

Socio-Demographic and Clinico-Pathological Profile of Patients with Liver Abscess

Dr.Abrar, Dr.Nisar A. Ansari, Dr.A. K. Roy, Dr.Osman Musa
Department of General Surgery, Era's Lucknow Medical College and Hospital, Lucknow
Corresponding Author: Dr. Abrar
Department of General Surgery, Era's Lucknow Medical College and Hospital, Lucknow

ABSTRACT

Introduction: Liver abscess (LA) is a common clinical condition with pyogenic and amoebic etiologies, often presenting with abdominal pain and fever. To avoid complications, early detection and treatment are crucial.

Methods: This study comprised of 72 persons (≥ 18 years old) with a confirmed liver abscess were enrolled in a two-year prospective observational study at Era's Lucknow Medical College & Hospital. Microbiology, laboratory and imaging results, clinical characteristics, and demographic information were gathered. Medical treatment and image-guided or surgical drainage were part of the management. SPSS v26 was used for statistical analysis.

Findings: 84.7% of the population were male, and the mean age was 41.65 ± 14.23 years. The majority of patients were from lower-class or lower-middle-class backgrounds. The most common symptoms were fever (66.7%) and abdominal pain (91.7%). Laboratory results revealed increased liver enzymes (SGOT 65.96 ± 2.17 IU/L, SGPT 89.81 ± 6.36 IU/L, and ALP 361.96 ± 71.32 IU/L) and anemia (Hb 10.71 ± 2.48 g/dL). 72.2% of the 36 aspirated cases were amoebic, and the most frequent isolate among culture-positive cases was *E. coli*. Solitary abscesses (72.2%) and right lobe involvement (87.5%) were the most common. The most frequent consequence was pleural effusion (18.05%).

Conclusion: Liver abscess primarily affects middle-aged males from lower socioeconomic strata. Pyogenic abscesses are less common than amoebic ones. To lower morbidity and consequences, prompt diagnosis and effective treatment—including drainage when necessary—are essential.

Keywords: Liver abscess, Amoebic liver abscess, Pyogenic liver abscess, Ultrasound, Complications

I. INTRODUCTION

Liver abscess primarily affects middle-aged males from lower socioeconomic strata. Pyogenic abscesses are less common than amoebic ones. ^[1] To lower morbidity and consequences, prompt diagnosis and effective treatment—including drainage when necessary—are essential. ^[2]

Most of these abscesses are categorized as pyogenic or amoebic, however a small percentage are brought on by parasites and fungi. The majority of amoebic infections are caused by *Entamoeba histolytica*. Though some species, such as *E. coli*, *Klebsiella*, *Streptococcus*, *Staphylococcus*, and anaerobes, are more commonly seen, pyogenic abscesses are usually polymicrobial. ^[3]

Amoebiasis is currently the third most common parasite disease-related cause of death. Because of overcrowding and poor sanitation, the illness is widespread in tropical nations like India. Fever and stomach pain were the most common symptoms of LA, occurring in 94% and 99% of patients, respectively. Various investigations have reported it to be between 67 and 87% and between 62 and 94%. ^[4,5,6] In addition to being a part of a colonic disease that predisposes to LA, diarrhea in LA may be caused by concomitant intestinal amoebiasis. Although 23% of patients reported it, it is an uncommon event. According to earlier research, it can range from 4% to 33%. ^[5-7] Another rare ailment in Los Angeles is coughing. The underlying lung parenchyma's compressive collapse and the pleural effusion that results are usually the cause. ^[8] Jaundice and ascites are two uncommon symptoms of LA. Of the patients, 26% had jaundice. In earlier research done in India, it was found in 45–50% of patients. However, since the advent of efficient antibiotic treatments, the condition's prevalence has declined. According to Sharma et al., it only occurred in 12.7% of patients. ^[5]

