



Research Article

Section: General Surgery

A Clinical Study of Hepatic Abscess with Reference to its Management

Prof. Narendra Nath Ganguly^{*1}, Dr. Arup Deka², Dr. Pirbi Teron³ & Dr. Richard Barla⁴

¹Professor & HOD, Department of General Surgery, Nalbari Medical College and Hospital, Nalbari, Assam

²Assistant Professor, Department of General Surgery, Jorhat Medical College and Hospital, Jorhat, Assam

³Postgraduate Trainee, Department of General Surgery, Jorhat Medical College and Hospital, Jorhat, Assam

⁴Registrar, Department of General Surgery, Jorhat Medical College and Hospital, Jorhat, Assam

ARTICLE INFO

Article History:

Received: 02-12-2024

Accepted: 05-01-2025

Keywords:

Hepatic Abscess

Liver Abscess Management

Treatment of Hepatic Abscess

Abscess Drainage Techniques

Clinical Outcomes of Hepatic Abscess

*Corresponding author:

Dr. Narendra Nath Ganguly

Professor & HOD, Department of
General Surgery, Nalbari Medical
College and Hospital, Nalbari, Assam

ABSTRACT

Background: The aim and objective of our study was to evaluate demographic pattern, various clinical findings, laboratory investigations and different treatment modalities of hepatic abscess. **Introduction:** Hepatic abscess is a pus-filled mass or lesion in the liver that can arise from liver injury or an intra-abdominal infection spread from the portal circulation. Hepatic abscesses are of various types depending on the aetiology and may be of 2 major types Pyogenic or Parasitic in origin. Hepatic abscesses are a major issue in tropical countries like India, frequently leading to serious consequences and posing difficulties in diagnosis and treatment. Early diagnosis and prompt treatment now improves the prognosis of the disease. **Material and Methods:** This was a prospective observational study where 35 patients having proven liver abscess admitted in surgery ward from March 2023 to Feb 2024 are included. A predesigned proforma was used to collect data and all data collected were analyzed statistically. **Results:** Amoebic hepatic abscesses were more common than pyogenic hepatic abscesses. Hepatic abscesses were more common in male than female with sex ratio of 7.7:1 and majority of patients belong to low socioeconomic status (71.4%). Hepatic abscesses were more common in age group of 31-40 years. Alcoholism (68.6%) and diabetes (14.3%) were the most common predisposing factors. Out of 7 aspirate culture positive, 6 (85.7%) were E. Coli and 1 (14.3%) was Klebsiella. Most of the patient ($\geq 80\%$) showed $> 50\%$ of resolution of abscess at 3rd day of treatment with different treatment modalities. **Conclusion:** The modern-day ultrasound and other minimally invasive imaging techniques had greatly improved the diagnosis and treatment of hepatic abscess. Conservative management with IV antibiotics and ultrasound guided percutaneous catheter drainage or needle aspiration of an abscess are now the most commonly used treatment modalities.

INTRODUCTION

Hepatic abscess is a pus-filled mass or lesion in the liver that can arise from liver injury or an intra-abdominal infection spread from the portal circulation.[1] Hepatic Abscess has earliest documentation from ancient times, in the works done by Bhriugu Samhita (3000 B.C)², where he mentioned of right upper abdominal pain with bloody and mucoid diarrhoea. Hepatic abscess has lethal complications, if diagnosis and treatment are not done promptly. The liver can develop an abscess under different conditions and in response to various agents. Hepatic abscesses are of various types

depending on the aetiology and may be of 2 major types Pyogenic or Parasitic in origin.[2]

The incidence of pyogenic liver abscess has come down to a great extent after the introduction of antibiotic. The most common extraintestinal manifestation of amoebiasis is hepatic abscess. In India, amoebiasis is endemic and affects 3% to 9% of people. The disease typically affects male patients between the ages of 20 and 45. Due to low socioeconomic status, the incidence of amoebiasis in tropical country is raised significantly and it is because to the poor

hygiene and sanitation.[3]

The clinical presenting features of hepatic abscess includes fever, pain in the right upper abdomen and anorexia. The initial diagnostic need is the clinical demonstration of the abscess, which is followed by its nature. Before, several clinical criteria, the features of the pus aspirated from the abscess, or the response to appropriate antibiotics clinically were used to diagnose hepatic abscesses.[4,5] The condition is more susceptible to factors like different strains of *E. histolytica* and risk factors including malnutrition and alcoholism.[6,7]

The microorganisms 'Escherichia coli, Klebsiella, Enterococcus, Bacteroides, and Staphylococcus' are most frequently associated with Pyogenic Liver Abscess.[8] The development of imaging modalities including CT scans, ultrasounds, and serological testing has made it possible to diagnose hepatic abscesses early and precisely. Treatment for hepatic abscess has been greatly impacted by advancement in diagnostic imaging and interventional radiology.[4,5]

With a success rate of 70-100%, image-guided percutaneous drainage has been utilized more frequently recently to treat liver abscesses.[9-11] While the mostly used technique for draining a liver abscess is percutaneous catheter drainage,[12] needle aspiration is thought to be less complicated, less costly, and just as effective.[13]

Hepatic abscesses are a major issue in tropical countries like India, frequently leading to serious consequences and posing difficulties in diagnosis and treatment. The causes and risk factors for hepatic abscesses have changed over time. Early diagnosis and prompt treatment now improves the prognosis of the disease. Hence the present study is to evaluate the major types of hepatic abscess presenting in this part of their country, to evaluate different socio- demographic and clinical presentations and various treatment modalities available with specific importance being laid upon image-guided treatment modalities and also their outcome in patient with hepatic abscess.

