

PATIENTS DEMOGRAPHICS AND PREDISPOSING FACTORS FOR AMOEBIC LIVER ABSCESSAravind Ramachandra Mirajkar¹, Kalavathi G. P²¹Professor, Department of General Medicine, Karwar Institute of Medical Sciences, Karwar, Karnataka.²Associate Professor, Department of General Medicine, Karwar Institute of Medical Sciences, Karwar, Karnataka.

ABSTRACT

BACKGROUND

Amoebiasis is a common disease in the tropics presenting with dysentery, due to the bad hygiene, contamination of foods and water by *Entamoeba histolytica*. Very rarely amoebic dysentery may complicate and form an abscess in the liver leading to amoebic liver abscess.

Entamoeba histolytica belongs to class Rhizopodia and order Amoebidae and genus of the *Entamoeba*.¹ Prevalence of amoebic infection varies from 3.8 to 50%. The highest prevalence of infection is seen in the age group of 20-50 years with a significant male predominance, male to female ratio of 7:1-20:1.²

The aim of this study is to evaluate the patients' demographic characteristics and predisposing factors for amoebic liver abscess in order to draw up a disease control strategy locally in Karwar.

MATERIALS AND METHODS

Thirty-five patients admitted with confirmed diagnosis of amoebic liver abscess in general medicine department of Karwar Institute of Medical Sciences were selected for this study. This study was conducted over a period of one year in 2016-17.

Inclusion criteria were, patients having right hypochondriac pain and palpable tender liver with intercostal tenderness &/or patients having fever, chills, rigor with palpable tender liver &/or patients having cough, breathlessness, right sided chest pain and palpable tender liver &/or patients having loose motion, pain abdomen and palpable tender liver. Laboratory investigations were done for confirmation of amoebic liver abscess and predisposing factors.

RESULTS

The youngest patient in the present study was 23 years old and the oldest patient was aged 65 years. Maximum incidence in age group of 31-50 years. Male (88.6%) preponderance of this disease is seen in this study. In the present study, 88.6% of the patients are from low-socio economic status. Eighty percent of the patients of amoebic liver abscess were alcoholic, two were HIV positive and one was HbsAg positive. None of patients was diabetic in this study.

CONCLUSION

In this study, maximum incidence of amoebic liver abscess was observed in age group of 31-50 years and male preponderance was observed. The disease was common in the low socioeconomic status people and alcoholism was major risk factor.

KEYWORDS

Amoebic Liver Abscess, Predisposing Factors, Patient Demographics, Alcoholism, Low Socioeconomic Status.

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BACKGROUND

Amoebiasis is a common disease in the tropics presenting with dysentery, due to the bad hygiene, contamination of foods and water by *Entamoeba histolytica*. Very rarely amoebic dysentery may complicate and form an abscess in the liver leading to amoebic liver abscess.

Entamoeba histolytica belongs to class Rhizopoda and order Amoebidae and genus of the *Entamoeba*.¹ *Entamoeba histolytica* passes its life cycle in one host, the man. Man is the commonest source of infection. Incubation period in man is very variable generally 4-5 days.

Prevalence of amoebic infection is variable from 3.8 to 50%. The highest prevalence of infection is seen in the age group of 20-50 years. A Significant male predominance, male to female ratio of 7:1-20:1.²

Amoebic infection has a worldwide distribution being found in arctic temperature and tropical countries. It is more prevalent in tropical areas, where invasive amoebic infection is common.³