Abdominal ultrasonography remains the preferred diagnostic technique for hepatic pathologies, including LA. Between 92% and 97% is the range of its sensitivity for LA detection. ^[9] Of the 65 patients over the age of 18, 25 were found to have a pyogenic liver abscess (PLA); interestingly, all of the patients were male and had an average age of 37.9 years. ^[10] The majority of liver abscess cases (53.3%, $n=60$) were in the age range of 21–40 years, with a definite male predominance (76.7%, $n=60$). ^[11] The primary aim of this study is to analyze the socio-demographic and clinico-pathological profile of patients diagnosed with liver abscess. By identifying common demographic patterns among affected individuals, the study seeks to enhance understanding of population groups at greater risk and provide insights into possible preventive strategies.

Understanding these clinico-pathological factors is essential for optimizing diagnostic accuracy, guiding effective management approaches, and improving patient prognosis.

AIMS:

- To Study the Socio-demographic and clinico-pathological profile of the patients with liver abscess.

OBJECTIVES:

Primary Objective: -

- To Study the common clinical presentation, demographic profile and Pathology of Liver abscess.

Secondary Objectives: -

- To determine the complication of the disease.

II. MATERIALS& METHODS

Study Design and Setting: This two-year prospective observational study was conducted in the general surgery department of Era's Lucknow Medical College & Hospital (ELMCH), located in Lucknow, India. In order to provide a varied sociodemographic mix and enable thorough evaluation of liver abscess presentation and outcomes in this population, the tertiary care environment made it possible to enroll patients from both urban and rural catchment areas.

Population and Sample Size of the Study: Adult patients (≥ 18 years old) who presented to ELMCH's General Surgery outpatient or inpatient services with a clinical and imaging diagnosis of a liver abscess made up the study population. The sample size was determined using the standard proportion formula (with $\alpha = 0.05$ and margin of error = 10%), based on previous research (Choudhary et al.) and estimating the least common symptom (anemia) with a prevalence of 25%. This resulted in a minimum required sample of 72 patients, all of whom were enrolled consecutively.

Criteria for Inclusion and Exclusion: Patients who were 18 years of age or older and had a confirmed liver abscess based on imaging and/or aspirate results were included in the study. To preserve the homogeneity of primary liver abscess cases that were not complicated, patients who had already ruptured liver abscesses (such as those that spilled into peritoneal or pleural spaces) or those who had traumatic liver abscesses (i.e., those that resulted directly from external injury) were not included.

Study Method: Each subject underwent systematic data collection of sociodemographic information, clinical presentation, laboratory parameters, imaging investigations, and microbiological culture of aspirated material following informed consent and institutional ethical approval. Based on the size, location, and reaction of the abscess, management choices were made about open surgical drainage, percutaneous catheter drainage, medicinal therapy, and percutaneous needle aspiration.

Statistics: Collected data were entered and managed in Microsoft Excel, then analyzed using SPSS version 26. Continuous variables were expressed as mean $\pm$ standard deviation or median (interquartile range) depending on distribution, while categorical data were shown as counts and percentages. Group comparisons employed the Student's t-test or Mann-Whitney U test for continuous variables and Chi-square or Fisher's exact tests for categorical variables. A two-tailed p-value < 0.05 was considered statistically significant throughout.

III. RESULTS AND OBSERVATIONS:

The age distribution of the 72 liver abscess patients shows that middle-aged people are the most commonly affected. Patients in the 31–35 age group made up the largest percentage (30.56%), followed by those in the 41–45 age group (22.22%) and those in the 36–40 age group (18.06%). The standard deviation was 14.23 and the overall mean age was 41.65 years. [Table -1] There was a noticeable male preponderance in the gender distribution of the 72 liver abscess patients. Only 15.28% (n=11) of the study population were female, whereas 84.72% (n=61) were male. In particular, 47.22% (n=34) belonged to the lower middle class, whilst 52.78% (n=38) belonged to the lower class. With 91.67% (n=66) of cases reporting abdominal pain and 66.67% (n=48) reporting fever, these symptoms were the most prevalent and suggested an underlying inflammatory or infectious process. While cough and dyspnea were observed in 18.06% (n=13) of patients, vomiting was observed in 26.39% (n=19) of patients, indicating potential thoracic or systemic involvement. [Table 2]

