

## Original Research Article

# Clinical profile and management of pyogenic liver abscesses in a tertiary care hospital

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### ABSTRACT

**Background:** Pyogenic Liver abscesses are potentially life threatening if left untreated. They pose a major Diagnostic and therapeutic challenge to modern world. Interventional radiology is becoming standard of care for liver Abscesses.

**Methods:** All patients of pyogenic liver abscess admitted to Government Medical College and hospital Jammu, J and K, India from October 2018 to November 2019 were prospectively studied. Demographics, presentation, lab reports and management strategies were evaluated.

**Results:** Total of 60 patients of pyogenic liver abscesses were studied with 81.7% males. Alcohol was found to be most common risk factor with 55% of patients being alcoholic. Right lobe of liver was involved in 66.7% of patients. Segment VI and VII were involved in 50% of patients. The most common clinical symptom was right upper quadrant pain (98.3%), followed by fever (91.7%). The most common clinical sign was right upper quadrant tenderness (91.7%). Percutaneous drainage with catheter placement was the most common and successful modality of management associated with least hospital stay.

**Conclusions:** Pyogenic liver abscess is a rare but serious problem. Early diagnosis and treatment are necessary to avoid mortality. Percutaneous drainage along with I.V antibiotics is the best form of management.

**Keywords:** Hepatic abscess, Liver abscess, Management of liver abscess, Pyogenic liver abscess, Percutaneous drainage of liver abscesses

### INTRODUCTION

Pyogenic liver abscesses are mostly seen in developed countries. Amoebic Liver abscesses are more common worldwide. It poses a major diagnostic and therapeutic challenge to modern world and is potentially life threatening if left untreated.

They may be single or multiple and are more frequently seen in right lobe of liver.<sup>1</sup> The most commonly identifiable cause of pyogenic liver abscess is ascending biliary infection associated with obstruction.<sup>2-4</sup> The cause of obstruction has a geographical bearing. In Asian countries hepatolithiasis with biliary strictures account

for most of the cases of PLA.<sup>5,6</sup> In western world obstruction secondary to underlying malignancy leads to PLA.<sup>2,3,7</sup> The most common infecting agents are Gram negative bacteria. 40% of abscesses are polymicrobial and 40% are mono microbial. Rest 20% are culture negative. The most common infecting agents include *Escherichia coli*, *Streptococcus faecalis*, *Klebsiella* and *Proteus Vulgaris*. Anaerobic organisms like *Bacteroides Fragilis* are also seen frequently. Staphylococcus and streptococcus species are commonly found in patients with endocarditis and infected indwelling catheters.

Patients of pyogenic liver abscess usually present with right upper quadrant pain, fever, nausea and vomiting.

Jaundice may be present in some patients. Leukocytosis, elevated ESR and elevated alkaline phosphate level are most common lab findings. Ultrasonographic examination reveals round to oval hypoechoic lesions with well-defined borders. CT is more sensitive and shows hypodense lesions with peripheral enhancement.

The current treatment modalities besides treating underlying cause and I.V antibiotics include percutaneous needle aspiration with or without catheter placement and surgical drainage via the laparoscopic or open drainage. The empirical I.V antibiotic therapy should include both Gram positive and Gram-negative coverage.

## METHODS

This prospective study was conducted in Government Medical College and hospital Jammu, J and K, India from October 2018 to November 2019. The study consists of patients admitted in general surgery wards of Government medical college and hospital Jammu, J and K, india. The diagnosis of Pyogenic liver abscess was made based on history, clinical features, laboratory investigations, radiology and serological investigations. Patients were treated with medical treatment with or without one of the following:

- Percutaneous needle aspiration
- Percutaneous catheter drainage
- Open surgical drainage

### Inclusion criteria

- Patients admitted in general surgery wards of GMC Jammu and confirmed to be having Liver Abscess.

### Exclusion criteria

- Hydatid cyst of liver
- Amoebic Liver abscess
- Primary and Secondary malignancies of liver

Study period was October 2018 to November 2019.

### Statistical analysis

A total of 60 patients satisfying the inclusion criteria were included in study and proportions of various outcome measures of interest were arrived and tabulated.

## RESULTS

In this study 60 patients with pyogenic liver abscess were studied. 81.7% of patients were males and 18.3% were females. 55% of patients were Alcoholic. 6.7% of patients were Diabetic. Right lobe of liver was involved in majority of cases amounting to 66.7%. Left lobe was involved in 20% and both lobes were involved in 13.3%.

