Original Research

Assessment of the demographic and clinicopathological outline of the patients with gall bladder cancer

Naresh Kumar Jangir[1], Tara Chand[2]

[1]Assistant Professor, Department of Surgical Oncology, National Institute of Medical Science & Research Jaipur Rajasthan;
[2]Assistant Professor, Department of Medical Oncology, National Institute of Medical Science & Research, Jaipur Rajasthan

ABSTRACT:
Introduction: Screening of pre-malignant lesions of gall bladder is mandatory for early detection of disease and presence of suspicious lesion. The aim of our study was to assess the demographic and clinicopathological outline of the patients with gallbladder cancer. **Materials and Methods:** The demographic characteristics include age, sex, and socioeconomic status. Nonclinical risk factor includes parity, obesity, menstrual status, and use of contraceptive pills among premenopausal female. Diagnosis of gallstone, serum level of triglycerides, total cholesterol, and diabetes were taken as clinical risk factor. **Result:** Nearly 44(88%) patients in study group had advanced disease (Stage 3 or 4) at presentation. The pain was the most common symptom, present in all patients studied. Jaundice was present in half of the patients (56%). Interventional biliary drainage was required in 16% of the patients. Poorly differentiated adenocarcinoma was the predominant histology seen (44%). Liver, nonregional lymph nodes, and omentum were the common sites of metastasis. Majority of the stage 4 patients had metastases to at least two organs (68%). **Conclusion:** Factors like better hygiene and water supply to prevent typhoid carriers, prevention of malnutrition, and early intervention for cholelithiasis are important.
Keywords: cholelithiasis, Gallbladder cancer, malignancy.

INTRODUCTION

Gall stones (cholelithiasis) has increasingly become a major cause of abdominal pain and discomfort in the developing world. The prevalence of gall stones is has increased in the recent years. The types of gall stones include - Mixed stones, combined stones, Pigment stones and, Cholesterol stones. Gallbladder cancer (GBC) is the most common malignancy of the biliary tract, accounting for 80%–95% of biliary tract cancers.[1] Gall bladder cancer is more common among north Indian cities and two times higher in women.[2] The incidence of gall bladder carcinoma has great geographic and ethnic variation.[3]

Gallbladder cancer (GBC) arises from the epithelial lining of the gallbladder (GB) and the cystic duct. It is the most common biliary tract malignancy worldwide and manifests as either diffuse thickening of the GB wall or as a GB mass arising from the fundus, neck or body of the GB.[4]
Most of the patients with GBC are diagnosed at an advanced stage and have dismal prognosis. Median overall survival after a diagnosis of advanced disease is around 6 months with 5-year survival rate of around 5%. Diagnosis at an advanced stage may be attributed to the fact that the symptoms mimic that of gallstone disease or acid peptic disease that are often neglected,

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complicated by difficulty in diagnosis of early GBC at an early stage with routine investigations such as abdominal ultrasonography.[5]

Screening of pre-malignant lesions of gall bladder is mandatory for early detection of disease and presence of suspicious lesion. An appropriate early measure is important for curative treatment and long-term survival of patients. Screening examinations are necessary to reduce mortality and morbidity among high-risk patients.

MATERIALS AND METHODS:
This study was conducted in Department of Surgical Oncology, National Institute of Medical Science & Research Jaipur Rajasthan. We studied demographic characteristics, risk factors, and clinical profile of 68 patients diagnosed as GBC from January 2019 to March 2020. The demographic characteristics include age, sex, and socioeconomic status. Nonclinical risk factor includes parity, obesity, menstrual status, and use of contraceptive pills among premenopausal female. Diagnosis of gallstone, serum level of triglycerides, total cholesterol, and diabetes were taken as clinical risk factor. Use of vegetarian diet and nonvegetarian diet was included in dietary habit. Clinical profile included performance status, presenting symptoms, duration of symptoms, presence of jaundice, stage and extent of disease, number and sites of metastasis, and pathological features. Interview technique was used to collect the information about demographic characteristics, nonclinical characteristics, and dietary habit. A questionnaire developed specially for the study was used for the interview. Socioeconomic status was determined as per the modified Kuppuswamy's socioeconomic scale. Documentation of clinical features was done by history, physical examination, and imaging features. GBC and stone were confirmed by the ultrasound and computed tomography (CT) scan report.

RESULTS:
The demographic profile of patients is illustrated in Table 1. Majority of the patients (88.23%) were more than 40 years of age. All the patients belonged to northern and northeastern (Bihar) part of India, with the majority of patients (36%) from Uttar Pradesh followed by Bihar (24%) and Delhi (24%). There were 44 females and 6 males in the study. As most of the subjects were female,we also focused on the menopausal status, parity, and use of oral contraceptive pills (OCPs) among premenopausal females as nonclinical risk factors. Postmenopausal status was present in 28 (56%) females whereas the rest 20 was premenopausal.

