

# Hyperbilirubinemia in Liver Abscess at Tertiary Care Hospital, Bhavnagar: A Prospective Observational Study

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**Abstract:** ***Aim:** To study hyperbilirubinemia in liver abscess patients and its correlation with severity. **Settings and design:** prospective randomized controlled study. **Methods and material:** Randomized prospective study in all patients of liver abscess who presented with fever and/or abdominal pain was assessed and their clinical examination finding & biochemical investigation were recorded. Case were divided in two group, GROUP 1 S. Bilirubin  $\geq 1$ mg/dl and GROUP 2 S. Bilirubin  $< 1$ mg/dl. All case of liver abscess started on broad spectrum antibiotic and response was recorded based on improvement in clinical findings, leukocytosis, liver function test and ultrasonography. **Result:** GROUP 1 have history of alcohol intake which was significant more than GROUP 2. leukocytosis was in GROUP 1 was significant higher than GROUP 2. In group 1 patient if ranged from 1.2 to 12 mg/dl and direct bilirubin was more than indirect bilirubin in most of patients. Hyperbilirubinemia was found to have positive correlation with size of abscess cavity. Serum alkaline phosphates, SGPT, SGOT was raised significant in group 1. size of cavity directly correlated with raised ALP level. Patients with hyperbilirubinemia have shown comparatively higher rate of complications than those with normal s.bilirubin **Conclusions:** Hyperbilirubinemia occurs frequently in cases of liver abscess which seems to obstructive in nature and it can be treated by surgical drainage of the abscess cavity.*

**Keywords:** IVER Abscess, Hyperbilirubinemia, Obstructive, Jaundice

## 1. Introduction

- Liver abscess is defined as collection of purulent material in liver parenchyma which can be due to bacterial, parasitic, fungal or mixed infection.
- Liver abscess is common condition in India with male preponderance. India has second highest incidence of the liver abscess in the world. More than two-third of liver abscess in developing countries is Amoebic liver abscess. Alcohol is the most common risk factor.
- Patients presenting with pain in upper abdomen on right side and fever with tender hepatomegaly.
- Ultrasound and CT scan of abdomen are the mainstay of diagnostic modality.
- Percutaneous drainage or intermittent needle aspiration in combination with systemic antibiotics are the current treatment of choice and surgical drainage is reserved for failure case.

## Aims and Objectives

### Aim

To study hyperbilirubinemia in liver abscess patients and its correlation with severity. Objectives:

- 1) To estimate the proportion of hyperbilirubinemia in liver abscess
- 2) To assess age and sex wise distribution of hyperbilirubinemia in liver abscess
- 3) To study association between size and presentation of liver abscess with hyperbilirubinemia.
- 4) To compare complication between liver abscess with hyperbilirubinemia and normal serum bilirubin levels.

- 5) To assess outcome in liver abscess with hyperbilirubinemia after 14 days of treatment.

### Inclusion criteria

Patient of age  $\geq 18$  year diagnosed to have liver abscess by ultrasound study or CT Scan.

### Exclusion criteria

- Malignant diseases of hepatobiliary system and pancreas
- Pregnant women
- Patients with any other cause (like gall stone, biliary stricture, haemolysis, choledochal cysts, pancreatitis) of hyperbilirubinemia in liver abscess.

## 2. Methodology

Randomized prospective study in All patients of liver abscess fulfilling the inclusion and exclusion criteria were selected from surgical ward in sir t hospital from march 2022 to june 2022 where 20 patient of liver abscess who presented with fever and/or abdominal pain as diagnosed on USG and CT SCAN were assessed and their clinical examination finding & biochemical investigation were recorded.

Case were divided in two group GROUP 1 S. Bilirubin  $\geq 1$ mg/dl and GROUP 2 S. Bilirubin  $< 1$ mg/dl.

All case of liver abscess started on broad spectrum antibiotic and response was recorded based on improvement in clinical

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findings, leukocytosis, liver function test and ultrasonography.

### 3. Result

- 20 Patient under study (m:18, F:2) mean age was 40 year of these patients 6 patient had hyperbilirubinemia (s. bilirubin >1mg/dl)
- Out of 20 patients 13 patients had history of alcohol intake all of this were male. GROUP 1 have history of alcohol intake which was significant more than GROUP 2.

- About 2/3 patient showed leukocytosis was in GROUP 1, which was significant higher than GROUP 2.
- In group 1 patient if ranged from 1.2 to 12 mg/dl and direct bilirubin was more than indirect bilirubin in most of patients.
- Hyperbilirubinemia was found to have positive correlation with size of abscess cavity.
- Serum alkaline phosphates, SGPT, SGOT raised in group 1 (90%) and group 2 (42%) and mean value of ALP was raised significant in group 1. size of cavity directly correlated with raised ALP level.
- Patients with hyperbilirubinemia have shown comparatively higher rate of complications than those with normal s.bilirubin

