

CLINICOPATHOLOGICAL STUDY OF LIVER ABSCESS IN EASTERN INDIAN POPULATIONHimansu Roy¹, Ashish Ranjan²¹Associate Professor, Department of General Surgery, Medical College and Hospital, Kolkata, West Bengal, India.²Senior Resident, Department of General Surgery, Islampur SS/SD Hospital, Uttar Dinajpur, West Bengal, India.**ABSTRACT****BACKGROUND**

A descriptive study of Liver abscess is defined as collection of purulent material in liver parenchyma. It could be amoebic, pyogenic, infected hydatid, traumatic or ascaridal. It is a burning problem in tropical nations with often lethal consequences and diagnostic/therapeutic challenges.

This study aims to find out the demographic distribution, different modes of presentations, risk factors association, alteration of various laboratory and radiological investigations in diagnosis of liver abscess and responses to standard institutional management strategies.

MATERIALS AND METHODS

Medical records were taken by preformed case, Proforma. Descriptive statistics were used and analysed by SPSS software.

RESULTS

3/4th of cases belonged to 4th to 6th decade. Males were more commonly affected than females. Alcoholism was the most consistent risk factor followed by diabetes mellitus. Most common presenting symptom and sign were abdominal pain and abdominal tenderness in right hypochondriac region respectively. Most common aetiology of liver abscess was amoebic followed by mixed amoebic and pyogenic infections. The most common organisms obtained from pus C/S from liver abscess were Enterococcus spp. and Escherichia coli. Abnormal chest x-ray findings were recorded in > 50% of cases. USG showed majority of cases had large, solitary liver abscess in right lobe of liver. Most common complication observed was intraabdominal rupture of liver abscess, for which open surgical drainage was performed.

CONCLUSION

Recurrence was observed more following conservative management than other modalities.

KEY WORDS

Liver Abscess, Pyogenic Abscess, Amoebic Abscess, Percutaneous Drainage, Recurrence.

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BACKGROUND

- A descriptive study of Liver is the organ most subjected to the development of abscess. Liver abscess accounts for 48% of all visceral abscesses.
- India has 2nd highest incidence of liver abscess in the world.⁽¹⁾
- Liver abscess associated with mortality upto 20%.⁽²⁾
- Three major forms of liver abscess are:
 - **Pyogenic**- 3/4th of liver abscess in developed countries.
 - **Amoebic**- 2/3rd of liver abscess in developing countries.
 - **Fungal**- Less common.
- In the recent past, the incidence of liver abscess has increased.
- There has been a changing trend in demographic presentation, clinical profile, microbiological aetiology, management strategies and outcomes of patients diagnosed with liver abscess.

- The concept of the present study is to find out the demographic distribution, different modes of presentations, risk factors association, alteration of various laboratory and radiological investigations in diagnosis of liver abscess and responses to standard institutional management strategies.

Objectives/ Primary Objective**To Study Liver Abscess patients with respect to-**

1. Demographic profile of patients.
2. Spectrum of clinical presentations.
3. Risk factors association.
4. Alteration in various blood and radiological investigations.
5. Bacteriological and serological characteristics.

Secondary Objective

To evaluate the response to standard institutional management strategies.

MATERIALS AND METHODS

- Place of study: Medical college and Hospital, Kolkata.
- Duration of study: January 2016 to June 2017.
- Design of study: A descriptive study.
- Study Population: Indoor patients of Liver Abscess admitted in Department of General Surgery, Medical College and Hospital, Kolkata.

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Corresponding Author:

Dr. Ashish Ranjan,

Department of Horticulture (Veg. and Flori.)

Bihar Agricultural University,

Sabour, Bhagalpur-813210, India.

E-mail: drashishranjan2209@gmail.com

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Statistical Analysis

The qualitative data was expressed by Fisher’s test, Independent t-test. For statistical analysis, SPSS software version 25.0 was used.

Inclusion Criteria

- All cases of liver abscess diagnosed clinically and/or ultrasonographically.
- All cases of bacterial and parasitic liver abscess.

Exclusion Criteria

- Traumatic liver abscess.
- Liver abscess associated with liver malignancy.

Sample Size

The descriptive study was carried out in the Medical College and Hospital, Kolkata where a total of 50 patients’ based on previous year records were taken. Sample size was taken for convenience.