With a mean hemoglobin (Hb) level of 10.71 ± 2.48 g/dL, the cohort was at risk for anemia. According to differential leukocyte counts, lymphocytes ($77.35 \pm 11.22\%$) were more common than monocytes ($17.86 \pm 10.08\%$), whereas eosinophils ($2.01 \pm 2.03\%$) and basophils ($2.65 \pm 1.52\%$) were less common. [Table 3] There were instances of moderate hyperbilirubinemia, as indicated by the mean total bilirubin level of 1.67 ± 1.93 mg/dL. Hepatocellular and biliary tract involvement was indicated by the significantly raised levels of liver enzymes, including SGOT (65.96 ± 2.17 IU/L), SGPT (89.81 ± 6.36 IU/L), and alkaline phosphatase (ALP) (361.96 ± 71.32 IU/L). [Table 4]

Seventy-two percent (n=26) of the 36 patients who had aspiration of liver abscess content were diagnosed as amoebic abscesses, which are distinguished by their distinctive anchovy sauce appearance. [Figure 1]

A considerable percentage of cases, 33% (n=24), were sterile, meaning no bacterial growth was found, according to a culture analysis of pus from liver abscesses. This is frequently observed in amoebic abscesses. *E. coli* was the most frequently isolated bacterium among culture-positive cases, occurring in 13.3% (n=9) of patients, followed by *Pseudomonas* in 2.79% (n=2) and *Klebsiella* in 1.39% (n=1). [Figure 2]

The right lobe was implicated in 87.50% (n=63) of the 72 liver abscess patients evaluated ultrasonographically, whereas the left lobe was only affected in 12.50% (n=9) of the cases. The most frequent appearance in terms of abscess number was a single abscess, which was observed in 72.22% (n=52) of patients. Two abscesses were identified in 20.83% (n=15), and multiple abscesses in 6.95% (n=5). [Figure 3] The majority of the 72 patients had significant liver abscesses, according to the volume assessment of the abscesses. In particular, a significant disease load was indicated by the fact that 37.50% (n=27) of patients had abscess volumes more than 300cc. Due to the liver's close proximity to the diaphragm and pleural space, pleural effusion was the most common complication among the 72 patients with liver abscess, occurring in 18.05% (n=13) of cases.

IV. DISCUSSION

One of the most significant clinical issues that Indian doctors deal with is liver abscess. Clinically, the two most prevalent types of liver abscess—pyogenic and amoebic—are typically indistinguishable, and since they have different treatment options, further testing and/or invasive procedures are typically required to make the diagnosis [12]. Patients with liver abscesses who visited the outpatient department and intensive care unit (IPD) at Era's Lucknow Medical College and Hospital (ELMCH), Lucknow, participated in this two-year prospective observational study. The study's objective was to assess these patients' clinicopathological and demographic profiles.

Most of the patients in our study were between the ages of 31 and 35, followed by those between the ages of 41 and 45, 36 and 40, and 46 and 50. The age group with the fewest patients was 26 to 30. Similarly, Paik et al. (2015) [14] identified the highest occurrence among patients aged 31–40 years, while Rampal et al., 2021 [13] found the majority of cases in the 21–30 age group.

