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# A CLINICAL STUDY ON VARIOUS MODES OF PRESENTATION OF PANCREATOBILIARY MALIGNANCIES

Oncology

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## ABSTRACT

Obstructive Jaundice is an important surgical problem that occurs when there is an obstruction to the passage of conjugated bilirubin from liver cells to intestine. It is among the most challenging conditions managed by general surgeons and results in high morbidity and mortality. Hence, early diagnosis of the cause of obstruction is very important especially in malignant cases, as resection is only possible at an early stage. Significant advances have been made over the past 30 years in understanding pathophysiology, diagnosis and management of obstructive jaundice.[3] Biliary obstruction effects the bile ducts and leads to disturbed liver function and widespread systemic effects. Jaundice patients are at high risk for developing hepatic and renal dysfunction, cardiovascular problems, nutritional deficiencies, bleeding problems, infections, and wound complications, and higher perioperative mortality.[4] There is usually an overlap of features among different obstructive pathologies, for example fluctuating icterus is present in both common bile duct stone and periampullary carcinoma.

**AIM:** To study the clinical spectrum of the patient with malignant obstructive jaundice.

**MATERIALS AND METHODS:** The study has been carried out on 48 patients with clinical presentation of suspected malignant obstructive jaundice over a period of 13 months who were seen in general surgery department of a tertiary care centre of Eastern India. A detailed history and relevant information were collected from the patient and relatives like mode of onset, duration, progression, loss of weight and substance abuse. Besides, information like place of residence, family history, personal history, drug intake etc. were recorded.

**RESULTS:** The mean age (mean ± s.d.) of the patients was 66.27±5.85 years with range 52 – 78 years and the median age was 67.0 years. 81.3% of patients had significant loss of weight which was significant. 75.0% of patients had palpable mass abdomen and it was significant. There was neither any significant association between habit of alcohol intake nor the habit of smoking with cancer of the patients.

**CONCLUSION:** The descriptive study on malignant obstructive jaundice patients demonstrated the various modes of presentation. Obstructive jaundice is a multi spectrum disease, in terms of organ involvement, local spread and resectability. Analytical and experimental studies done for each of the etiologies separately will throw more light on the possible evolution of early diagnosis and management.

## KEYWORDS

Obstructive Jaundice, pancreatobiliary malignancies, biliary obstruction

## INTRODUCTION

Jaundice or icterus is yellowish discoloration of tissue resulting from the deposition of bilirubin. Slight increase in serum bilirubin are detected by examination of sclerae, which have affinity for bilirubin due to their high elastin content. The presence of scleral icterus indicates a serum bilirubin of at least 51mol/L (3 mg/dL).[1] The patient with icterus is evaluated to rule out hepatocellular or inherited causes of jaundice and to find out the cause of obstruction if present. History of waxing and waning or painless progressive icterus, pale stools, high colored urine, itching, episodes of colicky pain are important. On examination of the patient, hepatomegaly, palpable gall bladder, epigastric mass are important clues to the obstructive cause of jaundice. Biochemically, disproportionate rise of alkaline phosphatase as compared to SGOT /SGPT, indicates cholestatic pattern.[2] Obstructive Jaundice is an important surgical problem that occurs when there is an obstruction to the passage of conjugated bilirubin from liver cells to intestine. It is among the most challenging conditions managed by general surgeons and results in high morbidity and mortality. Hence, early diagnosis of the cause of obstruction is very important especially in malignant cases, as resection is only possible at an early stage. Significant advances have been made over the past 30 years in understanding pathophysiology, diagnosis and management of obstructive jaundice.[3] Biliary obstruction effects the bile ducts and leads to disturbed liver function and widespread systemic effects. Jaundice patients are at high risk for developing hepatic and renal dysfunction, cardiovascular problems, nutritional deficiencies, bleeding problems, infections, and wound complications, and higher perioperative mortality.[4] There is usually an overlap of features among different obstructive pathologies, for example fluctuating icterus is present in both common bile duct stone and periampullary carcinoma. Progressive painless jaundice usually indicates malignant cause but pain can also be a prominent feature of pancreatic malignancy.

