-50 years. Maximum number of patients (69) was in the age group from 51 to 60 years followed by 53 patients from 61 to 70 years of age. Few (10) patients were in between 71-80 years (fig. 3).



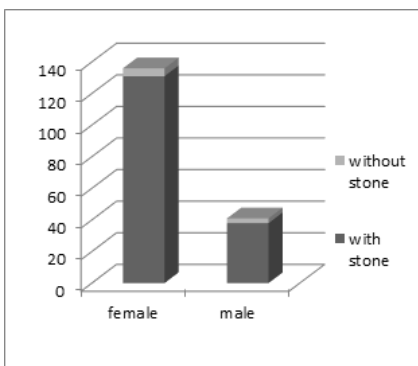
**Fig. 3- Age group distribution**

169 patients presented with co-existent gall stones. 8 patients were acalculous. So, percentage of co-existent gall stone disease in gall bladder cancers is 95.48% and percentage of acalculous gall bladder carcinoma is only 4.52% (fig. 4).



**Fig. 4- Co-existent gall stone**

Among females, 131 patients, out of 136 had gall stone and 5 were acalculous. Among males, 38 patients out of 41 had stone and 3 were acalculous (fig. 5).



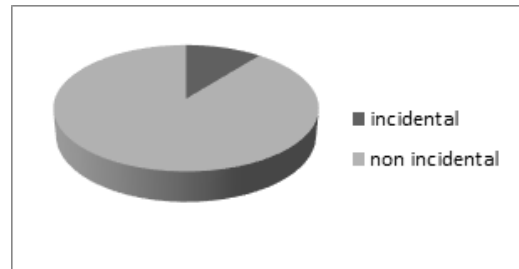
**Fig. 5- Calculous vs acalculous CA GB**

98 patients (55.37%) presented with pain, 49 patients (27.68%) with

painless jaundice. 17 (9.6%) patients presented with acid peptic disorder, and 13 (7.35%) with anorexia and weight loss.

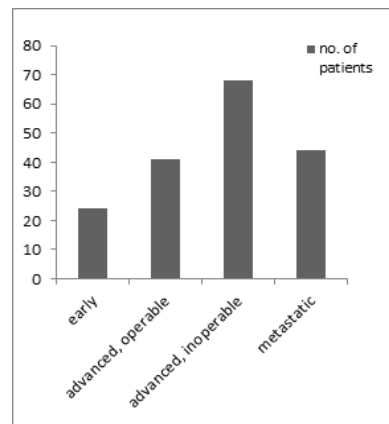
19 patients were diagnosed incidentally after cholecystectomy for gall stone disease. So percentage of incidental carcinoma GB is about 10.7% (fig. 6).

**Fig. 6- Incidental vs non incidental**



**Stage of disease at diagnosis (fig. 7)-**

- i. Early stage (Operable)- 24 (13.6%),
- ii. Locally advanced, Operable- 41 (23.2%)
- iii. Locally advanced, Inoperable- 68 (38.4%),
- iv. Metastatic- 44 (24.9%).



**Fig. 7- Stage at diagnosis**

**DISCUSSION**

Incidence of Gall bladder cancer shows wide geographic variation. Though the worldwide occurrence of gall bladder cancer is less than 2/100000 individuals, there is extensive variance (11). Residents of Indo Gangetic belt, especially females of northern India and south Karachi Pakistan have been reported as one of the highest affected regions (6). The dramatic association of GBC with female gender and certain geographical regions (mostly developing countries) has been proposed to be influenced by various female hormones, cholesterol cycling and salmonella infections (12, 13). Cholelithiasis is one of the major risk factors of gall bladder cancer. Gallbladder cancer rates correlate well with the prevalence of gallstone disease (14). Gall bladder cancer carries poor prognosis as maximum patients tend to present late, only when contiguous structures and organs, such as the bile ducts or duodenum, are involved. At this stage the tumour is usually irresectable, and therefore the majority of patients undergo palliative treatment (15). In our study, 177 patients (4.5% of all cancer patients) of carcinoma GB attended during 2 years time span. As worldwide data suggests, here also female predominates over male (3.32: 1). Maximum patients are of fifth and sixth decade. Over 95% patients were associated with gall stone. This supports the role of gall stone disease as a major risk factor for gall bladder carcinoma. The main presenting feature is abdominal pain. Around 11% patients were diagnosed incidentally. Maximum patients presented with advanced disease. Patients are treated according to stage of disease with surgery or chemotherapy or chemoradiation, or combined modalities.

