

Etiological pattern and early outcome of patients presenting with obstructive jaundice at Isra University Hospital, Hyderabad, Pakistan

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Objective: To determine the etiological pattern and early outcome of patients presenting with obstructive jaundice.

Methodology: This prospective case series was conducted on 82 patients through convenient sampling for one year from July 2010 to June 2011 at Isra University Hospital, Hyderabad, Pakistan. All patients with obstructive jaundice were included in this study. After making final diagnosis, depending upon the etiology and stage of disease, the patient was offered the appropriate treatment. SPSS version 16.0 was used to for data analysis.

Results: Mean age of the participants was 54.16 ± 11.50 . Males were predominant as

compare to females, 57.3% and 42.7%. Gallstones were the most common cause; seen in 74 (90.2%) patients. Seventy (96.3%) were managed conservatively as compare to those patients in which surgery performed (1 case, 1.2%). 97.6% improved and were discharged where as 2(1.64%) did not improve.

Conclusion: Gallstones were the predominant cause of obstructive jaundice in our setup. Most of the patients did not require surgical treatment, and outcome was very good with conservative treatment. (Rawal Med J 201;43:68-71).

Key words: Gallstones, obstructive jaundice, patients outcome.

INTRODUCTION

Obstructive Jaundice is caused by obstruction, blockage and/or compression of common bile duct (CBD) and/or biliary tract that leads to incomplete excretion of bile into the intestine.¹ The common etiological factors that cause obstructive jaundice vary from one area of resident to another and from one individual to another.² Obstructive jaundice is commonly caused by gall stones, secondary to carcinoma of the liver, secondary to presence of tumor in the porta hepatis, and carcinoma of the head of the pancreas. However, the most common causes of the disease are vary in different populations.³ Its incidence is higher in female than male because gallstones are frequently found in them.¹ The etiological factors do matter between male and female to make changes in the incidence and prevalence of obstructive jaundice between them.³

The diagnosis can often be made by a careful history and examination. The clinical manifestations include the increasing jaundice and abdominal pain for several days, followed by waxing and waning of the pain and jaundice at a background level as the stone dis-impacts and re-impacts in the CBD like in common bile duct stones, and jaundice for several

weeks with unremitting symptoms, darkening of urine, anorexia, weight loss, and malaise related to malignancies.

In general, etiology can be established by using variety of invasive and non invasive radiological tests.^{2,4} These include ultrasonography, CT scans, MRCP, ERCP and PTC; where as ERCP is gold standard in evaluation of obstructive jaundice.⁵ The nature of obstruction because an ill-chosen procedure can lead to high morbidity and mortality,^{6,7} therefore it is essential to know true prevalence of common etiological factors which contribute for obstructive jaundice in our setup. The aim of this study was to determine the etiological pattern and early outcome of patients with obstructive jaundice in our set up.

METHODOLOGY

This was a prospective study conducted for one year from July 2015 to June 2016 at Isra University Hospital, Hyderabad. We used Non-probability convenient sampling technique and 82 patients were selected, who presented with obstructive jaundice. We included all patients who were admitted in surgical ward, of any age, gender, and ethnicity.

Jaundice due to liver cirrhosis was excluded from the study.

Age, sex, related symptoms like yellow discoloration of skin and sclera, clay colored stool, loss of appetite weight loss, and pruritus were recorded. Laboratory workup included liver function test to see the level of bilirubin and level of serum alkaline phosphatase and abdominal ultrasound to look for the abnormality of intra and extra-hepatic biliary channels, the common bile duct and presence of any gall stones or any abdominal mass. Depending upon the etiology and stage of disease, the patient was offered the appropriate treatment. The patients were followed during the postoperative hospital stay. The data were analyzed by using the SPSS version 16.0.