Up to 20% of mortality are related to liver abscesses.[1] Septicaemia involving the liver through the hepatic circulation, hematogenous spread through the portal venous system, ascending biliary tract infection, and secondary spread following intraperitoneal infection are the causes of PLA.

The following factors can be used to make a differential diagnosis even though there are no specific clinical criteria for differentiating between ALA and PLA: diarrhoea and severe pain abdomen raise clinical suspicion of ALA, as does young age, residency or recent travel to amoebiasis endemic locations. Ultrasound, serological tests such the indirect hemagglutination test, aspirate from the abscess (similar to anchovy paste), negative result of gram stain, and quick resolution following treatment with metronidazole are used to confirm the diagnosis. Picket fence fever, nausea, vomiting, anorexia, leucocytosis in the haematological study, anaemia, and positive blood or aspirate culture for bacterial aetiology'

are the basis for the diagnosis of PLA. Minimally invasive drainage has been the mainstay of the remarkable evolution in the management of liver abscesses. With a success rate of 70-100%, image-guided percutaneous drainage has been utilized more frequently recently to treat liver abscesses.[9-11] As radiological imaging makes percutaneous approaches like catheter drainage or needle aspiration possible, it has changed therapeutic strategy and increased diagnostic competency. While the most common technique for draining a liver abscess is the percutaneous placement of an indwelling catheter,[12] needle aspiration is thought to be less complicated, less costly, and just as effective in treating liver abscesses.[13] Open surgeries need to be reserved for the treatment of complex cases.

MATERIALS AND METHOD

Study Design: Prospective Observational study.

Study Area: Jorhat Medical College and Hospital, Dept. of General Surgery.

Study Population: Patient admitted in male and female surgery ward of dept. of surgery, Jorhat Medical College and Hospital.

Study period: 1 year (2023-2024)

Patient selection- Inclusion Criteria:

a. Patient with age group 12-60 years with history and diagnostic features suggestive of hepatic abscess.

Exclusion Criteria:

a. Patients who don't have clinical and radiological features of liver abscess.

b. Patient with hepatic abscess below 12 years of age.

c. Patients who are not willing to participate in the study.

Sampling procedure: Consecutive Sampling

Sample size: The sample will consist of the patients who fulfil the inclusion and exclusion criteria during the study period, taking 10% as prevalence, at 95% confidence interval, absolute precision 10%, the sample size for the proposed study is calculated as 35 for period of 6 months of data collection period.

$$n = (z^2 pq) / d^2$$

where, $z = 1.96$

p = prevalence

d = absolute precision

$q = 1 - p$

Data Collection (Methods and Study Tools):

- Age
- Sex
- Religion
- Occupation
- Socioeconomic status
- Co-morbidities
- Complete hemogram, LFT, HIV, anti-HCV, HBsAg, anti-HAV and anti-HEV.
- Chest X-ray, USG and CT scan features.
- Culture and sensitivity study of aspirated material from liver abscess.

· Treatment modalities

· Treatment outcome

Study Tools:

- I. Pre tested and predesigned proforma Proper history taking Clinical assessment
- II. Biochemical -CBC, LFT, HBsAg, anti-HCV, anti-HAV, anti-HEV and HIV.
- III. Radiology- Chest X-Ray, USG, CT scan (if USG is inconclusive)
- IV. Culture and sensitivity of fluid aspirated from the abscess.

Statistical Analysis:

Microsoft Excel was used to input and analyse the gathered data, and descriptive statistical data was examined. Data was presented in terms of proportions, percentage and mean $\pm$ standard deviation. Statistical significance was tested by using proper statistical technique. (NOTE- All the statistical analysis was done under the guidance of the college statistician).

RESULTS

In our clinical study of hepatic abscess with reference to its management, observation was made regarding age, sex, religion, socioeconomic status, predisposing and etiological factors, clinical features like

fever, pain in right upper quadrant, nausea and vomiting, anorexia, malaise, cough, diarrhoea, jaundice, hepatomegaly and respiratory signs like crepitations, decreased air entry and pleural effusion.' Among laboratory tests include complete hemogram, LFT, HBsAg, Anti-HCV, Anti-HAV, Anti-HEV, HIV and culture of aspirate.' Among radiological imaging includes Chest X-Ray, Ultrasonography and CT scan of Abdomen. Site, size and number of abscesses were included in Ultrasonography findings.

We try to find out aetiology on the basis of clinical features, radiological imaging, aspirate culture from hepatic abscess. Patient with typical clinical features along with suggestive USG findings and positive culture aspirate considered to have pyogenic hepatic abscess. For rare association of hepatic abscess with Hepatitis B, HIV and HCV, each patient was tested and none of the patient in study group was positive.

Medical management, USG-guided percutaneous needle aspiration, and USG-guided pigtail catheter drainage are the available modalities for treatment. The study population was split into two groups: those with abscesses less than or equal to 5 cm were treated medically, and those with abscesses larger than 5 cm were treated with pigtail catheter drainage or USG- guided percutaneous needle

Table 1: Sex

Sex	Frequency	Percentage
Female	4	11.4%
Male	31	88.6%
Total	35	100%

In our study, hepatic abscess was more common in male (88.6%) with sex ratio of 7.7:1.

