International Journal of Basic & Clinical Pharmacology
Walwekar A et al. Int J Basic Clin Pharmacol. 2023 Mar;12(2):202-205
http://www.ijbcp.com
pISSN 2319-2003 | eISSN 2279-0780

DOI: https://dx.doi.org/10.18203/2319-2003.ijbcp20230387

Original Research Article

A prospective observational study of demographic profile in patients of amoebic and pyogenic liver abscesses in a tertiary care hospital

Arun Walwekar[1], Mrutyunjay Mirje[2], Namrata Balaraddiyavar[2], Rekha Walwekar [3]*

[1]Department of General Surgery, Karnataka Institute of Medical Sciences, Hubli, Karnataka, India
[2]Department of Pharmacology, Gadag Institute of Medical Sciences, Gadag, Karnataka, India
[3]Department of Pharmacology, Kaher's Jagadguru Gangadhar Mahaswamigalu Moorusavirmath Medical College, Hubballi, Karnataka, India

Received: 12 December 2022
Revised: 11 January 2023
Accepted: 12 January 2023

***Correspondence:**
Dr. Rekha Walwekar,
Email: rekhaarun13@gmail.com

ABSTRACT

Background: Liver abscesses, both amoebic and pyogenic, continue to be an important cause of morbidity and mortality in tropical countries. Pyogenic liver abscess is a serious, life-threatening condition with a high mortality rate that represents a diagnostic and therapeutic challenge. In India, due to poor sanitary condition and a lower socioeconomic status, amoebiasis is endemic and amoebic liver abscess accounts for 3-9% of all cases of amoebiasis. Aim and objectives of current study was to study demographic profile in patients of amoebic and pyogenic liver abscesses.
Methods: A detailed history was taken from each of these patients and all of them were subjected to a through clinical examination.
Results: The highest incidence occurred in the age group 31-50 years; males were more commonly affected than females. Fever and pain abdomen were the most consistently occurring symptoms. All the patients with liver abscess had abdominal tenderness. 17 patients (74%) with liver abscess were alcoholics. 8 patients (80%) with amoebic liver abscess were alcoholic as compared to 9 patients (69%) in pyogenic liver abscess.
Conclusions: Pyogenic organisms were most common cause of liver abscess.

Keywords: Liver abscess, Amoebic liver abscesses, Pyogenic liver abscesses, Age and mode of presentation

INTRODUCTION

Liver abscesses, both amoebic and pyogenic, continue to be an important cause of morbidity and mortality in tropical countries.[1] Pyogenic liver abscess (PLA) is a serious, life-threatening condition with a high mortality rate that represents a diagnostic and therapeutic challenge.[2] In India, due to poor sanitary condition and a lower socioeconomic status, amoebiasis is endemic and amoebic liver abscess accounts for 3-9% of all cases of amoebiasis.[3] "Significant changes have occurred in the etiology, diagnosis, bacteriology, treatment, and outcome of patients with pyogenic hepatic abscesses over the past 4 decades. However, mortality remains high, and proper management continues to be a challenge".[4]

Only few studies have conducted to correlate clinical features of amoebic and pyogenic liver abscesses. Therefore, the study is conducted to correlate clinical features of amoebic and pyogenic liver abscess with age incidence and mode of presentation hoping which will help to differentiate both.

METHODS

Study design, duration and location

Current study was a prospective descriptive study conducted from November 2009 to October 2010 at Department of Surgery, Karnataka Institute of Medical Sciences.

Inclusion criteria

Total number of hospital admissions during this period was 41,079 and surgical ward admission was 4,955. Patients were diagnosed and treated as a cases of liver abscess were included

Exclusion criteria

Liver abscess associated with malignancy and immunodeficiency. Hence incidences of liver abscess in hospital and in surgical ward were 0.056% and 0.46% respectively. Diagnostic criteria for amoebic liver abscess.