RESULTS

Out of 82 patients, 57.3% were male and 42.7% female Mean age of study participants was 54.16 ± 11.50 . Patients with diabetes were more common (13.1%) as compare to hypertensive (11.0%) (Table1). Gall stones were the most common cause of obstructive jaundice followed by ampularay cancer (Table 2). Mean level of bilirubin notably seen higher 12.13mg/dl (Table 3).

Table 1. Demographic profile of study subjects (n-82).

Characteristics	Number	Percent
Age- years (mean, sd)	54.16 ± 11.50	
Range	16 - 71	
Gender		
Male	47	57.3
Female	35	42.7
Smoking status		
Never smoked	59	72
Past smoker	6	7.3
Current smoker	15	18.3
Alcohol consumption		
Yes	1	1.2
No	81	98.8
Education		
Illiterate	37	45.1
Primary	15	18.2
Secondary	18	22
≥Matric	12	14.6
Co-morbid		
Diabetic	11	13.4
Hypertensive	9	11

Table 2. Etiology of obstructive jaundice (n-82).

Etiologies	Number	Percent
Gall stone with complications	74	90.2
Peri-ampullary cancer	5	6.1
Stricture formed at CBD	1	1.2
Post Liver transplant CBD stricture	1	1.2
Post-cholecystectomy common bile duct stricture	1	1.2

Table 3. Laboratory investigations among obstructive jaundice patients (n-82).

Variable	Minimum	Maximum	Mean	Std. Deviation
Hemoglobin-g/dl	6.9	13.3	11.27	1.16
TLC-mm3	2.7	76	8.82	7.6
Platelets-mm3	31	402	292.57	58.78
Urea-mg/dl	16	90	32.35	10.95
Creatinine-mg/dl	6	11	1.002	1.13
Bilirubin-mg/dl	6.7	18.2	12.13	2.03
SGPT-U/l	50	395	216.74	79.86
Serum Albumin-g/dl	3.4	4.7	3.88	0.29
Gamma GT-u/l	104	471	307.72	62.88
SAP-u/l	149	872	595	147.23

TLC: Total leukocyte count, SGPT: serum glutamic pyruvic transaminase, GT: Gamma glutamyltransferase, SAP: Serum alkaline phosphatase

Table 4. Treatment procedure and outcome (n-82).

Treatment	Number	Percent
Conservative (ERCP Stenting / Removal of stone)	79	96.3
Surgical	3	3.7
Outcome		
Improved	80	97.6
Not improved	1	1.2
Died	1	1.2

Table 5. Etiologies with treatment (n-82).

Differential (Etiology)	Treatment Given		Total
	Conservative treatment (ERCP)	Surgical	
Gall stones with complications	73	1	74
Periampullary cancer	3	2	5
Stricture formed at CBD	1	0	1
Post Liver transplant CBD stricture with Biliary leakage	1	0	1
Post cholecystectomy CBD Stricture formation	1	0	1
Total	79	3	82

We had two options to treat the patients; conservative treatment and definitive surgery. Decision made by the surgeon for conservative treatment in 79(96.3%) patients, which was ERCP Stenting/Removal of stone. Only 3 (3.7%) patients were treated by definitive surgical procedure (Table 4 & 5). Eighty (97.6%) patients improved after receiving treatment with either conservative or definitive surgery and were discharged. Only there was 1 (1.2%) case who did not improve and 1 (1.2%) expired (Table 4).

DISCUSSION

Jaundice, roughly divided into intrahepatic and extra hepatic form, is a clinical challenge. Extra hepatic cholestasis is caused by either a CBD stone or a stricture; of these, stricture most often refers to malignancy. In the early phase of differential diagnosis, when imaging studies, such as MRCP or ERCP, giving a definitive diagnosis are seldom available, the clinical workup has to be done with means of readily available tests, e.g. common liver function tests and ultrasound. The mean age of our study patients was 54.16 ± 11.50 and is quite similar with another study.² Number of male patients were more in our study than previously conducted study.² In an another study from Pakistan has shown more patients were female than male.¹