Table 2: Age-Wise Distribution

Age Group	Frequency	Percentage
21-30	7	20%
31-40	12	34%
41-50	9	25%
51-60	4	11.4%
61	3	8.6%
Total	35	100%

Most of the cases belong age group of 31-40 years and second most common age group was 41-50 years.

Table 3: Religion

Religion	Frequency	Percentage
Hindu	35	100%
Total	35	100%

All the study population belongs to Hindu religion (100%).

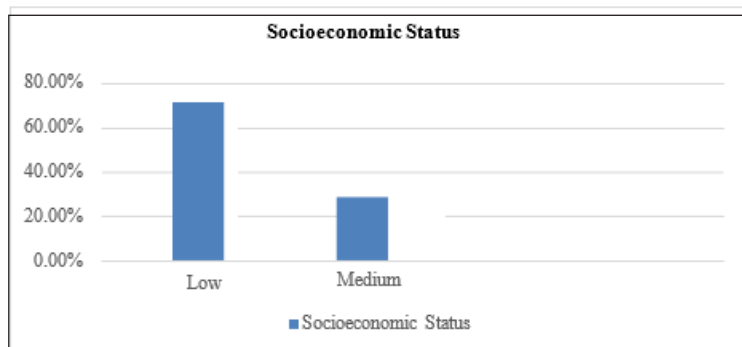


Figure 1: Socioeconomic Status

Majority of the study population belongs to low medium socioeconomic status. socioeconomic status (71.4%). 28.6% population were from

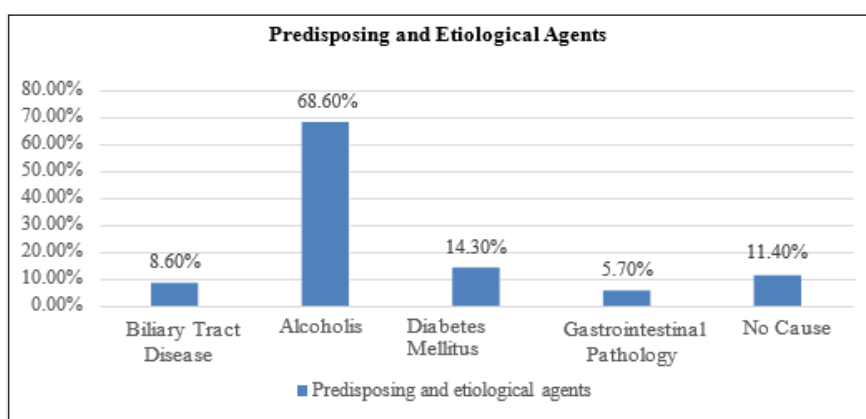


Figure 2: Predisposing and Etiological Factors

Alcoholism (68.6%) and diabetes mellitus (14.3%) were the most common predisposing factors in our study.

Table 4: Symptoms of Hepatic Abscess

S. No.	Symptoms	Frequency	Percentage
1	Right Upper Quadrant Pain	34	97.1%
2	Fever	30	85.7%
3	Nausea and Vomiting	24	68.6%
4	Anorexia	17	48.6%
5	Malaise	21	60%
6	Cough	3	8.6%
7	Diarrhea	2	5.7%
8	Jaundice	6	17.1%

Pain in right upper quadrant was consistent symptoms present in 97.1% and fever in 85.7% of patient. Nausea and vomiting were present in 68.6%. Anorexia was present in 48.6% and malaise in 60%. Jaundice, cough, and diarrhoea was present in <20%.

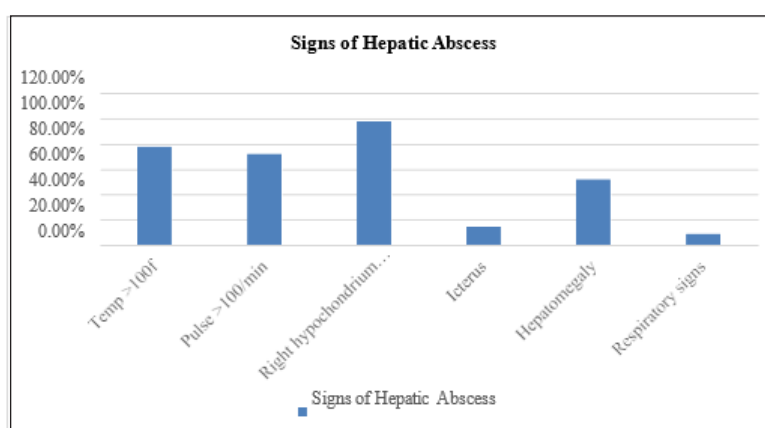


Figure 3: Signs of Hepatic Abscess

Right hypochondrium tenderness was the most common sign (97.1%) followed by pyrexia (temp >100f) 77.1% and tachycardia 71.4%. Hepatomegaly in 51.4% and icterus and respiratory signs in <20% of patient.

Table 5: Sites of Abscess Involved and Lobes of Liver Affected

S. No.	Usg Findings	Frequency	Percentage
1	Solitary Abscess	27	77.1%
	Right Lobe	24	88.8%
	Left Lobe	3	11.2%
	Both	0	0%
2	Multiple Abscess	8	22.9%
	Right Lobe	4	50%
	Left Lobe	1	12.5%
	Both	3	37.5%

Solitary abscess was found in 77.1% while 22.9% were multiple abscess. Right lobe was commonly affected than left lobe in both solitary abscess (88.8%) and multiple abscess (50%). Both lobes were involved in 8.7% of cases.