There was an obvious male preponderance among the patients in this study. Similarly, men were found to be at higher risk by Santos-Rosa et al., 2016 [15]. In contrast to our findings, Gyorffy et al., 1987 [16] reported a higher incidence in females (male:female ratio 13:20); this discrepancy might be because their study only looked at female cases. There is a considerable correlation between lower socioeconomic status and the socioeconomic distribution of the 72 liver abscess patients in this study. Of the patients, 47.22% were from the lower middle class, while the majority (52.78%) were from the lower class. Similarly in the study of Dhaked GK et al, 2022 [17] most of the patients is belong to lower class

In this study, abdominal pain was the most prevalent symptom, reported in 91.67% of patients, underscoring its role as a key clinical feature of liver abscess. Fever followed closely, occurring in 66.67% of cases, indicative of an underlying infectious or inflammatory process. These findings are consistent with those of previous studies. According to Santos-Rosa et al., 2016 [15], 90% of patients with liver abscesses experienced stomach pain, 70% experienced fever, and 40% experienced jaundice. Similarly, in a retrospective analysis of 103 patients of pyogenic liver abscess, Alkofer et al., 2012 [18] observed that the most common symptoms were fever and stomach pain. Of the individuals with liver abscesses in this study, 31.94% had a history of alcohol use, whereas the majority (68.06%) did not. In contrast, alcohol consumption was more common among patients in studies by Rampal et al., 2021 [13] and Alam F et al., 2014, [19], indicating a stronger correlation between alcoholism and liver abscess in their cohorts.

The hematological results show a propensity for anemia (Hb: 10.71 ± 2.48 g/dL), most likely brought on by inflammation or chronic illness. The significantly high total leukocyte count ($14,998.74 \pm 7,745.00/\text{mm}^2$) indicates an ongoing infection or inflammatory condition.

Our study's biochemical results point to serious hepatic impairment. Some members of the cohort have mild hyperbilirubinemia, as indicated by the mean total bilirubin level (1.67 ± 1.93 mg/dL). Both hepatocellular and cholestatic involvement were indicated by the significantly raised liver enzymes, including SGOT (65.96 ± 2.17 IU/L), SGPT (89.81 ± 6.36 IU/L), and a considerably high ALP (361.96 ± 71.32 IU/L). Our results reveal both parallels and divergences with Rampal K et al., 2021, [13]. Our cohort had a consistently elevated mean SGOT level, suggesting more consistent hepatocellular involvement, whereas Rampal reported elevated SGOT levels in 58.2% of liver abscess cases. Rampal reported $>2\times$ normal in 92.53% of patients, which is comparable to the high mean ALP in our data, indicating that ALP elevation was prevalent in both trials. Remarkably, only 11.94% of Rampal's cases had elevated bilirubin, although our mean points to a higher frequency of hyperbilirubinemia.

Of the 36 patients who underwent aspiration, 27.78% (n=10) had pyogenic liver abscesses, and 72.22% (n=26) had amoebic liver abscesses (ALA) that resembled the traditional anchovy sauce. The prevalence of ALA is consistent with local patterns and emphasizes how crucial early differentiation is for focused therapy. This finding is in contrast to that of Abbas et al. 2014 [20], who found that among their cohort of 67 patients, the majority of whom were male and had a mean age of 47.4 years, there was a higher prevalence of pyogenic abscesses (n=56). But in a larger prospective analysis of 125 patients, Jha et al., 2015 [21] reported that ALA was the most common (88%), which supports the pattern we saw.

According to pus culture investigation of liver abscess aspirates, 33% (n=24) of the cases were sterile, which is typical of amoebic liver abscesses where there is usually no bacterial growth. *Escherichia coli* was the most commonly isolated bacteria among culture-positive cases, occurring in 13.3% (n=9) of patients. Less frequently, *Pseudomonas* and *Klebsiella pneumoniae* were found in 2.79% (n=2) and 1.39% (n=1) of patients, respectively. For example, Liu Y et al. 2023 [22] discovered that *E. coli* was more frequently linked to patients who had previously undergone hepatobiliary surgery, while *K. pneumoniae* was the primary cause, particularly in diabetic patients.

Our study's lower *K. pneumoniae* detection rate could be due to a higher percentage of amoebic abscesses, which are typically culture-negative, or regional microbial variations. Furthermore, our results support the relationships found in previous research by indicating that biliary tract disease may be a significant risk factor for abscesses linked to *E. coli*.

