Etiology of obstructive jaundice and its correlation with the ethnic population of Sikkim

Karma D. Bhutia¹, Tsella Lachungpa², Sangey C. Lamtha³

¹Departments of Intermediate Reference Laboratory, ²Radiology and ³Gastroenterology, S.T.N.M. Hospital, Gangtok, Sikkim, India

ABSTRACT

Objective: The aim of the study was to find out the etiology of obstructive jaundice and its correlation with the ethnic population of Sikkim. Material and Method: The data of patients with obstructive jaundice admitted under the Department of Gastroenterology was collected retrospectively from March 2019 till February 2020. There were a total of 73 patients of obstructive jaundice patients, the benign etiology was found to be more common than malignant etiology. Results: The male-to-female ratio in our study was 0.35:1. The most common etiology of benign cause of obstructive jaundice was choledocholithiasis (95.83%) followed by common bile duct stricture (3.07%), Mirizzi syndrome (1.53%). The most common causes of malignant obstructive jaundice were carcinoma of gall bladder (62.5%) followed by carcinoma of periampullary region (12.5%), cholangiocarcinoma (12.5%), carcinoma of head of pancreas (12.5%). Conclusions: The most common etiology of obstructive jaundice in this study was choledocholithiasis. There was no any correlation of obstructive jaundice with ethnic population of Sikkim.

Keywords: Ethnic group, etiology, obstructive jaundice

Introduction

Obstructive Jaundice is a common problem that occurs when there is an obstruction to the passage of conjugated bile from liver cells to intestine.[1] Endoscopic retrograde cholangiopancreatography (ERCP) has become the one of treatment modality for patients with obstructive jaundice because of its therapeutic capabilities. The success rate of ERCP for treatment is highly variable ranging from 50% to 96% depending on the operator, endoscopic aspect, disease severity, and anatomical abnormality.[2,3] Jaundice due to biliary obstruction may be caused by a heterogeneous group of diseases that include both benign and malignant conditions.[4] The common etiologies of obstructive jaundice have been reported to vary from one center to another and from one individual to another.[4,5] The morbidity and mortality related to obstructive jaundice depends upon the causes of obstruction.[8] There are some studies on the etiology of obstructive jaundice but none from the state of Sikkim. Lack of literature lead to this study. This study was done to find out the etiologies of obstructive jaundice among the ethnic population of Sikkim, India.

As per first colonial census of Sikkim 1891, there were thirteen ethnic races in the Kingdom of Sikkim groups namely Chettri, Subba, Bhutia, Tamang, Gurung, Biswakarma (BK) and others.[7]

Material and Method

The data of the admitted patients of obstructive jaundice was collected retrospectively from the department of gastroenterology, Sir Thutop Namgyal Memorial Hospital (S.T.N.M.), Socheygang a tertiary care referral center of Sikkim, India.

Address for correspondence: Dr. Sangey C. Lamtha, Consultant and Head, Department of Gastroenterology, S.T.N.M. Hospital, Gangtok - 737 101, Sikkim, India. E-mail: sangey79@yahoo.com

Received: 01-06-2021 Revised: 15-07-2021 Accepted: 16-07-2021 Published: 29-11-2021
Bhutia, et al.: Etiology of obstructive jaundice and its correlation with the ethnic population of Sikkim

In their study, they found that the incidence of gall cancer was 0.35:1 [Table 2].

Of 73 cases, 2 patients of advanced malignancy refused further interventions (one patient of gall bladder malignancy and other of carcinoma of head of pancreas), 3 cases of large common bile duct stone about 2 cm in size on MRCP, underwent open laparotomy and common bile duct exploration and therapeutic ERCP procedures were done in only 69 cases. 8 cases of ERCP developed mild to moderate post ERCP pancreatitis despite using rectal diclofenac 100 mg suppository and they were managed conservatively. Pancreatic plastic stent was placed in 11 cases due to repeated pancreatic duct cannulation, while biliary plastic stent was placed in 63 cases. Self-expanding biliary metal stent was placed in 6 patients, four patients of gall bladder malignancy, one each of periampullary carcinoma and cholangiocarcinoma [Table 1].