As per WHO, standard treatment guidelines right upper quadrant pain, mild to moderate grade fever, poor general health and hepatomegaly which is often tender. This situation should arise strong diagnostic suspicious of amoebic liver abscess. During the last decade a marked decrease in mortality has been noted in association with the introduction of new imaging techniques, such as computed tomography and ultrasonography.[5]

Statistical analysis

The data were entered after defining the variables in SPSS (version16) from case record form. Descriptive statistics were used to summarize baseline data. Continuous data such as age, incidence of amoebic and pyogenic liver abscess was analyzed using student t-test and categorical data such as sex distribution, types of amoebic and pyogenic liver abscess, symptoms and signs were analyzed using Chi square test.

RESULTS

Liver abscess in this study was more common in males (95.6%) than females (4.4%). The commonest age group for amoebic liver abscess was 31-40 years (50%) and for pyogenic liver abscess was 41-50 years (46%). The commonest age group for liver abscess was 31-40 years (35%) and 41-50 years (35%). The commonest symptom of liver abscess was fever (87%) followed by pain abdomen (83%). Vomiting was present in 22%, cough occurring in 13% and diarrhoea/dysentery in 4%. Pain abdomen was the commonest presentation 9 cases (90%) in amoebic liver abscess whereas fever was commonly seen all cases (100%) in pyogenic liver abscess. Most common presentation of liver abscess was pain abdomen and fever (39%).

Table 1: Age and sex incidence of liver abscess.

Age group (years)	Males		Female		Total	
	N	%	N	%	N	%
13-30	5	22	0	0	5	22
31-40	8	35	0	0	8	35
41-50	7	30	1	4	8	35
51-60	1	4	0	0	1	4
61-70	1	4	0	0	1	4

Table 2: Incidence of Amoebic and pyogenic liver abscess.

Age group	Amoebic liver abscess N (%)	Pyogenic liver abscess N (%)
0-30	3 (30)	2 (15)
31-40	5 (50)	3 (23)
41-50	2 (20)	6 (46)
51-60	0	1 (8)
61-70	0	2 (15)

All the patients with liver abscess had abdominal tenderness. Next common sign noted was hepatomegaly in 16 patients (70%), fever which was present in 10 patients (43%), 5 patients had icterus (22%), pleural effusion was seen in 12 patients (52%).

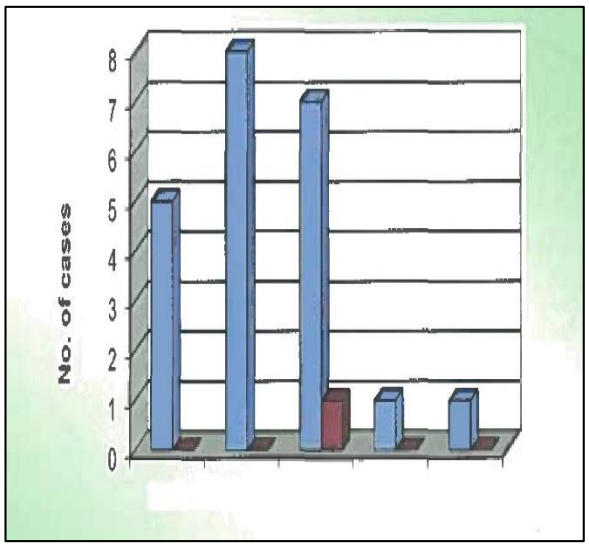

Figure 1: Incidence of amoebic and pyogenic liver abscess.

Most common sign noted in amoebic and pyogenic liver abscess was abdominal tenderness (100%). Most common sign in patients with liver abscess was abdominal tenderness and hepatomegaly (39%). Most common sign in patients with liver abscess was abdominal tenderness and hepatomegaly (39%). 17 patients (74%) with liver abscess were alcoholics. 8 patients (80%) with amoebic liver abscess were alcoholic as compared to 9 patients (69%) in pyogenic liver abscess.

Table 3: Symptoms.