In line with established anatomical and vascular predispositions, ultrasonographic assessment of our cohort of 72 patients with liver abscesses showed a clear preference for the right lobe, which was involved in 87.50% (n=63) of cases. There were only 12.50% (n=9) affected left lobes. The most frequent finding was a single abscess, which was seen in 72.22% of cases (n=52). Multiple abscesses were found in 6.95% of cases (n=5) and two abscesses in 20.83% of cases (n=15). These results are consistent with a meta-analysis by Mangunkiya et al., 2012 [12], which found that solitary lesions were present in more than half of patients and that right lobe involvement was present in 83% of liver abscess cases.

Large liver abscesses were more common in our group, with 37.50% (n=27) measuring more than 300cc, which is suggestive of advanced illness at presentation, according to volume analysis. In 25.00% (n=18) and 22.22% (n=16) of cases, moderate-sized abscesses between 200 and 300 cm and 100 and 200 cm were found, respectively. The majority of patients in Arya D et al.'s 2018 study, on the other hand, had abscess volumes between 100 and 300 cm, followed by smaller (<100 cm) and bigger (>300 cm) abscesses, according to their report [23]. This discrepancy might be the result of variations in the severity of the illness, the time of diagnosis, or access to healthcare in a given region.

In our research the most frequent consequence, pleural effusion, is a reflection of anatomical closeness to the diaphragm. AKI and rupture liver abscess follow. Pleural effusion is the most frequent consequence, according to Hathila TN et al., 2014 [24].

TABLES AND FIGURES

Table 1. Age, Gender, Socio- Economic Status and Clinical Profile Distribution of Enrolled Patients (n = 72)

Parameter	Category	n	%
Age Distribution	26–30 years	7	9.72
	31–35 years	22	30.56
	36–40 years	13	18.06
	41–45 years	16	22.22
	46–50 years	8	11.11
	Mean ± SD	41.65 ± 14.23 years	
Gender	Female	11	15.28
	Male	61	84.72
Socioeconomic Status	Lower	38	52.78
	Lower Middle	34	47.22
Clinical Profile	Fever	48	66.67
	Abdominal pain	66	91.67
	Vomiting	19	26.39
	Weight loss	0	0.00
	Diarrhoea	5	6.94
	Cough & breathlessness	13	18.06
co-morbidity	Diabetes Mellitus	3	4.17

TABLE-2: BASED ON HAEMATOLOGICAL PROFILE.

N=72		MEAN
Hb		10.71±2.48
TLC		14998.74±7745.00
DLC	Lymphocytes	77.35±11.22
	Monocytes	17.86±10.08
	Eosinophils	2.01±2.03
	Basophils	2.65±1.52

TABLE 3. BASED ON BIOCHEMICAL PROFILE.

	MEAN±SD
TOTAL BILIRUBIN	1.67±1.93
SGOT	65.96±2.17
SGPT	89.81±6.36
ALP	361.96±71.32
PT	15.62±5.02
INR	1.38±0.45
Serum Protein	3.3±1.25
Serum Albumin	2.9±1.12