## AIM AND OBJECTIVE:

To study the clinical spectrum of the patient with malignant obstructive jaundice.

## MATERIALS AND METHODS:

The study has been carried out on 48 patients with clinical presentation of suspected malignant obstructive jaundice in a period of 1 May 2014 to 31 May 2015 who were seen in general surgery outpatient department (OPD) and general surgery ward of B.R.Singh Hospital, Eastern Railway, Kolkata. The hospital is a referral centre of eastern railway, hence patients are referred from West Bengal, Bihar, and Jharkhand.

A detailed history and relevant information were collected from the patient and relatives like mode of onset, duration, progression, loss of weight and substance abuse. Besides, information like place of residence, family history, personal history, drug intake etc. were recorded.

Sample size & sample technique – Sample size: 48 patients were included in the study Sample size had been calculated with help of Epi Info (TM) 3.5.3. EPI INFO which is a trademark of the Centers for Disease Control and Prevention (CDC). The same software was used for statistical analysis of data of this study. The formula used for the calculation of sample size was $\mathbf{n=4pq/l^2}$

where,
n= Required sample size
p= Prevalence of impact in the population
q = 1- p
l= Loss % (Loss of information)
The number of subjects required for this study was 48.3 ~ 48 with power 91%.

**Following patients were excluded from the study:**
Patients found to have benign causes of obstructive jaundice like: a. Common bile duct (CBD) stones on ultrasonography. b. Iatrogenic Biliary strictures. c. Medical cause of jaundice e.g. Hepatitis. d. Patients with metallic implants. e. Patient's refusal to be a part of the study. f. Patient seeking discharge against medical advice. The patients were admitted in the ward for evaluation.

A detailed history was taken regarding the onset, duration and progression of yellowish discoloration of eyes, darkening of urine, passage of pale stools, any constitutive symptoms like fever, loss of weight and appetite, features of systemic metastasis. Thorough clinical examination of the patients was done, relevant investigations were commenced and treatment was undertaken as needed.

Management strategy was decided according to the findings in all the investigations and patient's anaesthetic fitness for surgery. Treatment was surgical excision of the operable lesions and palliative chemotherapy in inoperable patients. The final diagnosis was as per the intra operative findings, histopathological reports of the excised lesions and CT guided FNAC reports in inoperable patients.

## RESULT AND ANALYSIS

Descriptive statistical analysis was performed to prepare the tables with corresponding percentages. Test of proportion was used to find the Standard Normal Deviate (Z) to compare the difference proportions and Chi-square ($\chi^2$) test was performed to find the associations. $p \leq 0.05$ was taken to be statistically significant.

**Observation 1: Gender distribution**
Test of proportion showed that proportion of males 31(64.6%) was significantly higher than that of females 17(35.4%) (Z=4.12; p= 0. 0 0 01).

**Observation 2: Distribution of Pain abdomen**
25.0% of patients had pain abdomen but it was not significant. Corrected Chi– square ($\chi^2$= 10.52) test showed that there was no significant association between pain abdomen and disease of the patients (p=0.06).

**Observation 4: Distribution of Pruritus**
62.5% of patients had palpable mass abdomen and it was significant (Z=3.53;p=0.0004). Corrected Chi– square ($\chi^2$ = 0.69) test showed that there was no significant association between pruritis and one particular cancer pathology separately (p=0.87).

**Observation 5: Distribution of alcohol intake**
45.8% of patients had habit of alcohol intake but it was not significant. Corrected Chi– square ($\chi^2$=3.02) test showed that there was no significant association between habit of alcohol intake and cancer of the patients (p=0.38).

**Observation 6: Distribution of Smoking**
50.0% of patients had habit of smoking but it was not significant. Corrected Chi– square ($\chi^2$ = 2.08) test showed that there was no significant association between habit of smoking and cancer of the patients (p=0.55).

**Observation 7: Distribution of Icterus, Dark Urine, Pale stools**
Icterus, Dark urine and history of passing pale stool was present in all of the patients.

**Table– 1: Age distribution**
The mean age (mean ± s.d.) of the patients was 66.27±5.85 years with range 52 – 78 years and the median age was 67.0 years.