Symptoms	N (%)	Type	
		Amoebic liver abscess N (%)	Pyogenic liver abscess N (%)
Pain abdomen	19 (83)	9 (90)	10 (77)
Fever	20 (87)	7 (70)	13 (100)
Diarrhea	1 (4)	0	1 (8)
Vomiting	5 (22)	1 (10)	4 (31)
cough	3 (13)	1 (10)	2 (15)

Table 4: Incidence of symptom complex.

Symptoms	N (%)
Pain abdomen only	2 (9)
Fever only	3 (13)
Cough only	1 (4.5)
Pain abdomen & fever	9 (39)
Pain abdomen, fever & cough	2 (9)
Pain abdomen, fever & Vomiting	5 (21)
Pain abdomen, fever & dysentery	1 (45)

Table 5: Distribution of signs.

Signs	N	Type	
		Amoebic liver abscess N (%)	Pyogenic liver abscess N (%)
Fever	10 (43)	3 (30)	7 (54)
Icterus	05 (22)	3 (30)	2 (15)
Abdomen tenderness	23 (100)	10 (100)	13 (100)
Hepatomegaly	16 (70)	8 (80)	8 (62)
Pleural effusion	12 (52)	4 (40)	8 (62)

Table 6: Distribution of sign complexity.

Signs	N (%)
Abdominal tenderness only	03 (13)
Abdominal tenderness and hepatomegaly	09 (40)
Abdomen tenderness & fever	03 (13)
Abdominal tenderness, hepatomegaly & fever	04 (17)
Abdominal tenderness, hepatomegaly & icterus	02 (8.5)
Abdominal tenderness, hepatomegaly, fever & icterus	02 (8.5)

Table 7: Alcoholism

Alcoholics	N	%	Type of abscess			
			A	%	P	%
Present	17	74	8	80	9	69
Absent	6	26	2	20	4	13

DISCUSSION

The age of the patients varied from 13-65. The mean age was 39 years. The lowest incidence was noted in the age group 61-70 years (4%). The highest incidence was noted in the age group 31-40 years (35%) and 41-50 years (35%). Incidence in each group 51-60 years (4%) and 13-30 years (22%). In this study, liver abscesses seen to affect most in the age group 31-50 years, being rare above 50 years. The commonest age group for amoebic liver abscess was 31-40 years (50%) and for pyogenic liver abscess was 41-50years (46%). According to study, mean age of amoebic and pyogenic liver abscess was 45.9 and 50 years. Overall mean age for liver abscess was 48.7 years".[6] In present study, M:F ratio in amoebic and pyogenic liver abscess was 10:0 and 12:1 respectively. According article, M:F ratio in amoebic and pyogenic liver abscess was 3.8:1 and 1.4:1 respectively.[7] The commonest symptom of liver abscess in this study was fever (87%) and pain abdomen (83%). Vomiting was present in 22%, cough occurring in 13% and diarrheal dysentery in 4%. The commonest symptom of liver abscess at presentation in study conducted by Yoo et al pain abdomen (85%).[8] Pain abdomen (90%) was the commonest presentation in amoebic liver abscess in present study. The commonest

symptom of amoebic liver abscess was pain abdomen (90%).[9] The commonest symptom of pyogenic liver abscess at presentation in this study was fever (100%). The commonest symptom of pyogenic liver abscess was pain abdomen (84%) followed by fever (75%).[10] Most common sign noted in liver abscess was fever (93%) followed by abdominal tenderness (88%).[11] Most common sign in amoebic and pyogenic liver abscess was fever (92% & 94%).[12] All the patients with liver abscess had abdominal tenderness. Next common sign noted was hepatomegaly in 16 patients (70%), fever which was present in 10 patients (43%), 5 patients had icterus (22%), pleural effusion was seen in 12 patients (52%).[13] Most common sign noted in amoebic and pyogenic liver abscess was abdominal tenderness (100%). Most common sign noted in liver abscess was fever (93%) followed by abdominal tenderness (88%).[14] Most common sign in amoebic and pyogenic liver abscess was fever (92% & 94%).[15]Alcoholism in cases of liver abscess, in this study, 8 patients (80%) with amoebic liver abscess were alcoholic. In study done by Ravinder et al 70.8% with amoebic liver abscess were alcoholics.[16]

Limitations

Limitation of current study was that it was a single institutional study.