## CONCLUSION

A significant number of gall bladder carcinoma patients attended the dept. of Radiotherapy of the multispeciality hospital of eastern India during a span of two years. As usual female predominates over male. Gall stone disease seems to be one of the most important risk factor for gall bladder cancer. Maximum patients present with advanced stage of disease.

## REFERENCES

1. Lazcano-Ponce EC, Miquel JF, Muñoz N, et al. Epidemiology and molecular pathology of gallbladder cancer. *CA: Cancer J Clin* 2001;2001;51(6):349–364. [PubMed]
2. Henson DE, Albores-Saavedra J, Corle D. Carcinoma of the gallbladder. Histologic types, stage of disease, grade, and survival rates. *Cancer*. 1992;70:1493–1497. [PubMed]
3. Wistuba II, Gazdar AF. Gallbladder cancer: lessons from a rare tumour. *Nat Rev Cancer*. 2004;4:695–706. [PubMed]
4. Lai CH, Lau WY. Gallbladder cancer: a comprehensive review. *Surgeon*. 2008;6:101–110. [PubMed]
5. Andia M, Ferreccio C, Gederlini A. Gallbladder cancer: trend and risk distribution in Chile. *Rev Med Chile*. 2006;134:565–574. [PubMed]
6. Randi G, Franceschi S, La Vecchia C. Gallbladder cancer worldwide: geographical distribution and risk factors. *Int J Cancer*. 2006;118(7):1591–1602. [PubMed]
7. Nandakumar A, Gupta PC, Gangadharan P, Visweswara RN, Parkin DM. Geographic pathology revisited: Development of an atlas of cancer in India. *Int J Cancer*. 2005;116:740–54. [PubMed]
8. Konstantinidis IT, Deshpande V, Genevay M, et al. Trends in presentation and survival for gallbladder cancer during a period of more than 4 decades: a single-institution experience. *Arch Surg*. 2009;144(5):441–447. [PubMed]
9. S. P. Kaushik, "Current perspectives in gallbladder carcinoma," *Journal of Gastroenterology and Hepatology*, vol. 16, no. 8, pp. 848–854, 2001.
10. T. Rustagi and C. A. Dasanu, "Risk factors for gallbladder cancer and cholangiocarcinoma: similarities, differences and updates," *Journal of Gastrointestinal Cancer*, vol. 43, no. 2, pp. 137–147, 2012.
11. Shaffer EA. Gallbladder cancer: the basics. *Gastroenterol Hepatol (N Y)* 2008;4:737–741. [PMC free article] [PubMed]
12. Pilgrim CH, Groeschl RT, Christians KK, Gamblin TC. Modern perspectives on factors predisposing to the development of gallbladder cancer. *HPB (Oxford)* 2013;15:839–844. [PMC free article] [PubMed]
13. Iyer P, Barreto SG, Sahoo B, Chandrani P, Ramadwar MR, Shrikhande SV, Dutt A. Non-typhoidal Salmonella DNA traces in gallbladder cancer. *Infect Agent Cancer*. 2016;11:12. [PMC free article] [PubMed]
14. Zatonski WA, Lowenfels AB, Boyle P, et al. Epidemiologic aspects of gallbladder cancer: a case-control study of the SEARCH Program of the International Agency for Research on Cancer. *J Natl Cancer Inst*. 1997;89(15):1132–1138. [PubMed]
15. Piehler JM, Crichlow RW. Primary carcinoma of the gallbladder. *Surg Gynecol Obstet*. 1978;147:929. [PubMed]