Table 6: Sizes of Abscess

Size(cm)	Frequency	Percentage
<5cm	7	20%
>5cm	28	80%
Total	35	100%

In our study most of the hepatic abscess was >5cm (80%).

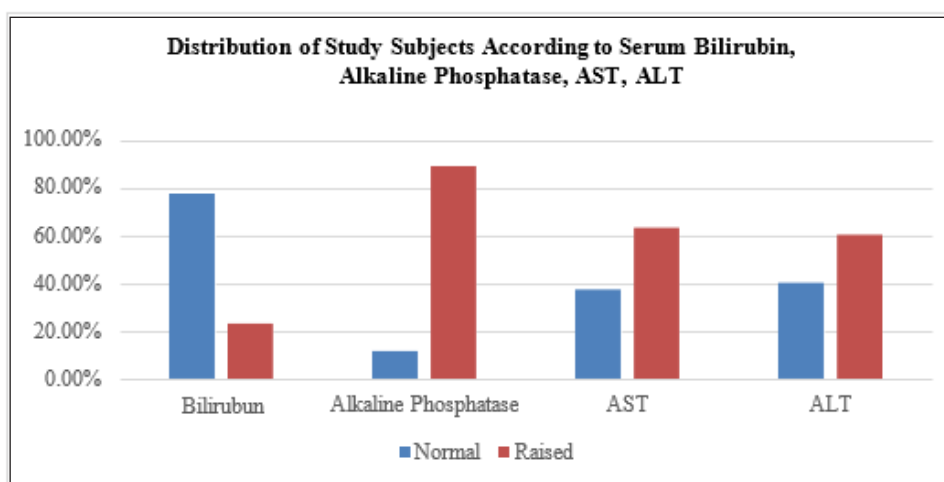


Figure 4: Distribution of Study Subjects According to Serum Bilirubin, Alkaline Phosphatase, AST, ALT

77.1% of study subject have normal bilirubin level. 408.3 U/L. AST raised in 62.9% and ALT raised in 60% of patients. Alkaline phosphatase was raised in 88.6% with mean value of

Table 7: Rare Etiology and Association

Investigations		Frequency	Percentage
HIV	Positive	0	0%
	Negative	35	100%
HBsAg	Positive	0	0%
	Negative	35	100%
Anti-HCV	Positive	0	0%
	Negative	35	100%
Anti-HAV	Positive	0	0%
	Negative	35	100%
Anti-HEV	Positive	0	0%
	Negative	35	100%
Total		35	100%

HIV, HBsAg, Anti-HCV, Anti-HEV and Anti-HAV was negative (100%) in all the study population.

Table 8: Chest X-Ray finding

Chest X-Ray	Frequency	Percentage
Right Dome of Diaphragm Elevated	19	54.3%
Not Elevated	16	45.7%
Total	35	100%

In most of the cases right dome of diaphragm was elevated (54.3%).

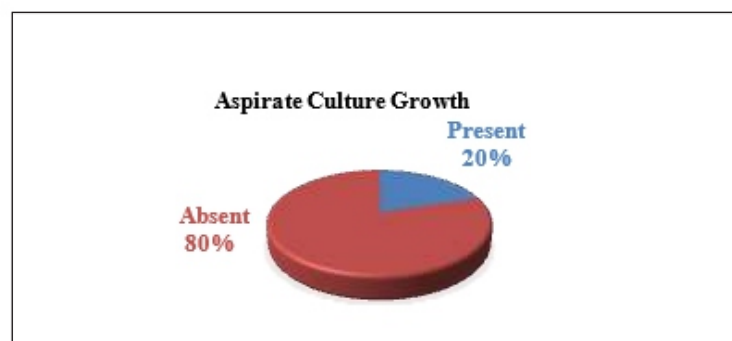


Figure 5: Aspirate Culture Growth

Only 20% of aspirate was positive in culture.

Table 9: Nature of Microorganism in Aspirate Culture

Growth	Frequency	Percentage
E. Coli	6	85.7%
Klebsiella	1	14.3%
Total	7	100%

Out of 7 aspirate culture positive, 6 (85.7%) were E. Coli and 1 (14.3%) was Klebsiella.

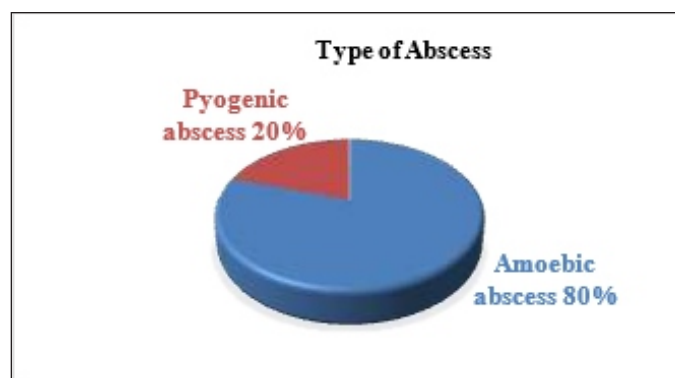


Figure 6: Type of Abscess

Out of 35 study population 28 (80%) were amoebic hepatic abscess and 7 (20%) were pyogenic abscess.