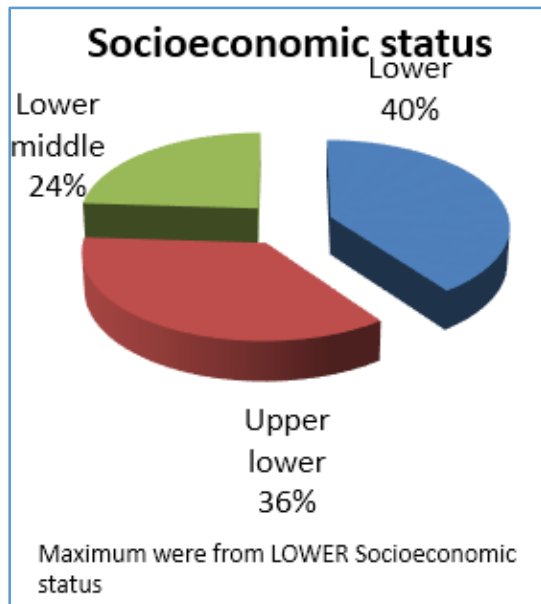
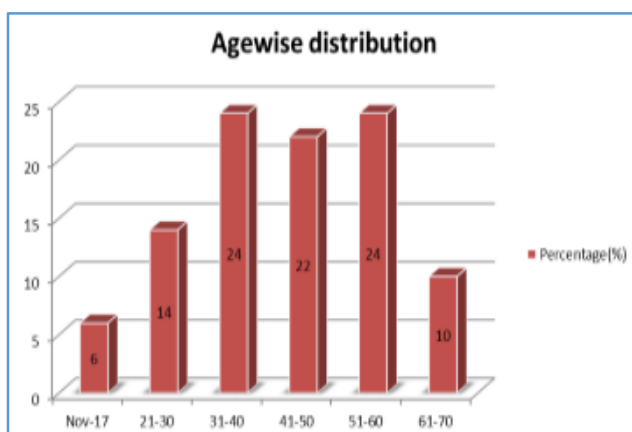
Data Analysis

- By following standard statistical protocols, all data will be collected and analysed to evaluate the clinicopathological aspects and response to standard institutional management strategies.
- Continuous data was summarised as Mean ± SD (standard deviation of the mean), while categorical data was represented in numbers and percentages. Analyses were performed on SPSS software (Windows version 17.0).

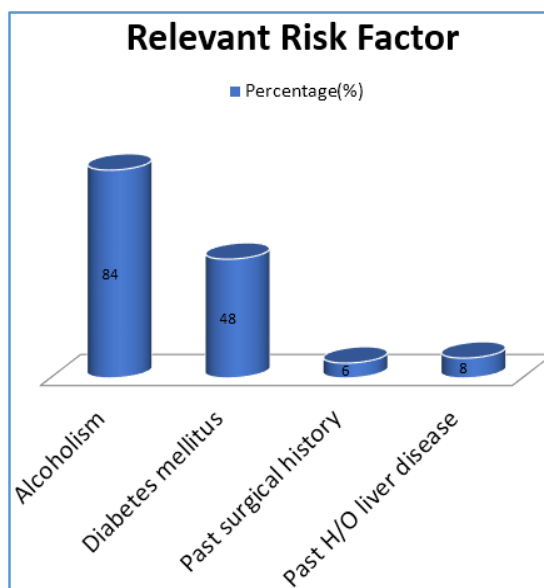
RESULTS

Demographic Features

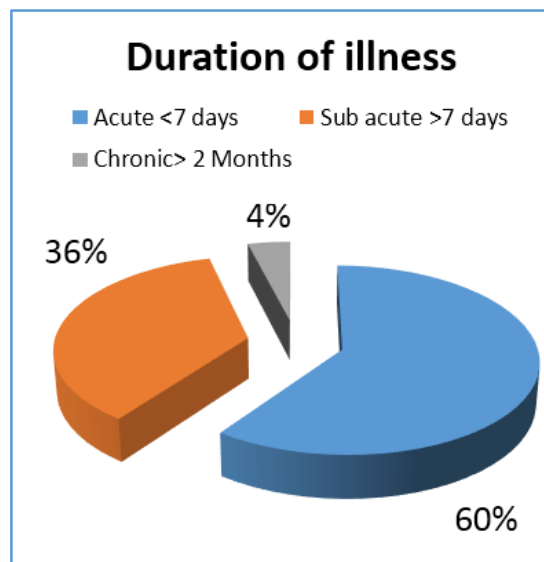
There were 45 (90%) males and 5 (10%) females.