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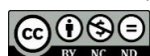
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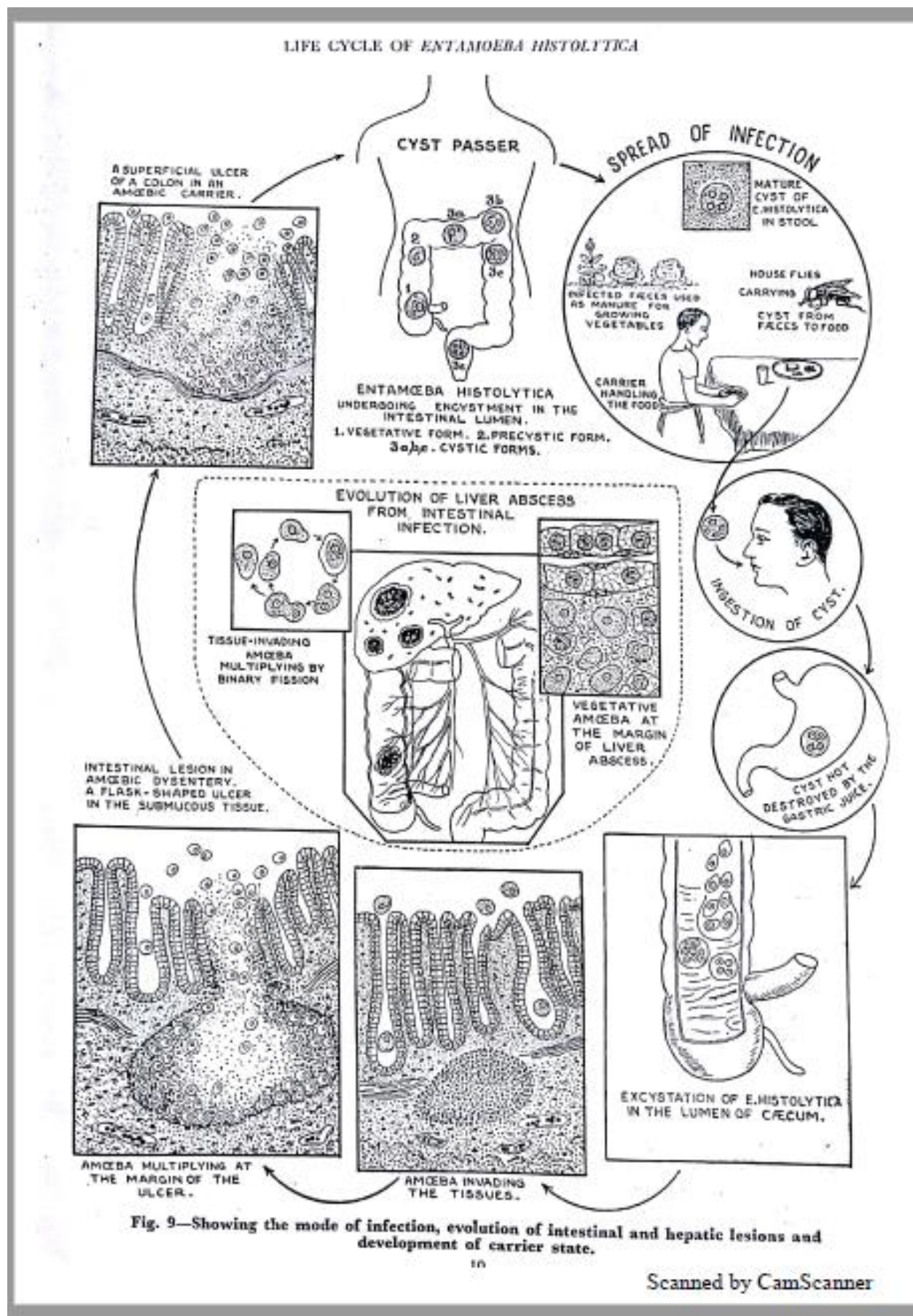


Figure 1. Life Cycle of Entamoeba Histolytica

Hepatic Amoebiasis is the diffuse or localized infection of the liver tissue by the trophozoite form of amoebae from the intestine. Amoebiasis is common in under developed countries, more so amongst population with low social-economic status, living in congested localities with poor sanitation.^{4,5}

Amoebic liver abscess and colitis have become almost non-existent in Alaska and Canada. In Canada, amoebic infection is encountered only in small patches of Indian population among whom it is endemic. In United States, the incidence of amoebic infection has decreased considerably except for Massachusetts, there were no reports of amoebic liver abscess from the northern states. Amoebiasis itself and amoebic liver abscess, are still prevalent in states of Louisiana, Texas and Arkansas. But their incidence is now falling. In Mexico, the incidence is still high. There are no reports of amoebic liver abscess from Japan, Iran and Afghanistan. Maximum case reports are from India.⁶

With the introduction of abdominal ultrasound, as a non-invasive, easily available investigation cases of amoebic liver abscess are being diagnosed more frequently.

With the emergence of HIV, opportunistic infections and infestations due to the microorganisms have increased considerably. Patients with amoebic colitis may progress to amoebic liver abscess more frequently than the general populations. The disease may progress to fulminant course compared to the general population.

Aims and Objectives

This study is done to know the patient's demographic characteristics and predisposing factors for amoebic liver abscess in order to draw up a disease control strategy locally in Karwar.

MATERIALS AND METHODS

Thirty-five patients admitted in general medicine department of Karwar Institute of Medical Sciences were selected for this study. This study was conducted over a period of one year in 2016-17.

Inclusion criteria are patients, having right hypochondriac pain and palpable tender liver with intercostal tenderness &/or patients having fever, chills, rigor with palpable tender liver &/or patients having cough, breathlessness, right sided chest pain and palpable tender liver&/or patients having loose motion, pain abdomen and palpable tender liver.

All the patients with above symptoms as amoebic liver abscess were subjected to fresh stool examination to search for trophozoites of amoebae and cysts also. Iodine staining was done to find the evidence of cysts in all the cases. Liver function tests were done in majority of cases, as majority of amoebic liver abscess were alcoholic. Bleeding time and clotting time were done in all the patients. Blood sugar estimation was done in all the cases. HIV and HbsAg was tested in all the cases. Abdominal ultrasound and X-ray was done.

RESULTS

A total of thirty-five amoebic liver abscess cases were screened and enrolled by general medicine department of Karwar Institute of Medical Sciences during period 2016-17. The following observation were made in the study.