Table 10: Different Modalities of Treatment

Treatment	Frequency	Percentage
Medical and Conservative	7	20%
USG-Guided Percutaneous Needle Aspiration	15	42.9%
USG-Guided Pig Tail Catheter Drainage	13	37.1%
Total	35	100%

Those with abscess size <5cm were treated conservatively with medical management which account for 20% and size >5cm were treated with USG-guided percutaneous needle aspiration (42.9%) and USG-guided pigtail catheter drainage (37.1%).

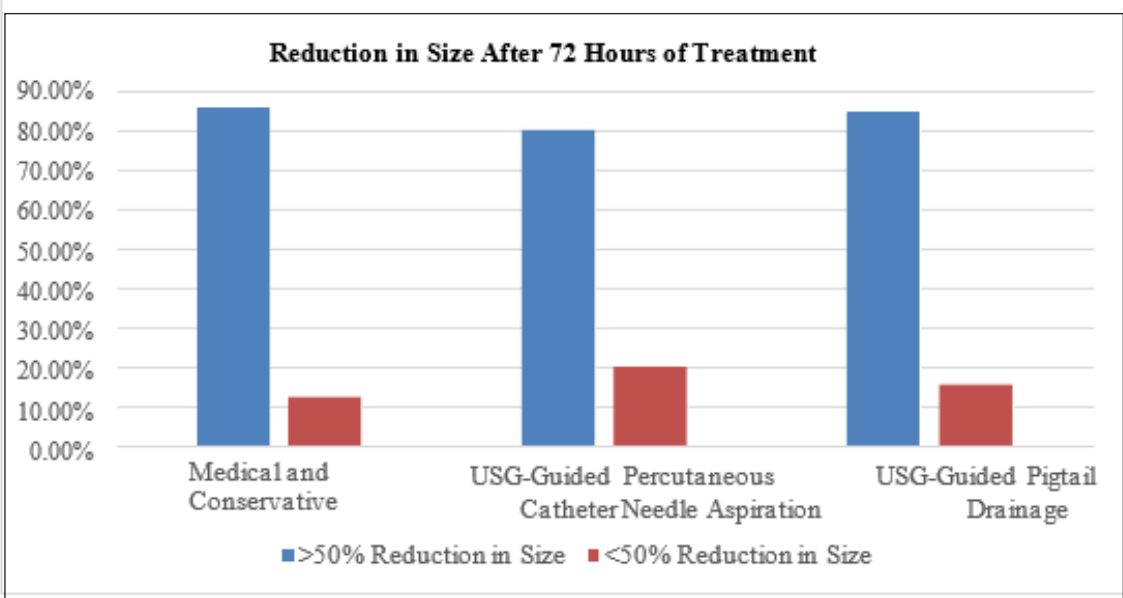


Figure 7: Reduction in Size of After 72 Hours of Treatment

Most of the patient ($\geq 80\%$) showed more than 50% treatment modalities. of resolution of abscess at 3rd day of treatment with different

Table 11: Relief of Symptoms

Type of Treatment Procedure	Duration of Relief of Symptoms		Total
	≤3days	>3days	
Medical and Conservative	4 57.1%	3 42.9%	7 100%
USG-Guided Percutaneous Needle Aspiration	14 93.3%	1 6.7%	15 100%
USG-Guided Pigtail Catheter Drainage	12 92.3%	1 7.7%	13 100%
Total	30 100%	5 100%	35 100%

Most of the patients showed relief of symptoms than or on 3rd day of treatment. With medical management with USG-guided percutaneous needle aspiration (93.3%) 57.1% of patients showed in relief of symptoms on 3rd day of treatment. and USG-guided pigtail catheter drainage (92.3%) in less

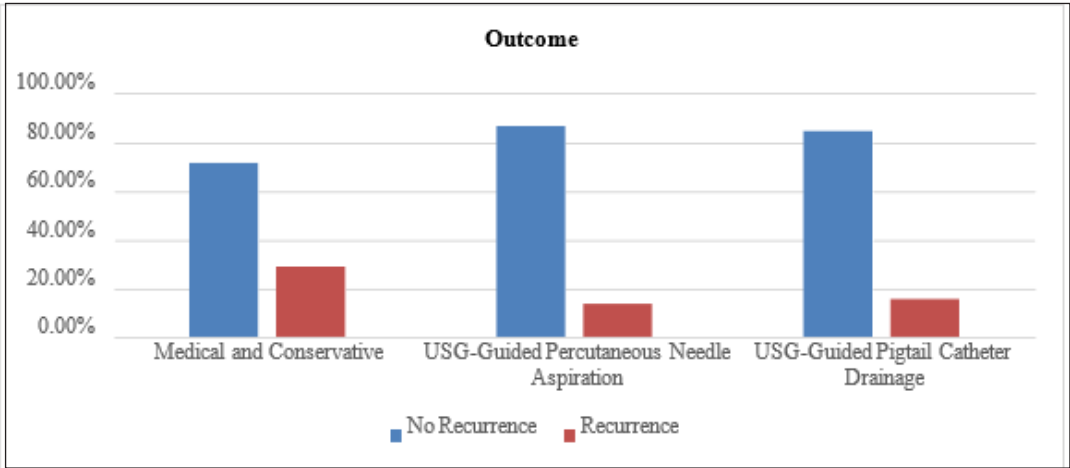


Figure 8: Outcome

In our study less than 20% had recurrence with catheter drainage. Medical and conservative management USG-guided percutaneous needle aspiration and pigtail have a recurrence of 28.6%.