Table 1: Demographic profile of Patients

Demographic characteristics	n (%)
Study population	50
Median age	51.8 years
Range	27-76 years
Age distribution (years)	
<40	6 (8)
41-50	17 (34)
51-60	11 (22)
>60	18 (36)
Uttar Pradesh	18 (36)
Delhi	12 (24)
Bihar	12 (24)
Uttarakhand	5 (10)
Jharkhand	2 (4.41)
Madhya Pradesh	2 (4)
Punjab	2 (4)
Jammu	1 (2)
Male	6 (12)
Female	44 (88)
Vegetarian	23 (46)
Nonvegetarian	27 (54)

Diabetes mellitus	8 (16)
Hypothyroidism	2 (4)
Obesity	24 (48)
Dyslipidemia	28 (56)
Premenopausal	20 (40)
Postmenopausal	28 (56)
Oral contraceptive use	18 (36)
Multiparity (>3)	19 (38)

Table 2 illustrates the clinicopathological profile of patients. Nearly 44(88%) patients in study group had advanced disease (Stage 3 or 4) at presentation. The pain was the most common symptom, present in all patients studied. Jaundice was present in half of the patients (56%). Interventional biliary drainage was required in 16% of the patients. Poorly differentiated adenocarcinoma was the predominant histology seen (44%). Liver, nonregional lymph nodes, and omentum were the common sites of metastasis. Majority of the stage 4 patients had metastases to at least two organs (68%).

Table 2: Clinicopathological profile of Patients

Clinical characteristics	n (%)
Pain	50 (100)
Jaundice	28 (56)
Ascites	38 (76)
Cholelithiasis	32 (64)
Biliary drainage intervention	8 (16)
Epicenter of GBC	
Fundus	14 (28)
Body	14 (28)
Neck	3 (6)
Diffuse	21 (42)
Well differentiated	10 (20)
Moderately differentiated	18 (36)
Poorly differentiated	22 (44)
Stages 1 and 2	5 (10)
Stage 3	2 (4)
Stage 4	43 (86)
Liver	26 (52)
Omental deposits	18 (36)
Lung	12 (24)
Nonregional LN	24 (48)
Bone	4 (8)
Number of metastatic organs	
2	34 (68)
3-4	10 (20)
>4	1 (2)

DISCUSSION

Gallstones and lower socio economic status are independent determinants for early onset of gall bladder carcinoma.[6] Lower socio-economic status is indirectly a result of illiteracy and poor education standards. This leads to unemployment and decreased livelihood capacity influencing preventive aspects of Gall bladder cancer.[7]

The process of carcinogenesis in GBC follows a consequence of metaplasia followed by dysplasia, carcinoma in situ, and invasive cancer.[8] Various risk factors have been implicated in the pathogenesis of GBC which includes female sex, gallstones, obesity, diabetes mellitus, and infections among which cholelithiasis is most common associated factor, frequently associated with GBC in 69%–85% cases

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independent of age and sex.[9] Gallstones cause local mucosal irritation and chronic inflammation resulting local production of carcinogens, such as secondary bile acids and eventually may results in carcinogenesis after a long duration.[10] Nervi et al. reported an increasing risk of GBC with increasing age in women with gallstones.[11] Khanna et al[12] also support the contention that cholecystectomy should be offered to all asymptomatic gallstone patients, especially if they are less than 60 years of age and are living in a high-incidence area. Eastern U.P. and Indo-Gangetic belt have amongst the highest incidence of gallbladder carcinoma in the world. Naiding M et al[13] out of 22 cholecystectomies, in both the sexes the most common age group of presentation was 50-59 years. But study by Gupta P et al[14] found age of patients ranged from 30 to 70 years. 54% of patients were aged below 40 years of age, age of patients in neoplastic group ranged from 30 to 70 years. The proportion of patients aged above 50 years was 72%. In Non-neoplastic group, age of patients ranged from 31 to 63 years. The proportion of patients aged above 50 years was 20%.

CONCLUSION:
We did not find greater impact of diet on the incidence as vegans and nonvegans were almost equally divided in our study. Factors like better hygiene and water supply to prevent typhoid carriers, prevention of malnutrition, and early intervention for cholelithiasis are important. Balanced diet, decreasing the red meat and increasing low fat, mineral and antioxidant rich diet, increase awareness about risk of tobacco and alcohol consumption-all are highlighted as significant factors which can prevent or decrease incidence of this otherwise dreaded disease.

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