Results

In our study, the male-to-female ratio was 0.35:1 [Table 2]. The female patients were more in number as compared to male patients. The age group of the patients ranged from 23 years to 80 years with benign disease while age group from 40 years old to 73 years old patients were found with malignant disease. The most common etiology among benign causes was Choledocholithiasis (95.83%) followed by common bile duct stricture (3.07%), mirrizi syndrome type 1 (1.53%). The most common malignant causes was carcinoma of gall bladder (62.50%) followed by periampullary cancer (12.5%), cholangiocarcinoma (12.5%), carcinoma of head of pancreas (12.5%). Among the ethnic group, the obstructive jaundice was common among Chettri ethnic group in both benign as well as malignant cause compared with the rest of other ethnic groups. But this difference with other ethnic groups was not found to be statistically significant [Table 3].

Discussion

Obstructive jaundice is characterized by presence of jaundice, itching, pain abdomen, vomiting, fever or cholangitis, in some cases depending upon the etiology, weight loss, clay color stool. The treatment and prognosis depends upon the etiology and level of biliary obstruction. The occurrence of the most frequent cholesterol stones is connected with the manner and place of living, nourishment, and sex. The benign etiology of obstructive jaundice are choledocholithiasis, common bile duct strictures, mirrizi syndrome, impacted parasites in common bile duct, chronic pancreatitis while the malignant causes are carcinoma gall bladder, carcinoma of pancreas, hilar metastasis, periampullary carcinoma, cholangiocarcinoma.

This study was done to find out the most common etiology of obstructive jaundice both benign and malignant cause prevalent in the state of Sikkim. This study was also done to guide the primary care physicians to know the commonest etiology of obstructive jaundice in their day-to-day practice and also for early referral to tertiary care center for treatment and management of such patients.

Mangam et al concluded in their study that males (54.71%) had more obstructive jaundice compare to females (45.28%). Gill HS et al in their study, they found that the incidence of gall stones was more common in female than male. Kotwal et al in their study concluded gallstones are common in Sikkim and North Bengal among dyspeptics and majority of these stones were cholesterol stones. The gallstones was more common in females and in patients with normal weight. In our study also female had more common bile duct stones than males. Ahsan Ali Laghari et al in their study among 50 patients of Obstructive jaundice, males (62%) were more common than females (38%). Jaundice was the most common presentation and majority of patients had benign etiology 31 patients and 19 patients had malignant etiology of obstructive jaundice.

Björnsson et al in their study, they found pancreatic cancer and cholangiocarcinoma were the most common cause of obstructive jaundice. The age group among the malignant obstruction was ranging 61 years to 81 years. Shalini et al also found in their study carcinoma of head of pancreas (66.7%) was the most common cause of overall obstructive jaundice and choledocholithiasis (33.3%) was the common cause among benign disease. Lindberg et al studied 64 cases of bile duct obstruction and observed gallstones disease in 29 patients,
pancreatitis in 1 patient, sclerosing cholangitis in 2 patients, pancreatic carcinoma in 18 patients, bile duct carcinoma in nine patients, and gall bladder carcinoma in five patients. Kajal Kumar Patra et al.\[17\] found that the most common age group among obstructive jaundice was between 31 years to 70 years and the most common etiology was choledocholithiasis followed by carcinoma of head of pancreas. However, in our study, the most common etiology was choledocholithiasis while the most common malignant etiology was carcinoma of gall bladder in association with gallstones.

Few studies related to ethnicity and gallbladder disease were done. Comparisons across studies suggest that the highest risk of gallstones occurs among American Indians with progressively lower risk among whites, blacks, and some Asian groups.\[18\] Mexican American women also have a higher prevalence of gallstones than U.S. Hispanic women.\[19\] In this study, there was no any correlation of ethnicity with obstructive jaundice.

In India, gallbladder carcinoma (GBC) is most prevalent in northern and northeastern states of Uttar Pradesh, Bihar, Orissa, West Bengal, and Assam.\[20\] GBC is two times higher in women than men and is the leading digestive cancer in women in northern Indian cities.\[21\] Six Cancer registries of the Indian Council of Medical Research (1990–96) show a 10 times lower incidence of GBC per 100,000 in South India compared with the North, the age-adjusted incidence rate for females being 0.8 in Chennai in the south and 8.9 in Delhi in the north.\[22\] Gallstones were said to play a major role.\[23\] Other risk factors are obesity, multiparity, and chronic infections.\[24\]

In this study, the key points to highlight were that the benign cause was more common than malignant cause among obstructive jaundice prevalent in the state of Sikkim. Choledocholithiasis was the most common etiology among benign etiology and while gall bladder carcinoma was the commonest malignant etiology. Both the conditions require early diagnosis and management of such cases.