DISCUSSION

Hepatic abscesses are frequent in tropical areas, such as the Indian subcontinent. Hepatic abscesses are commonly caused by amoebic *Entamoeba Histolytica*, pyogenic bacteria, mycobacterium tuberculosis, and a variety of fungi. Among these, amoebic hepatic abscess is primarily associated with developing nations such as India. They typically affect younger people, particularly men. Common complaints include fever and pain in the upper abdomen. Coexisting with diarrhoea occurs in 30% of patients.

Most of the patients in our study (34%) were in the 31-40 age group. Although ALA can affect people at any age, its occurrence is highest in the 3rd and 4th decades of life, and it is more common in adults. The maximum in 30-40 years of age.

Debakey and Ochsner et al. (1951) discovered that the age ranging from 31 to 40 years old had the highest incidence in their analysis of 263 cases.[113] In 2014, Sharma S, Gadpayle AK et al. conducted another study in India and discovered a mean age of 41.13 years.[84] The most common age group, according to Mathur et al. (2002), is between 30 and 50 years old.[114] In a 2005 study conducted in South India, Ramani et al. studied 200 cases and observed that the age range of 20 to 40 years old had the highest incidence.[115]

In the past, acute appendicitis was the primary cause of pyogenic liver abscesses, which affecting 20-30 years of age. Due to advancements in the treatment of acute appendicitis, patients between the ages of 50 and 60 are now more likely to have cryptogenic or biliary tract illness.[116] Alvarez et al. (2001) in Spain observed that around 78% of the patients in a study of 133 cases of pyogenic liver abscess were older than 60 years.[117] In 2005, Bugti et al. conducted a study in Pakistan on 84 cases of PLA and found that the mean age at which pyogenic liver abscesses occurred was 55 years old.[118]

The male to female ratio in our study was 7.7:1. In 1978, a retrospective examination revealed that the male to female ratio, which had been steady for 30 years (from 1946 to 1976), was 7.66:1. The male to female ratio during the previous 50 years reflects these researches. We also found a strong male prevalence in our analysis. The small sample size, high percentage of alcohol consumption among men, and lower awareness among women to seek medical care for illness could all be contributing factors to the elevated ratio.' When patients presented, the majority of population (85.7%) suffered from fever. Bansal P et al 94 (2017) found that majority presented with fever (72.5%). Conter and his colleagues in 1986 carried out a study from 1968 to 1983 in the University of California, Los Angeles that 88% of patients suffering from pyogenic liver abscess and 93% of patients suffering from amoebic liver abscess got fever.[106] Another study carried out by Barnes and his associates during the period of 1979 to 1985 in University of Southern California

showed that 77% of the patients with pyogenic liver abscess and 87% of the patients with amoebic liver abscess got fever at the time of presentation.[103] In Eastern world Lodhi et al in 2004 in Karachi, Pakistan showed that 48% of pyogenic hepatic abscess patients 67% of amoebic liver abscess patients got fever.[104] The results of those studies were similar to the result of our study.

In our study 97.1% of the patient had right upper quadrant pain. Abdominal pain was reported by Barnes et al. in 1987 in 66% of patients with pyogenic liver abscesses and 90% of patients with amoebic liver abscesses.[103] While De Bakey and Oschner found that 88.6% of patients had abdominal pain, Wilmot's 1962 study found that 99% of individuals had this condition.[113] Raghavan et al. done the study in India and stated that 65% had abdominal pain, while Kapoor found that 75% had pain.[105]

Anorexia was present in 48.6% and malaise in 60% in our study population. One study carried out by Onkar Singh et al in 2009.[107] Their study showed that 54% of the patients got anorexia and malaise. Our study result is close to this one. Madangopalan from India reported that anorexia was present in only 2% of the patients with amoebic liver abscess.[108] In 2022, Kapoor reported 10% of patients with liver abscess had anorexia.[109]

Out of all the patients in our study, only 17.1% had jaundice. Jaundice is not that frequent clinical feature in hepatic abscesses. It frequently manifests in large or multiple abscesses, as well as abscesses located at porta hepatis due to obstruction to the extrahepatic biliary tree. It happens after intrahepatic obstruction or accompanying hepatitis.[2] According to a 2005 study by Khanna, Chaudhary, and Kumar, 31.94% of patients experienced jaundice.[110] Another study conducted in 1996 by Sharma and Dasarathy et al. revealed that jaundice was associated with poor prognosis.[119] Conter et al. in their study found that jaundice affected 36% of individuals with pyogenic liver abscesses.[106] According to a study in 1987 by Barnes et al, 10% of patients with an amoebic liver abscess and 22% of patients with pyogenic liver abscesses reported having jaundice.[103] However, the study done by Lodhi et al in Pakistan differ from those of earlier research in that they found that jaundice was present in 43% of patients with pyogenic liver abscesses and 32% of patients with amoebic liver abscesses.[104] In a 2009 comparison research between the care of liver abscesses, Onkar Singh et al. from Indore found that 15.27% of patients had jaundice at the time of presentation.[107] According to our findings, 14.3% of the study participants had bilirubin levels higher than 1.2 mg/dl.

Majority of our study subjects had nausea and vomiting (68.6%). Bansal P et al 94 (2017) found 67.5% have nausea and vomiting. The study carried out by Oschner and De Bakey showed 22.7% patients presented with nausea and vomiting.[113] From India two studies, the first one car-

-ried out by Subramaniam and Madangopalan[108] and the other by Kapoor[109] showed nausea and vomiting was present in 6.3% and 6.6% respectively.'