Sex wise distribution of hyperbilirubinemia in liver abscess

Sex	Bilirubin >= 1 mg/dl	Percentage
Male	5	85%
Female	1	15%

Age wise distribution of hyperbilirubinemia in liver abscess

Age	Bilirubin >= 1 mg/dl	Percentage
18-40	1	16%
40-60	3	50%
>=60	2	33%

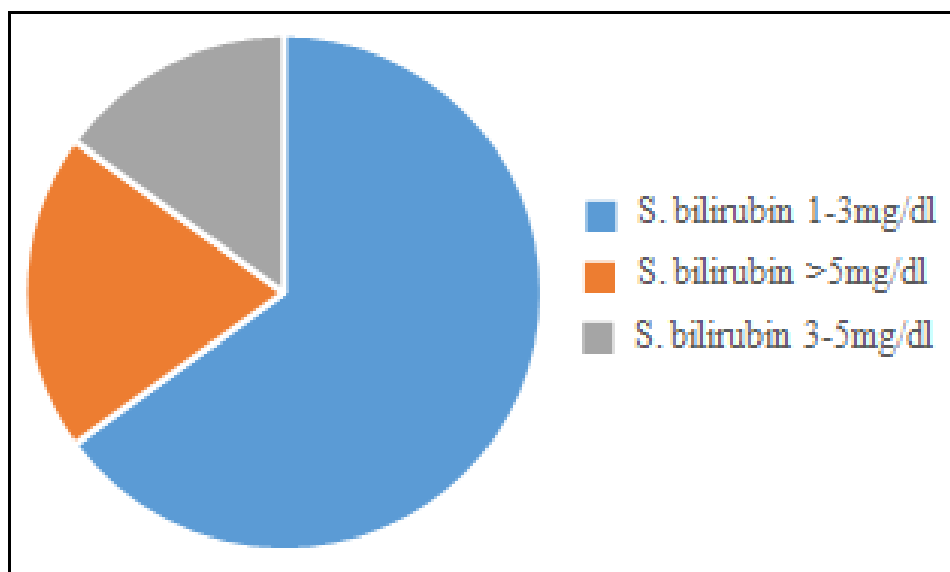
Table comparing cavity size in two groups

	Size of abscess cavity		
	<200cc	200-400cc	>400cc
Group 1 n=6	1 (16%)	2 (33%)	3 (50%)
Group 2 n=14	3 (21%)	6 (42%)	5 (36%)

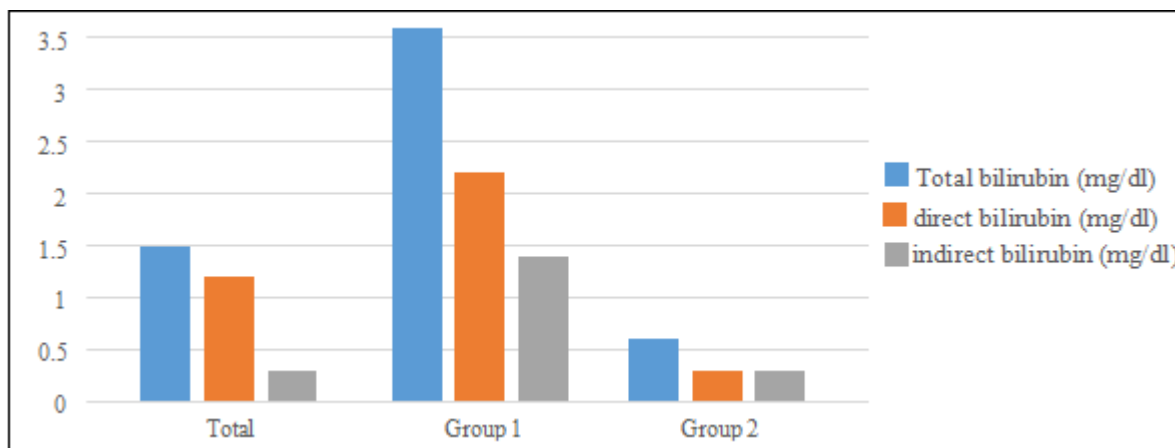
Proportion of hyperbilirubinemia in liver abscess

	No of cases	percentage
Bilirubin >= 1 mg/dl	6	30%
Bilirubin < 1 mg/dl	14	70%

Percentage of case with various level of bilirubin in group 1



Comparison in rise of bilirubin level in two groups



Complications in liver abscess with hyperbilirubinemia

		Bilirubin Level >= 1 mg/dl Group 1	Bilirubin Level <1 mg/dl Group 2
1	Rupture of the abscess in the peritoneal cavity	1 (16%)	0
2	Ascites	3 (50%)	4 (25%)
3	Pleuropulmonary complications	4 (66%)	3 (19%)
4	Pericardial complications	0	0
6	Hepatic encephalopathy: coma /precoma	0	0
7	death	0	0

the abscess more than 400 cc and in those associated with complication even if size is less.

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Treatment outcome of hyperbilirubinemia in liver abscess

management	Resolution of hyperbilirubinemia within 2 week of management
Conservative with antibiotic	1
Percutaneous aspiration with antibiotic	5
Pigtail catheter with antibiotic	0
Laparotomy	0

Association between bilirubin level and other LFT parameters in liver abscess

	Bilirubin =>1mg/dl group-1	Bilirubin <1mg/dl Group-2
Aspartate transaminase SGOT > 35 IU/L	3 (50%)	2 (16%)
Alanine transaminase SGPT > 45 IU/L	2 (33%)	3 (19%)
Alkaline phosphatase =>128	5 (84%)	7 (43%)

4. Conclusion

- 30% of patient under review had hyperbilirubinemia the cause of which in observation was obstructive cause despite fact that there was no radiological evidence of obstruction this was indicated by high alkaline phosphate And very early reversal to normal bilirubin level after rupture or drainage of abscess.
- Further evidence is that large abscess specially those near main bile duct are more prone to cause hyperbilirubinemia.
- On the basis of our study, we advocate drainage of liver abscess along with medical management at onset of all