Most common cause of obstructive jaundice in our study was gall bladder stones followed by Peri-ampullary cancer, CBD stricture, Post liver transplant CBD stricture with biliary leakage and post cholecystectomy CBD stricture formation. Gall stones as a cause of obstructive jaundice was also common in another Pakistani study.¹ It was second commonest cause in an Iranian study,³ however, in an earlier study showed that their most common cause was carcinoma of head of pancreas.^{2,3}

Highly elevated levels of bilirubin and alkaline phosphatase were the most common laboratory parameters and most valuable laboratory indices used in the diagnosis for obstructive jaundice in our study than other laboratory investigations. Serum ALP level was the highest recorded laboratory investigation for differential diagnosis in another previous study.³

Very high number (94.8%) of patients with obstructive jaundice was treated with definite surgery in another center,² than our study (3.7%). This could be because of patient presents with different etiological pattern and decision based on the surgeon for the patients benefit, because if the patient having carcinoma of the gallbladder or peri ampullary cancer, the treatment option would be surgical resection of the tumor.^{8,9}

In our study, majority of the patients (97.6%) after receiving treatment with either conservative or definitive surgery became improved and were discharged, as early management in benign but more importantly in malignant causes reduces the mortality rate.¹⁰ If patients have cancer of head of the pancreas, preoperative biliary drainage before surgery will not affect the mortality rate.¹¹

CONCLUSION

Gallstones were the predominant cause of obstructive jaundice in our setup. Most of the patients did not require surgical treatment, and outcome was very good with conservative treatment. Larger sample sized and multi-centered study is needed to validate the results of this study.

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REFERENCES

1. Siddique K, Ali Q, Mirza S, Jamil A, Ehsan A, Latif S, et al. Evaluation of the aetiological spectrum of obstructive jaundice. J Ayub Med Coll Abbottabad 2008;20:62-6.
2. Chalya PL, Kanumba ES, McHembe M. Etiological spectrum and treatment outcome of Obstructive jaundice at a University teaching Hospital in northwestern Tanzania: A diagnostic and therapeutic challenges. BMC Res Notes 2011;4:147.
3. Moghimi M, Marashi SA, Salehian MT, Sheikhvatan M. Obstructive jaundice in Iran: factors affecting early outcome. Hepatobiliary Pancreat Dis Int 2008;7:515-9.

4. Sharma MP, Ahuja V. Aetiological spectrum of obstructive jaundice and diagnostic ability of ultrasonography: a clinician's perspective. *Trop Gastroenterol* 1999;20:167-9.
5. Acalovschi M. Cholangiocarcinoma: risk factors, diagnosis and management. *Rom J Intern Med* 2004;42:41-58.
6. Whitehead MW, Hainsworth I, Kingham JG. The causes of obvious jaundice in South West Wales: perceptions versus reality. *Gut* 2001;48:409-13.
7. Nadkarni KM, Jahagirdar RR, Kagzi RS, Pinto AC, Bhalerao RA. Surgical obstructive jaundice. *J Postgrad Med* 1981;27:33-9.
8. Nishio H, Ebata T, Yokoyama Y, Igami T, Sugawara G, Nagino M. Gallbladder cancer involving the extrahepatic bile duct is worthy of resection. *Ann Surg* 2011;253:953-60.
9. Pal KM, Bari H, Nasim S. Pancreaticoduodenectomy: a developing country perspective. *J Pak Med Assoc* 2011;61:232-5.
10. Zou S, Qin R, Wang J, Yang C, Yi J, Qian J, et al. Prognostic factors of clinical curative effect for malignant obstructive jaundice. *Zhonghua Wai Ke Za Zhi* 2000;38:771-4.
11. Eshuis WJ, van der Gaag NA, Rauws EA, van Eijck CH, Bruno MJ, Kuipers EJ, et al. Therapeutic delay and survival after surgery for cancer of the pancreatic head with or without preoperative biliary drainage. *Ann Surg* 2010;252:840-9.