CONCLUSION

Liver abscesses occurred most commonly between 30-50years. Liver abscess in this study was more common in males than females. The commonest symptom of amoebic liver abscess was pain abdomen. The commonest symptom of pyogenic liver abscess at presentation was fever. Most common sign noted in liver abscess was fever (93%) followed by abdominal tenderness. All the patients with liver abscess had abdominal tenderness.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Chaturbhuj LR, Sanjay G, Sanjay J, Yogesh C, Madhu G, Sudha S. percutaneous treatment of liver abscesss: needle aspiration versus catheter drainage. AJR. 1998; 170:1035-9.
2. Xiaojuan Z, Shaohui W, Ravi J, Zhining F, Guozhong J. A 10 year retrospective analysis analysis clinical profiles, Laboratory Characteristics and management of pyogenic liver abscesses in a Chineses hospital. Gut Liver. 2011;5(2);221-7.
3. Navneet S, Aman S, Subhash V, Anupam L, Virendra S. Amoebic liver abscess in the medical emergency of a north Indian hospital. BMC Res Notes. 2010;321:1-4.
4. Chih-Jen Huang, Henry A, Lipsett P, Osterman FA. Pyogenic Hepatic abscess changing Trends Over 42 Years. Ann Surg. 1996;223(5):600-9.
5. Sharma MP, Rai RR, Acharya SK, Samant JC, Tandon BN. Needle aspiration of amoebic liver abscess. BMJ. 1989;299:1308-9.
6. Pascal I. A historical overview of amebiasis. Bull Acad Med. 1981;57(3):175-87.
7. Sadler TW. Langman's Medical Embryology. 9 ed. USA: Lippincott Williams and Wilkins; 2004.
8. Hyo MY, Won HK, Sug KS, Woo HC, Jin KK, In SP. Changing patterns of Liver Abscess During the Past 20 years. Yonsei Med J. 1993;34(4):340-51.
9. Viroj W. A note on clinical presentations of amebic liver abscess: an overview from 62 Thai patients; BMC Family Pract. 2002;7:1-4.
10. Tony CY P, Thomas F, Jaswinder S, Thomas JH, Ross CS. Pyogenic liver abscess: An audit of 10 years' experience. Wor1d J Gastroenteiol. 2011;17(12):I622-30.
11. Toshifumi G, Masumi K, Osamu M, Takeshi K, Yasuhiro K, Junichiro S, et al. Dynamic CT of hepatic abscesses: significance of transient segmental enhancement. AJR. 2001;176: 675-9.
12. Howard AR, Michael B1, Michael CH. Diagnostic imaging of hepatic abscesses: a retrospective analysis. AJR. 1980;135:735-40.
13. Liao WI, Tsai SH, Yu CY, Huang GS, Lin YY, Hsu CW, et al. Pyogenic liver abscess treated by percutaneous catheter drainage: MDCT measurement for treatment outcome. Eur J Radiol. 2012;81(4):609-15.
14. Cemalettin A, Turgut P, Fatih S, Bora B, Cuneyt K. Laparoscopic Drainage of Pyogenic Liver Abscess. JSLS 2010;14:4l8-20.
15. Cuneyt K, Sinan Yol, Gurel N. Drainage of liver abscess via laparoscopic trocar with local anesthesia. Surg Laparos Endos Percut Tech. 2003;13(2);121-4.
16. Ravinder PS M, Gopal K S, Veena M. Alcohol consumption, hepatic iron load and the risk of amoebic liver abscess: a case-control study. Int Med. 2003;42: 644-9.

Cite this article as: Walwekar A, Mirje M, Balaraddiyavar N, Walwekar R. A prospective observational study of demographic profile in patients of amoebic and pyogenic liver abscesses in a tertiary care hospital. Int J Basic Clin Pharmacol 2023;12:202-5.