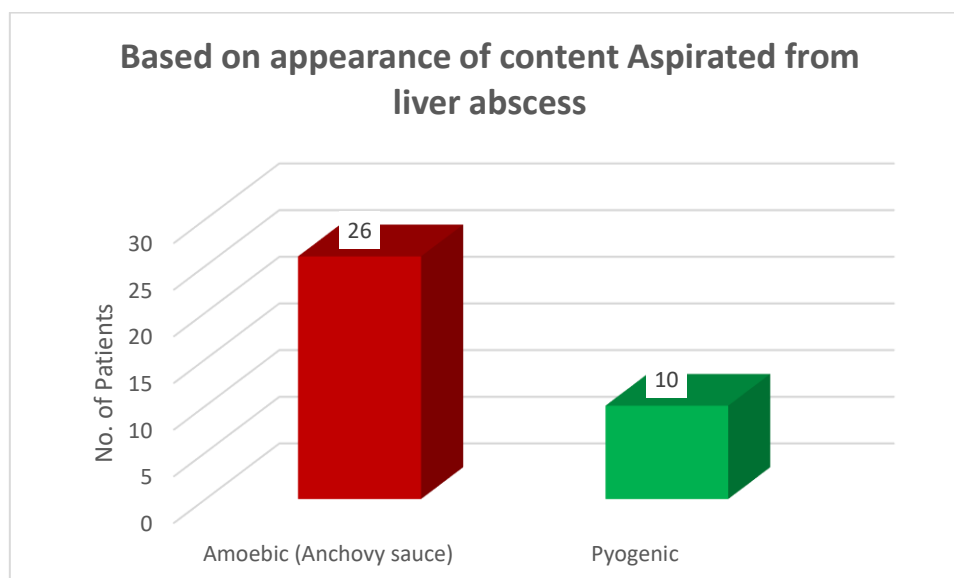


Figure-1 Graphical representations of Based on appearance of content Aspirated from liver abscess

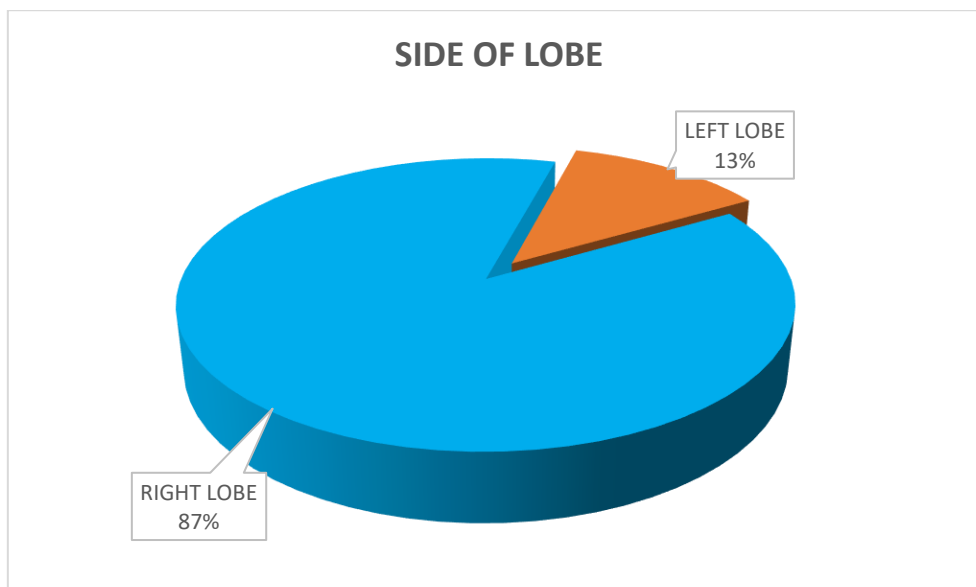


Fig-2 Graphical representations of Side of Lobe USG findings.