Segment VI and VII were most commonly involved segments accounting to 25% each.

The most common presenting symptom was right upper quadrant pain (98.3%) and most common presenting sign was right upper quadrant tenderness (91.7%). The other signs and symptoms present are given in Table 1 and 2 with percentage of their occurrence. The mean laboratory values of various parameters studied along with standard deviation are given in Table 3.

**Table 1: Symptoms and their percentage.**

Symptoms	Proportion
Right upper quadrant pain	98.3%
Fever	91.7%
Rigors	61.7%
Chills	61.7%
Jaundice	28.3%
Vomiting	6.7%
Cough	1.7%

**Table 2: Signs and their percentage.**

Signs	Proportion
Right upper quadrant tenderness	91.7%
Icterus	28.3%
Hepatomegaly	26.7%
Splenomegaly	5%
Ascites	0

**Table 3: Laboratory values.**

Laboratory tests	Mean value
TLC	9631.67±4208.687
HB	9.660±1.27
Serum bilirubin	1.778±1.874
Alkaline phosphate	223.68±137.206
SGOT	75.82±57.54
SGPT	85.82±72.08
Albumin	3.237±.8739
INR	1.2307±.17889

All the patients were started with broad spectrum empirical antibiotic therapy. The most commonly used antibiotics were piperacillin and tazobactam and metronidazole (73.3%). Rest patients were treated with Ciprofloxacin and metronidazole. 20.3% of patients were treated with only I.V antibiotics. These patients were having small abscesses (<100cc). 65% of patients were given additional treatment modality in form of percutaneous drainage with catheter placement. Open surgical drainage was required in 14.7% of patients. These patients were having very large abscesses amenable to rupture. The mean duration of hospital stays for patients treated with I.V antibiotics only, I.v antibiotics plus percutaneous drainage and I.V antibiotics with open surgical drainage were 11±2.48, 6.8±1.47 and

9.9±2.13 respectively. Clearly patients treated with I.V antibiotics and percutaneous drainage were having least hospital stay.

## DISCUSSION

In this study, the mean age of incidence was 40.70 years which is consistent with results of Bugti QA et al.<sup>8</sup> Males were more frequently affected than females with male to female ratio of 4.4: 1 which is consistent with Liew KV et al.<sup>9</sup> However, Gyroffy et al, showed a slightly higher incidence in females than males.<sup>10</sup> The higher incidence in males in population may be due to house bound habitat of females. This study showed 55% of patients with pyogenic liver abscess as alcoholic. The same percentage was 84% in Seeto RK et al.<sup>4</sup> The commonest clinical presentation in this study observed was right upper quadrant pain which was observed in 98.3% of patients followed by fever (91.75%), rigors and chills (61.7%), and jaundice (28.3%). This is similar to the observations made by Sharma N et al, and Kebede A et al.<sup>11,12</sup> In this study, most common clinical sign was right upper quadrant tenderness which was observed in 91.7% of patients followed by jaundice (28.3%), Hepatomegaly (26.7%) and splenomegaly (5%). The earlier results noted in Kebede et al, were similar. The lab results in this study were leukocytosis (36%), anaemia (60%), elevated alkaline phosphatase (58%), elevated bilirubin (33%), raised SGOT and SGPT (8.33%), hypoalbuminemia (25%) and deranged coagulation profile (26%).

The most accurate diagnostic tool in this study was USG although CT scan was done in all the cases. Right lobe of liver (segment VI and VII) was most commonly involved (66.7%). Left lobe was involved in 20% of cases. Both lobes were involved in 13.3% of cases.

## Management

Most of the patients in this study were managed by I.V antibiotics and percutaneous drainage with catheter placement (65%). The most commonly used antibiotic was Piperacillin and Tzobactam and Metronidazole. I.V antibiotics were given for 10 days followed by oral Metronidazole for 6 weeks. Piperacillin and Tazobactam were given in doses of 4 g and .5 g respectively thrice daily and Metronidazole was given in doses of 800 mg thrice daily. Patients were followed with USG twice weekly. 14.7% of patients needed laparotomy and open drainage. 20.3% of patients with abscess having <100cc volume were treated with antibiotics only.

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