Our study revealed that most patient were alcoholic (68.6%). Low socioeconomic level, a history of diabetes mellitus, alcohol addiction, and the occurrence of liver abscesses were found to be strongly correlated by Jha AK et al (2015).⁹⁰ -A positive history of alcoholism was obtained In study by Waring in 67.5% of 40 cases, in 54.5% of 44 cases by Rogers , and in 70% of 170 cases by Megaw[111] and in just 18% of the 73 cases by Jayasuria.[112] According to other research, 85%, 35%, and 40% of individuals with amoebic liver abscesses had a history of alcohol consumption.[112] Consuming excessive amounts of alcohol increases the risk of development of liver abscess, as well as the abscess's size, frequency of complications, and mortality rate. Alcohol reduces body resistance, inhibits liver function, and is often associated with malnourishment; these factors increase the risk of liver abscess in individuals, particularly those from lower socioeconomic strata. However, no relevant study has measured the quantity or duration people drink alcohol. Because of this, studies on the incidence of alcohol intake in cases of liver abscesses vary depending on the environment, customs, and socioeconomic position of the patients under study.

14.3% of our study population suffered from diabetes mellitus. Diabetes and liver abscess are more frequently associated with pyogenic liver abscesses than amoebic abscesses. Approximately 21% of ALA cases were found to be diabetic in a 2004 study by Mathur et al.[114]2% of patients with ALA are expected to have diabetes, according to other studies.[120] Diabetes and PLA are frequently associated with one another. About 15% of cases in a 2001 study by Krige et al. linked diabetic mellitus to PLA.[121] There are research that mention a proportion of 27-30%. According to research conducted in Taiwan in 1995 by Chou et al., 60.9% of the patients had diabetes, making complications like rupture more likely in diabetic patients.[122]

Seven patients in our study exhibit growth in the culture aspirate from the hepatic abscess. *E. Coli* was the most common bacteria (85.7%), followed by *Klebsiella* (14.3%). In their 2001 study, Alvarez et al. discovered that gram-negative bacteria, particularly *E. coli* were the most common organism isolated.[117] In 2006, Manzoor et al. discovered that *E. coli* was the most common.[123] According to a study by Michael D'Angelica et al., the most common organism was *E. Coli*, followed by *Klebsiella*. [120] In 2005, Bugti et al. discovered that *Klebsiella* was the most common kind.[118] However, an Indian study conducted in 2005 by Rahimian et al. discovered that *klebsiella* was most common isolate followed by *E. coli*. [56] Our study corroborates with standard literature.

In our study Solitary abscess was found in 77.1% while 22.9% were multiple abscess. Right lobe (80%) was

commonly affected than left lobe (11.4%). 8.7% of cases consisted of both lobes. According to past studies, single left lobe abscesses accounted for 16.6% of liver abscesses, multiple abscesses for 27.7% of cases, and right lobe abscesses for 55% of cases.[35] In another study, 73% cases had of right lobe amoebic abscesses, 17% have left lobe abscesses, and 10% of cases involve both lobes.[39] According to a different study, 81% of instances involved the right lobe and 19% the left.[52] There had been reports of 77% of patients had single abscess and multiples in 23% of cases.[39] Thus, the involvement of different lobes in our study is close with previous research. Our outcome thus resembles that of the standard literature.

80% of the patients in our study had amoebic hepatic abscess, while the remaining 20% of patients had pyogenic hepatic abscess. According to research done in 1938 by Oschner and associates, amoebic liver abscesses are three times more prevalent than pyogenic liver abscesses.[113] Amoebiasis and amoebic liver abscess cases have decreased as a result of improvements in public sanitation and hygiene. Nowadays, majority of hepatic abscesses reported in western literature are pyogenic liver abscesses.[2] Even if the prevalence of pyogenic abscesses is rising in developing nations like India because of hepatobiliary disorders that predispose people to development of abscess, amoebic abscesses still make up the majority. According to Onkar Singh's study, 67% of patients had an amoebic abscess.[44] Our findings thus support their conclusion that amoebic liver abscesses are more common than pyogenic liver abscesses.

Irrespective of the treatment procedure done, our study found that after therapy, >80% of the participants had an abscess cavity size reduction of more than 50%. Compared to percutaneous needle aspiration, which was successful in 80% of patients, USG guided pigtail catheter drainage was successful in reducing the size of the abscess cavity by more than 50% in 84.6% of patients.'

Most of the patients showed relief of symptoms with USG-guided percutaneous needle aspiration (93.3%) and USG-guided pigtail catheter drainage' (92.3%) in less than or on 3rd day of treatment. With medical management 57.1% of patients showed in relief of symptoms. So, our study revealed that percutaneous needle aspiration was more successful in terms of nonrecurrence of abscess and decrease in size of the abscess cavity at 3rd day of treatment.

SUMMARY

In our study, 35 cases were assessed with the goal of determining the etiological cause of the liver abscess in the patients by clinical features, radiological imaging, aspirate culture from the abscess cavity and comparison of various treatment modalities.

Others features studied were age, sex, religion, socioeconomic status, predisposing and etiological factors and laboratory investigations.

Liver abscess is a prevalent condition in underde-

-veloped nations, such as India. In our study, the majority of patients (80%) had amoebic liver abscesses, while only 20% had pyogenic liver abscesses. This suggests that amoebic liver abscesses are highly common in tropical countries like ours.