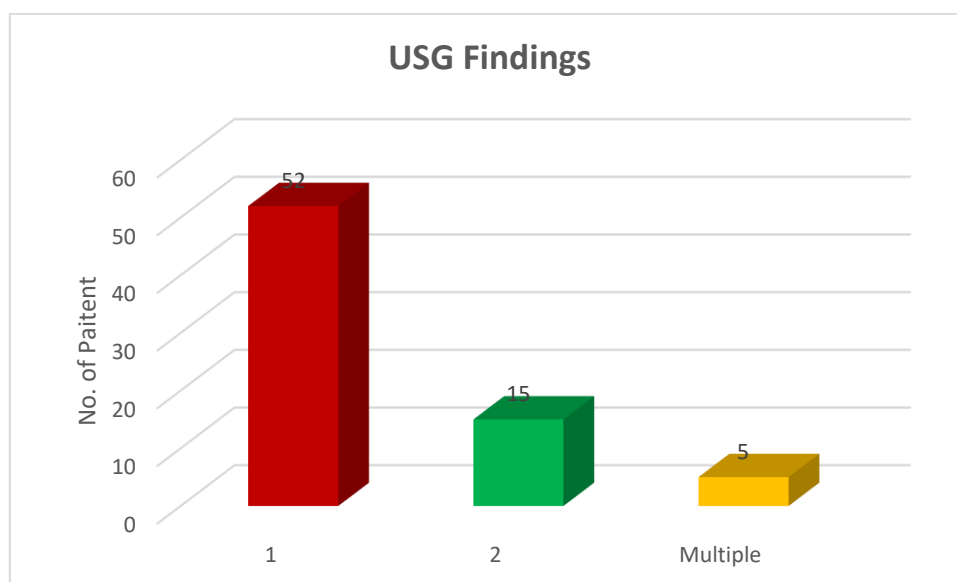


Figure: 3 Graphical representations of Based on USG findings.

V. CONCLUSION

In summary, this prospective observational study of 72 patients highlights that middle-aged males from lower socioeconomic strata are the primary clinical manifestations of liver abscess in our region, with fever and abdominal pain being the most common symptoms. The laboratory and imaging profiles showed the predicted pattern of infection, hepatic dysfunction, and abscess features (right lobe predominance, single big abscesses), and alcohol consumption was identified as a possible risk factor. *Escherichia coli* was the most common isolate among culture-positive patients, even though many abscesses were sterile on culture. The potential severity of the condition is highlighted by the frequency of consequences such as acute renal damage and pleural effusion. These results highlight how crucial it is to diagnose liver abscesses as soon as possible, use imaging sparingly, and employ a customized strategy that combines image-guided drainage with the right antibiotic medication to maximize results.