**Conclusion**

Overall the most common etiology of obstructive jaundice was choledocholithiasis while gall bladder carcinoma was the most common malignant cause in Sikkim which lies in the eastern Himalayan region of India. Our study also concluded that there was no any association of ethnicity with obstructive jaundice in the state of Sikkim.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

---

**References**

1. Mohamed S, Syed AI. Management of obstructive jaundice: Experience in a tertiary care surgical unit. Pakistan J Surgery 2007;23:23-5.
2. Sheth F, Aljohani M, Altraif I, Khan H. Role of endoscopic retrograde cholangiopancreatography before and after laparoscopic cholecystectomy. Ann Saudi Med 1998;18:117-9.
3. Mine T. Endoscopic retrograde cholangiopancreatography in patients with gastrojejunal reconstruction. Dig Endosc 2005;17:97-8.
4. Roche SP, Kobos R. Jaundice in the adult patient. Am Fam Phys 2004;69:299-304.
5. Mehrdad M, Seyed AM, Mohammad Taghi MS. Obstructive jaundice in Iran: Factors affecting early outcome. Hepatobiliary Pancreat Dis Int 2008;7:516-9.
6. Acalovschi M. Cholangiocarcinoma: Risk factors, diagnosis and management. Rom J Intern Med 2004;42:41-58.
7. Gazetteer of Sikkim. 1894;27. Available from: http://sikkimarchives.gov.in/download/old_sikkim_documents/GAZETTEER.pdf.
8. Stinton LM, Shaffer ED. Epidemiology of Gallbladder disease. Cholitis and cancer. Gut Liver 2012;6:172-187.
9. Gracanin AG, Kujundzic M, Petrovecki M, Romic Z, Rahelid D. Etiology and epidemiology of obstructive jaundice in Continental Croatia. Coll Antropol 2013;37:131-3.
10. Mangam NP, Dakhore SD, Bodade RM, Dhurve AS, Dhoran AP. Presentation, etiology and management of obstructive jaundice: A prospective study. JMSR 2018;6:207-15.
11. Gill HS, Gurmanpreet. Epidemiology of gallstone disease: A prospective study of 50 cases. Sch Acad J Biosci 2016;4:502-6.
12. Kotwal MR, Rinchen CZ. Gallstone disease in the Himalayas (Sikkim and north Bengal): Causation and stone analysis. Indian J Gastroenterol 1998;17:87-9.
13. Laghari AA, Laghari QA, Shaikh AA, Muneer A, Pandhi M.
Clinical presentation and different treatment modalities of obstructed jaundice. J Pharm Res Int 2020;17:199-203.

14. Björnsson E, Gustafsson J, Borkman J, Kilander A. Fate of patients with obstructive jaundice. J Hosp Med 2008;3:117-23.

15. Shalini T, Balaji Rohith M, Rajesh S. A clinical study of presentation evaluation and management of obstructive jaundice in Osmania General Hospital. J Dent Med Sci 2019;18:1-13.

16. Lindberg G, Björkman A, Helmers C. A description of diagnostic strategies in jaundice. Scand J Gastroenterol 1983;18:257-65.

17. Patra KK, Saha S, Haldar S, Banerjee C. A prospective study on clinical profile and management of obstructive jaundice. Int J Health Clin Res 2021;4:233-6.

18. Everhart JE. Gallstones. In: Johanson JF, editor. Gastrointestinal Diseases: Risk Factors and Prevention. Philadelphia: Lippincott-Raven; 1998. p. 145-72.

19. Maurer KR, Everhart JE, Ezzati TM, Johannes RS, Knowler WC, Larson DL, et al. Prevalence of gallstone disease in Hispanic populations in the United States. Gastroenterology 1989;96:487-92.

20. 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.

21. Dhir V, Mohandas NM. Epidemiology of digestive tract cancers in India IV. Gall bladder and pancreas. Indian J Gastroenterol 1999;18:24-8.

22. National Cancer Registry Programme. Consolidated Report of the Population Based Cancer Registries 1990–96. New Delhi: Indian Council of Medical Research; 2001.

23. Zatonski WA, Lowenfels AB, Boyle P, Maisonneuve P, Bueno de Mesquita HB, Ghadirian 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;89:1132-8.

24. Randi G, Franceschi S, La Vecchia C. Gallbladder cancer worldwide: Geographical distribution and risk factors. Int J Cancer 2006;118:1591-602.