The majority of aspirate cultures reveal *E. Coli* growth, with *Klebsiella* being second most common. These findings were consistent with standard literature values. Diabetes mellitus (14.3%) and alcoholism (68.6%) were the most prevalent predisposing factors in our study.

In our study, hepatic abscess was more common in male (88.6%) with sex ratio of 7.7:1. Most of the cases are in 31-40 years age group and second most common age group was 41- 50 years. Most of the patients present with right upper quadrant pain, fever, nausea and vomiting.

Regarding the treatment of hepatic abscesses, the index of clinical symptoms, laboratory tests, and anatomic location using an ultrasound or CT scan play a crucial role in the diagnosis.

Metronidazole has been the main pharmacologic agent when hepatic abscess was first diagnosed. As an adjuvant medication, broad spectrum antibiotics were administered in a case of a pyogenic hepatic abscess. The effect of the treatment was followed up.

The patients were evaluated using clinical parameters as well as by serial ultrasonography, reduction in size of abscess cavity, relief of symptoms at third day of treatment' and recurrence. These patients were selected for therapeutic USG-guided needle aspiration or pigtail catheter drainage' of the abscess cavity if they did not exhibit any improvement or if the abscess cavity diameter was greater than 5 cm.

Both needle aspiration and USG-guided pig tail catheter drainage demonstrated a promising outcome in this study. This is as a result of rapid reduction in size of the abscess cavity, fewer recurrence cases, and a rapid improvement in clinical features.

CONCLUSION

In our study, we observed that 80% of the patients were amoebic hepatic abscess, 20% were pyogenic hepatic abscess with *E. Coli* being the most common pathogens followed by *Klebsiella*.

Diabetes and consumption of alcohol continue to constitute significant risk factors for both types of abscesses and are increasingly associated with them. For liver abscesses larger than 5 cm, image guided drainage is the most effective treatment option; however, medical care is also effective for smaller abscesses.

Comparing Ultrasound guided pigtail catheter drainage to percutaneous needle aspiration', the former was more successful in reducing the size of the abscess by more than 50%.

Patients treated with needle aspiration and USG guided catheter drainage showed quick improvement, with needle aspiration slightly superior to other method.

REFERENCES

1. Mischnick A, Kern WV, Thimme R. Pyogenic liver abscess: Changes of Organisms and Consequences for Diagnosis and Therapy. *Deutsche Medizinische Wochenschrift* (1946). 2017 Jul 20;142(14):1067-74.
2. Surgery of the liver and biliary tract. Blumgart L H; vol II (3'd ed): 1 147-66
3. Mc cuskey RS, Reilly FD: variant of hepatic anatomy, dynamic structure, and its regulation, *Semin Liver disease* 1993;13:45-18. *American journal of surgery* January 1973 Vol-125(1)70-79.
4. Davis A, Pawlowski ZS. Amoebiasis and its control. *Bull World Health Organ.* 1985;63(3):417-26.
5. Sharma MP, Ahuja V. Management of amoebic liver abscesses *Med Res.* 2000 Jul-Aug;31(4 Suppl): S4-5.
6. Johnson RD, Mueller PR, Ferrucci JT Jr, et al. Percutaneous drainage of pyogenic liver abscesses. *AJR Am J Roentgenol.* 1985 Mar;144(3): 463-7. DOI:10.2214/ajr.144.3.463
7. Rahimian J, Wilson T, Oram V, et al. Pyogenic liver abscess: recent trends in etiology and mortality. *Clin Infect Dis.* 2004 Dec 1; 39 (11):1654-9. Epub 2004 Nov 9.
8. Perez Jr JY. Amoebic liver abscess: Revisited. *Philip J Gastroenterol.* 2006;2:11-3.
9. Lin YT, Liu CJ, Chen TJ, Chen TL, Yeh YC, Wu HS, et al. Pyogenic liver abscess as the initial manifestation of underlying hepatocellular carcinoma. *Am J Med.* 2011;124:1158-1164. doi: 10.1016/j.amjmed.2011.08.012.
10. Chen CH, Wu SS, Chang HC, Chang YJ. Initial presentations and final outcomes of primary pyogenic liver abscess: a cross-sectional study. *BMC Gastroenterol.* 2014;14:133. doi: 10.1186/1471-230X-14-133.
11. Pang TC, Fung T, Samra J, Hugh TJ, Smith RC. Pyogenic liver abscess: An audit of 10 years' experience. *World J Gastroenterol.* 2011;17:1622-1630. doi: 10.3748/wjg.v17.i12.1622.
12. Jeong SW, Jang JY, Lee TH, Kim HG, Hong SW, Park SH, et al. Cryptogenic pyogenic liver abscess as the herald of colon cancer. *J Gastroenterol Hepatol.* 2012;27:248-255. doi: 10.1111/j.1440-1746.2011.06851.x.
13. Tian LT, Yao K, Zhang XY, Zhang ZD, Liang YJ, Yin DL, et al. Liver abscesses in adult patients with and without diabetes mellitus: an analysis of the clinical characteristics, features of the causative pathogens, outcomes and predictors of fatality: a report based on a large population, retrospective study in China. *Clin Microbiol Infect.* 2012;18:E314-E330. doi: 10.1111/j.1469-0691.2012.03912.x.

How to cite: Narendra Nath Ganguly, Arup Deka, Pirbi Teron, Richard Barla. A Clinical Study of Hepatic Abscess with Reference to its Management. *International Medicine*, 2025;11(1):1-10.