Test of proportion showed that proportion of patients with age group≥60 years (83.3%) was significantly higher than the patients with other age groups (Z=9.71;p=0.00001).

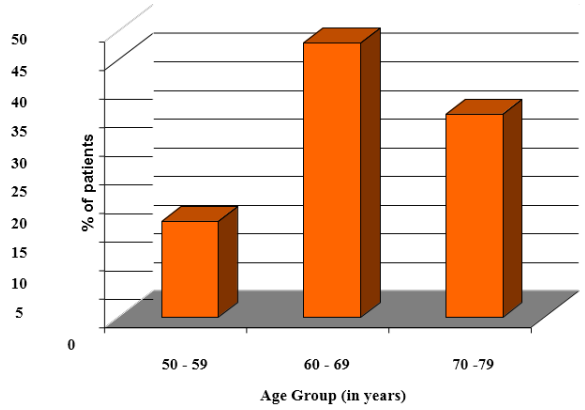



**Table 2: Distribution of loss of weight**

81.3% of patients had significant loss of weight which was significant (Z=8.25;p=0.00001).

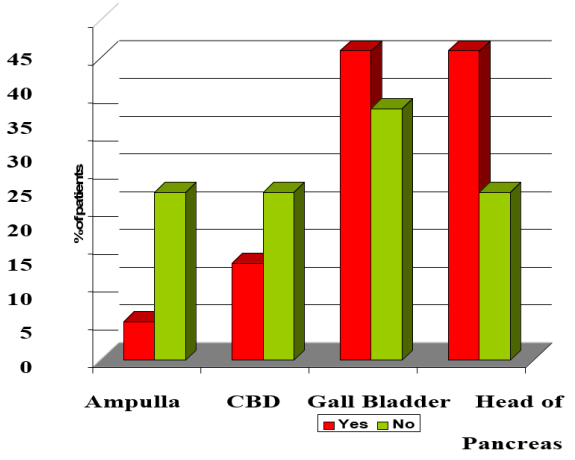
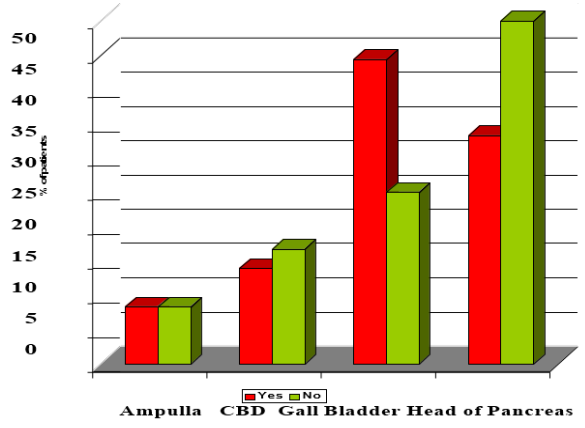



**Table 3: Distribution of palpable mass abdomen**

75.0% of patients had palpable mass abdomen and it was significant (Z=6.47;p=0.00). Corrected Chi– square ($\chi^2$ 2 = 1.57) test showed that there was no significant association with any one particular pathology specifically (p=0.66).




## DISCUSSION

Pancreatic, hepatic, and biliary malignancies represent three of the most challenging malignancies facing the surgeons. For each malignancy, surgery represents the only curative treatment option. Obstructive jaundice caused by biliary tract malignancies is usually chronic, and obstruction is severe and often accompanied by old age, weak immune system and chronic organ dysfunction. Since, at early stages it is possible to cure biliary malignancies, studies related to their diagnosis have decent significance.

Studying biliary cancers in Indian context becomes even more

important because gall bladder cancer is the most common gastrointestinal cancer in Indian women in Delhi and Bhopal.[5] It is the most common malignancy in women after carcinoma of cervix and breast in Jammu.[6]

### *AGE AND SEX*

In this study the age of the patients ranged between 52 years to 78 years. According to the Sabiston's text book of surgery, biliary and pancreatic malignancies are common in 6th and 7th decade of life.[7,8] It is noted that 83.33% of the patients in the study, are falling in this age group.