REFERENCES-

- [1]. Harrison TR. Principles of internal medicine. In Principles of internal medicine 1954 (pp. 1703-1703).
- [2]. Ghosh S, Sharma S, Gadpayle AK, Gupta HK, Mahajan RK, Sahoo R, Kumar N. Clinical, laboratory, and management profile in patients of liver abscess from northern India. *Journal of tropical medicine*. 2014;2014(1):142382.
- [3]. Czerwonko ME, Huespe P, Bertone S, Pellegrini P, Mazza O, Pekolj J, de Santibañes E, Hyon SH, de Santibañes M. Pyogenic liver abscess: current status and predictive factors for recurrence and mortality of first episodes. *Hpb*. 2016 Dec 1;18(12):1023-30.
- [4]. Yu SC, Ho SS, Lau WY, Yeung DT, Yuen EH, Lee PS, Metreweli C. Treatment of pyogenic liver abscess: prospective randomized comparison of catheter drainage and needle aspiration. *Hepatology*. 2004 Apr;39(4):932-8.
- [5]. Sharma N, Sharma A, Varma S, Lal A, Singh V. Amoebic liver abscess in the medical emergency of a North Indian hospital. *BMC research notes*. 2010 Dec;3:1-4.
- [6]. Mukhopadhyay M, Saha AK, Sarkar A, Mukherjee S. Amoebic liver abscess: presentation and complications. *Indian Journal of Surgery*. 2010 Feb;72:37-41.
- [7]. Chuah SK, Chang-Chien CS, Sheen IS, Lin HH, Chiou SS, Chiu CT, Kuo CH, Chen JJ, Chiu KW. The prognostic factors of severe amoebic liver abscess: a retrospective study of 125 cases. *The American journal of tropical medicine and hygiene*. 1992 Apr 1;46(4):398-402.
- [8]. Stanley SL. Amoebiasis. *The lancet*. 2003 Mar 22;361(9362):1025-34.
- [9]. Juimo AG, Gervez F, Angwafo FF. Extraintestinal amebiasis. *Radiology*. 1992 Jan;182(1):181-3.
- [10]. Kumar SK, Perween N, Omar BJ, Kothari A, Satsangi AT, Jha MK, Mohanty A. Pyogenic liver abscess: clinical features and microbiological profiles in tertiary care center. *Journal of Family Medicine and Primary Care*. 2020 Aug 1;9(8):4337-42.
- [11]. Jana A, Ray AK, Sarkar S, Bhattacharya U, Ray A. A Prospective Study on the Spectrum of Liver Abscess With Special Reference to Ruptured Abscess in a Tertiary Care Hospital. *Cureus*. 2024 Oct 3;16(10).
- [12]. Mangukiya DO, Darshan JR, Kanani VK, Gupta ST. A Prospective Series Case Study of Pyogenic Liver Abscess: Recent Trends in Etiology and Management. *Indian J Surg (September–October 2012)* 74(5):385–390.
- [13]. Rampal K, Prajapati D, Sharma M, Singh SP. Prospective study to analyze clinico-epidemiological profile of patients presenting with liver abscess at tertiary care centers. *Int J Human Health Sci*. 2021;5:473-7.
- [14]. Paik B, Sarkar SK, Chowdhury PK, Ahmed S. Clinical profile of amoebic liver abscess patients admitted in a tertiary care hospital. *Bangladesh Medical Journal Khulna*. 2015;48(1-2):20-3.
- [15]. Santos-Rosa OM, Lunardelli HS, Ribeiro-Junior MAF. Pyogenic Liver Abscess: Diagnostic and Therapeutic Management. *Arq Bras Cir Dig* 2016;29(3):194-197.
- [16]. Gyorffy EJ, Frey CF, Silva J Jr, McGahan J. Pyogenic liver abscess. Diagnostic and therapeutic strategies. *Ann Surg* 1987;206:699-705.
- [17]. Dhaked GK, Agarwal VK, Dhaked S, Ahmad T, Jhajharia A, Ashdhir P, Pokharna RK. Demographic, clinical, laboratory and management profile in patients of amoebic liver abscess from Northern India. *Tropical Gastroenterology*. 2022 Mar 2;43(1):16-21.
- [18]. Alkofer B, Dufay C, Parienti JJ, Lepennec V, Dargere S, Chiche L. Are Pyogenic Liver Abscesses Still a Surgical Concern? A Western Experience. *Hindawi Publishing Corporation. HPB Surgery*. 2012; 2012:1-7.
- [19]. Alam F, Salam MA, Hassan P, Mahmood I, Kabir M, Haque R. Amebic liver abscess in northern region of Bangladesh: sociodemographic determinants and clinical outcomes. *BMC research notes*. 2014 Dec;7:1-5.
- [20]. Abbas MT, Khan FY, Muhsin SA, Al-Dehwe B, Abukamar M, Elzouki AN. Epidemiology, clinical features and outcome of liver abscess: a single reference center experience in Qatar. *Oman Medical Journal*. 2014 Jul;29(4):260.
- [21]. Jha AK, Das A, Chowdhury F, Biswas MR, Prasad SK, Chattopadhyay S. Clinicopathological study and management of liver abscess in a tertiary care center. *Journal of natural science, biology, and medicine*. 2015 Jan;6(1):71.
- [22]. Liu Y, Liu J, Fu L, Jiang C, Peng S. Demographics and clinical outcomes of culture-positive versus culture-negative Pyogenic Liver Abscess in an Asian Population. *Infection and Drug Resistance*. 2023 Dec 31:903-11.
- [23]. Arya D, Singh N, Jatav OP, Trikha S, Shah N, Singhal P. To Study the Clinico-Pathological Profile and Radiological Characteristics in Patients with Liver Abscess. *Chest*;40:33-.
- [24]. Hathila TN, Patel CJ, Rupani MP. A cross-sectional study of clinical features and management of liver abscesses in a tertiary care hospital, Ahmedabad, Gujarat. *National Journal of Medical Research*. 2014;4(3):250-.