Clinical History



Most Common: Alcoholism (84%)



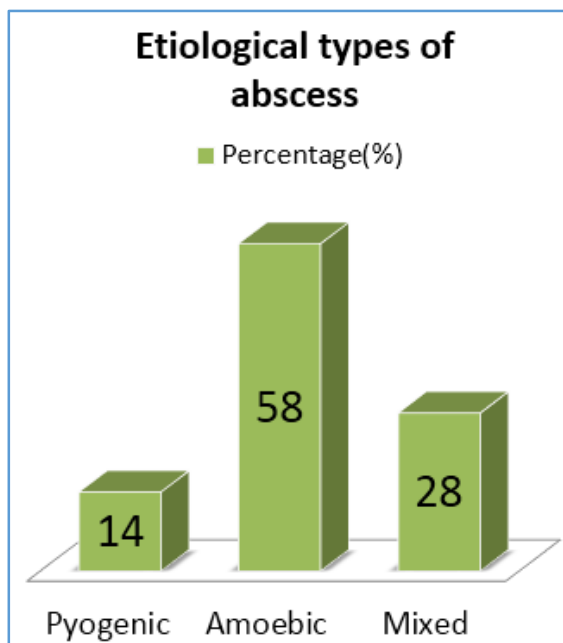
Majority presented Acutely within 7 Days

Symptoms and Signs	Number (N)	Percentage (%)
Pain in abdomen	50	100
Fever (> 38.5°C)	47	94
Abdominal tenderness	50	100
Hepatomegaly	25	50
Icterus	24	48
Cough	15	30
Pallor	12	24
Loose stools	8	16
Altered sensorium	2	4

Clinical Manifestations

Inv.	Abnormality	N	%
Routine	Leucocytosis (> 11,000 cells/cumm)	34	68
	Anaemia (< 10 g/dL)	11	22
	Hyperglycaemia (> 200 mg/dL)	28	56
RFT	Raised urea (> 45 mg/dL)	12	24
	Raised creatinine (> 1.2 mg/dL)	9	18
LFT	Hyperbilirubinaemia (> 2.4 mg/dL)	29	58
	Hypoalbuminaemia (< 3.5 mg/dL)	42	84
	Elevated Sr. ALP (> 150 IU/L)	42	84
	Elevated SGOT (> 40 IU/L)	24	48
	Elevated SGPT (> 40 IU/L)	37	74
	Elevated prothrombin time (> 14 secs)	24	48

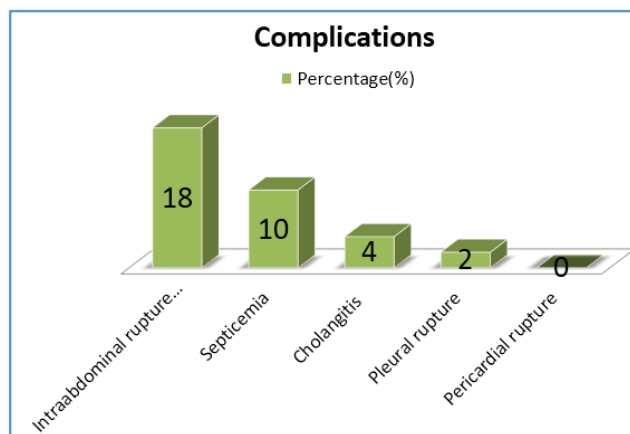
Biochemical Analysis



Radiological Analysis

Chest X-ray Findings	N	%
Normal	19	38
Abnormal	31	62
• Elevated right dome of diaphragm	23	46
• Pleural effusion	12	24
• Right basal pneumonitis	10	20
• Air fluid level	2	4

USG Findings	N	%
Lobe involved		
Right	37	74
Left	6	12
Both	7	14
Number of abscesses		
Solitary	37	74
Multiple	13	26
Size of abscesses		
Small (< 5 cms)	16	32
Large (> 5 cms)	34	68