Figure 2. Chest X-Ray Showing Elevated Right Dome of the Diaphragm



Figure 3. Ultrasonography of Abdomen Showing Amoebic Liver Abscess and Pleural Effusion

Age Group	No. of Patients	% of Patients
12-20 yrs.	0	0.0
21-30 yrs.	5	14.3
31-40 yrs.	16	45.7
41-50 yrs.	11	31.4
51-60 yrs.	2	5.7
61 & above	1	2.9
Total	35	100.00

Table 1. Age Distribution

RESULTS

The youngest patient in the present study was 23 years old and the oldest patient was aged 65 years. Amoebic liver abscess is not common in extremes of life. Middle aged people were commonly involved. Maximum incidence in age group of 31-50 years (77.1%).

Sex	No. of Patients	% of Patients
Male	31	88.6
Female	04	11.4
Total	35	100.00

Table 2. Sex Distribution

Menstruating female are less prone to develop amoebic liver abscess,⁷ this may be due to decrease congestion of the liver in menstruating women rendering the liver less vulnerable to *Entamoeba-histolytica* invasion. Alcoholism is another predisposing cause in males. Male patients seek hospital admission more frequently than females.

Income Group	No. of Patients	% of Patients
Low Income	31	88.6
Middle Income	04	11.4
High Income	00	0.0
Total	35	100.00

Table 3. Socio-Economic Status

In the present study, 88.6% of the patients are from low-socio economic status.

Predisposing Factors	No. of Patients	% of Patients
Alcoholism	28	80.0
HIV	2	5.7
HbsAg	1	2.9
Diabetes Mellitus	Nil	Nil

Table 4. Predisposing Factors Amoebic Liver Abscess

Eighty percent of the patients of amoebic liver abscess were alcoholic. Three females out of four were alcoholic. Majority of males consume alcohol mainly arrack, a minimum quantity being 90 ml to maximum of 780 ml/day and the duration varied from 3 years to 18 years. Alcohol damages liver as it is metabolized mainly in the liver, which predisposes to invasion of *Entamoeba-histolytica* forming a nidus in the liver leading to abscess formation. Right lobe of liver is involved in majority of the cases as the right lobe is bigger in size. It drains blood from the ascending colon and part of transverse colon.

Two of the patients were HIV positive. These patients have decreased cellular and humoral immunity leading to invasion of amoeba to different organs, thus producing abscess in the liver. One patient had HbsAg positive. This might have led to altered immune status leading to formation of amoebic liver abscess in infected individuals. None of the patients had diabetes mellitus in the present study were altered immunological status is known to be present.

DISCUSSION

Many studies were conducted in the different parts of the world on amoebic liver abscess. Few of the important studies are considered for comparison purpose and the comparative study is discussed below.

Studies	0-10	11-20	21-30	31-40	41-50	51-60	61 & above
Aptekar et al 1970 ⁸	-	-	26%	46%	18%	10%	-
Raghavan et al 1961 ⁹	6.5%	6.2%	37.6%	25.3%	25.3%	4.1%	1%
Kapoor et al 1972 ¹⁰	0.5%	5%	35%	27.5%	19%	9.5%	3.5%
Present Study (35 cases)	-	-	14.3%	45.7%	31.4%	5.7%	2.9%

Table 5. Comparison of Age Distribution in Different Studies

Maximum incidence of amoebic liver abscess is seen in 3rd to 5th decade. In the extremes of age, the incidence is very less. In the present study the highest incidence is seen between 31 to 50 years, which is comparable to all the above studies except Raghavan et al 1961 and Kapoor et al 1972, where the incidence was slightly younger age group.

Sex	Samsi et al 1974 ¹¹	Turrill et al 1966 ¹²	Kapoor et al 1972 ¹⁰	Present Study
Total	170	100	200	35
Male	153	86	170	31
Female	17	14	30	4
Ratio	8.5: 1	6: 1	5.6: 1	8.8: 1

The male preponderance of the disease is seen in all the above studies. The ratio of male to female varied from 53: 1 to 88:1. The present study results of sex distribution correlate with above studies.

Amoebic abscess is common in low socioeconomic status people because of bad sanitation and unhygienic food

habits, leading to increase incidence of amoebic liver abscess. Alcoholism is very common in these categories of people. This hospital caters to the poor patients. Hence there is increased incidence of Amoebic liver abscess in low socioeconomic group. The present study results of socioeconomic status correlate with Parija et al 1993.¹³

Patients	Kapoor et al 1972 ¹⁰	Subramaniam et al 1970 ¹⁴	Ramachandran et al 1972 ¹⁵	Present study
Alcoholic	60%	62%	62.5%	80%
Non – alcoholic	40%	38%	37.5%	20%

Table 7. Comparison of Alcoholics in Different Studies

Alcohol consumption predisposes person for liver disease. A high incidence of alcohol intake was seen in patient with amoebic liver abscess. In all the above studies, alcohol was being consumed by majority of patients which compared favorably to the present study also.

CONCLUSION

In this study, maximum incidence of amoebic liver abscess was observed in age group of 31-50 years. Male preponderance was observed. The disease was common in the low socioeconomic status people and alcoholism was major risk factor.

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