Adenocarcinoma pancreas has slightly more incidence in men (1.3:1).[8] Unlike Gall bladder carcinoma which is 2-3 times more common in females,[7] the incidence of bile duct cancer is slightly greater in males than in females.[9] In this study, out of total carcinoma pancreas and cholangiocarcinoma patients, 57.6% were males which is as per the established sex ratio for the diseases. On the other hand percentage of female patients in carcinoma gall bladder category was found to be 31.57% which is contrary to the female sexual preponderance.

### *ALCOHOL INTAKE AND SMOKING*

In this study, there was no significant association between habit of alcohol intake and cancer of the patients (p=0.38). 50.0% of patients had habit of smoking but it was not significant. Corrected Chi-square test showed that there was no significant association between habit of alcohol intake and cancer of the patients.

### *CLINICAL FEATURES*

Majority of gallbladder cancers originate in the fundus or body of the gallbladder, most produce symptoms in the advanced stage. Weight loss, jaundice, or an abdominal mass are associated with later stages of disease. Some patients describe symptoms of chronic cholecystitis in which the pain has recently changed in quality or frequency. Other common symptoms include chronic epigastric pain, early satiety, and a sense of fullness.[7]

The presentation of cholangiocarcinoma depends on the site of origin and manifestations of biliary obstruction at that site. Painless jaundice is a common symptom. The cholangiocarcinoma causing obstruction at or below the hepatic bifurcation tends to present at earlier stages than intrahepatic cholangiocarcinoma. With obstruction of the biliary tree, the common manifestations of direct hyperbilirubinemia, such as pruritus, dark urine, and steatorrhea, can be seen. Cholangio carcinomas tend to extend in a submucosal route, with associated perineural invasion, but constant pain on presentation suggests more advanced disease.[10]

The defining presenting symptom for patients with carcinoma pancreas in the periampullary region is jaundice. Although painless jaundice has frequently been described, a significant number of patients present with pain in addition to jaundice, typically arising in the epigastrium and radiating to the back. Weight loss is also common at the time of presentation, affecting more than 50% of individuals. For tumors of the body and tail of the pancreas, pain and weight loss become more common at presentation.[11] In this study, all the patients had icterus, dark coloured urine and history of passing pale stools. 50% of the patients with carcinoma head of pancreas had pain abdomen as a presenting feature. However, overall pain abdomen was not found to be a statistically significant feature of malignant obstructive jaundice. Loss of weight and mass abdomen was statistically significant in the study. Painless jaundice was prominent clinical feature in the study, which was present in 75% of the patients. Icterus, dark urine and passage of pale stool was present in all the patients.

## SUMMARY

In this study, 48 patients suffering from malignant causes of obstructive jaundice were studied over a period of 1 year from 1 May 2014 to 31 May 2015 in the department of General Surgery, B.R. Singh hospital, Kolkata. Aim of the study was to analyse the clinical presentation with reference to the final diagnosis.

In this observational study, 83.3% of the patients were in their 6th and 7th decades of life. Significant loss of weight was found in 79.16% of the patients. Pain abdomen was found to be higher in carcinoma pancreas which was in 50% of the patients. 50% of patients were regular alcohol drinkers over the past 10 years or more while 52.08% of the patients were smokers of more than 5 cigarette/bidi pack years. Icterus and dark urine was present in all the patients. Painless jaundice turned out to be the most consistent feature i.e. in 75% of the patients.

## CONCLUSION

The descriptive study on malignant obstructive jaundice patients demonstrated the various modes of presentation.

In this series, it was evident that malignant obstructive jaundice is a disease of 6th decade or more, there is male preponderance and weight loss, painless jaundice, pruritus are the predominant clinical features. Epigastric pain was complaint of 50% of the carcinoma pancreas patients. Since this was a descriptive study and no comparisons were made with the benign cases taken as controls, it lays a foundation for the hypotheses. To prove the hypothesis and to know the diagnostic accuracies, experimental studies are required. Obstructive jaundice is a multi spectrum disease, in terms of organ involvement, local spread and resectability. Analytical and experimental studies done for each etiology separately will throw more light on the possible evolution of early diagnosis and management.

## CONFLICT OF INTEREST:

The authors declare that there is no conflict of interest.

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