Complications of Liver Abscess

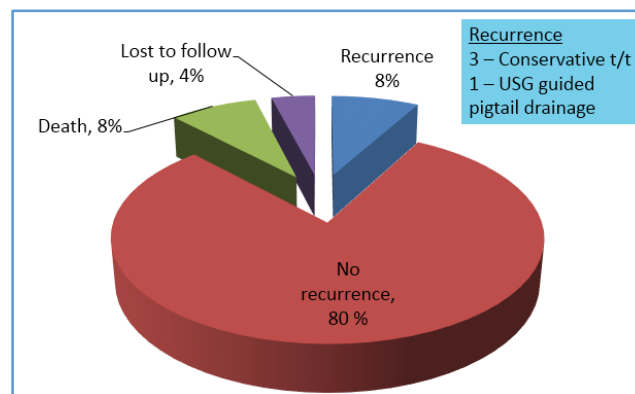
Type of Abscess	Treatment Modality	N	%
Small (< 5 cms)	Medical (antibiotics)	12	24
Large (> 5 cms)	USG-guided pigtail drainage + antibiotics	29	58
Intraabdominal ruptured abscess	Open surgical drainage	9	18
Total		50	100

Treatment

Microbiological Analysis

Pus Culture	N	%
Enterococcus spp.	7	18
E. coli	7	18
K. pneumoniae	4	11
S. aureus	3	8
No growth	17	45
Total	38	100

Amoebic Serology (IgG)	N	%
Positive	43	86
Negative	7	14
Total	50	100



Follow-Up and Recurrence

I. Demographic Features

Studies	Male	Female
Present Study	90%	10%
Santos Rosa et al ⁽³⁾	70%	30%
Venu Gopal et al ⁽⁴⁾	65.1%	34.9%
Gender		

Studies	Most Common Age Group Affected (yrs.)	Range of Ages (yrs.)
Venu Gopal et al	20-50	20-75
Chaudhary et al ⁽⁵⁾	31-60	19-69
Jha et al ⁽⁶⁾	21-50	2.5-70
Present Study	31-60	15-69

Age					
Studies	Lower	Upper Lower	Lower Middle	Upper Middle	Upper
Present Study	20 (40%)	18 (36%)	12 (24%)	-	-
Socioeconomic Status					
Risk Factor	Present Study	Mathur et al ⁽⁷⁾	Chan et al ⁽⁸⁾		
Alcoholism	84%	70%	-		
Diabetes Mellitus	48%	-	59.8%		
Relevant Risk Factor					

Studies	Acute	Subacute	Chronic
Present study	30 (60%)	18 (36%)	2 (4%)
Kapadia et al ⁽⁹⁾		Mostly	
Onset of Disease and Hospital Presentation			

Clinical Features

Symptom	Mangukiya et al ⁽¹⁰⁾	Santos Rosa et al ⁽³⁾	Chaudhary et al ⁽⁵⁾	Present Study
Pain in abdomen	97%	90%	98%	100%
Fever	74%	40%	94%	90%
Cough	14%	-	35%	30%
Icterus	26.5%	70%	25%	48%
Loose stools	6.2%	10%	18%	16%
Altered sensorium	4.5%	0%	0%	4%
Symptoms				

Signs	Mangukiya et al ⁽¹¹⁾	Chaudhary et al ⁽⁶⁾	Present Study
Jaundice	-	24%	24%
Pallor	-	23%	24%
Fever (> 38.5°C)	74%	94%	94%
Abdominal tenderness	95%	100%	100%
Hepatomegaly	26%	50%	50%
Respiratory findings	14%	61%	62%
Shock	4.5%	0%	4%
Signs			

Investigation	Mangukiya et al ⁽⁹⁾	Jha et al ⁽⁵⁾	Santos Rosa et al ⁽²⁾	Present Study
Leucocytosis (> 11,000/cumm)	78%	75%	89%	68%
Hb (< 11 g/dL)	41.5%	52%	0%	22%
Hyperbilirubinaemi	12.5%	18%	75%	58%

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Elevated PT	34.5%	43%	75%	48%
Hypoalbuminaemia	-	40%	80%	84%
Raised ALP	-	63%	100%	84%
Elevated SGOT	-	48%	88%	48%
Elevated SGPT	-	50%	88%	74%
Biochemical Analysis				

Organisms	Czerwonko et al ⁽¹¹⁾	Peris et al ⁽¹²⁾	Kong et al ⁽¹³⁾	Present Study
E. coli	26.7%	16.3%	9.7%	18%
Enterococcus spp.	16.9%	5.1%	4.1%	18%
S. aureus	12.7%	-	2.8%	11%
K. pneumoniae	16.2%	11.2%	76%	8%
Microbiological Analysis				

Studies	Specific Amoebic IgG Antibodies
Present Study	86%
Jha et al ⁽⁶⁾	88%
Amoebic Serology	

Studies	Anti-HIV Antibodies	HBsAG Antibodies	Anti-HCV Antibodies
Present Study	2%	6%	4%
Park et al ⁽¹⁴⁾	32%	-	-
Viral Markers			

Radiological Analysis

Studies	Normal	Abnormal
Present Study	38%	62%
Jha et al ⁽⁶⁾	50%	50%
Lyche et al ⁽¹⁵⁾	47%	53%
Chest X-Ray		

USG Finding	Jha et al ⁽⁶⁾	Mangukiya et al ⁽¹⁰⁾	Czerwonko et al ⁽¹¹⁾	Present Study
Lobe Involved				
Right	80%	83%	63.4%	74%
Left	10%	4.5%	14.8%	12%
Both	10%	12.5%	21.8%	14%
No. of abscesses				
Solitary	80%	56%	45.8%	74%
Multiple	20%	44%	54.2%	26%
Size of abscesses				
Small (< 5 cms)	13%	-	42.9%	32%
Large (> 5 cms)	87%	-	57.1%	68%
USG Abdomen				

Studies	Ruptured Liver Abscess	Septicaemia	Pleural Effusion
Present Study	18%	10%	2%
Mangukiya et al ⁽¹⁰⁾	5%	-	-
Chaudhary V et al ⁽⁵⁾	2%	-	-
Peris et al ⁽¹²⁾	-	14.3%	14.3%
Complications			

Studies	Medical (Antibiotics)	USG-Guided Pigtail Drainage + Antibiotics	Open Surgical Drainage
Present Study	24%	58%	18%
Peris et al ⁽¹¹⁾	31.6%	61.2%	7.1%
Treatment			

Studies	Mortality Rate
Mangukiya et al ⁽¹⁰⁾	1.5%
Peris et al ⁽¹²⁾	8.2%
Santos Rosa et al ⁽³⁾	20%
Present study	8%
Outcome of Liver Abscess	

Studies	Recurrence
Present Study	8%
Chaudhary et al ⁽⁵⁾	8%
Follow-Up and Recurrence	

DISCUSSION

- From our study it was concluded that about 3/4th of cases belonged to 4th to 6th decade. Males were more commonly affected than females. Alcoholism was the most consistent risk factor followed by diabetes mellitus. Most common presenting symptom and sign was abdominal pain and abdominal tenderness in right hypochondriac region respectively. Most common aetiology of liver abscess was amoebic followed by mixed amoebic and pyogenic infections. The most common organisms obtained from pus C/S from liver abscess were Enterococcus spp. and Escherichia coli. Abnormal chest x-ray findings were recorded in > 50% of cases. USG showed majority of cases had large, solitary liver abscess in right lobe of liver. Most common complication observed was intraabdominal rupture of liver abscess for which open surgical drainage was performed. By following standard statistical protocols, all data will be collected and analysed to evaluate the clinicopathological aspects and response to standard institutional management strategies.
- Continuous data was summarised as Mean \pm SD (standard deviation of the mean), while categorical data was represented in numbers and percentages. Analyses were performed on SPSS software (windows version 17.0).

CONCLUSION

- Males are more commonly affected than females. About 3/4th of cases were found in 4th to 6th decade of life.
- Alcoholism was the most consistent risk factor followed by diabetes mellitus.
- Majority of patients presented within 7 days of onset of illness.
- Most common presenting symptom and sign was abdominal pain and abdominal tenderness in right hypochondriac region respectively.
- Most common aetiology of liver abscess was amoebic followed by mixed amoebic and pyogenic infections.

- The most common organisms obtained from pus C/S from liver abscess were Enterococcus spp. and Escherichia coli.
- Abnormal chest x-ray findings were recorded in > 50% of cases.
- USG showed majority of cases had large, solitary liver abscess in right lobe of liver.
- Most common complication observed was intraabdominal rupture of liver abscess, for which open surgical drainage was performed.
- Recurrence was observed more following conservative management than other modalities.

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