



**ORIGINAL RESEARCH PAPER**

**Medicine**

**STUDY OF PROGNOSTIC MARKERS OF AMOEBIC LIVER ABSCESS IN REFERENCE TO ALCOHOLIC AND NON-ALCOHOLIC CASES**

**KEY WORDS:** Amoebic liver abscess; Prognostic markers; Alcoholic; Non-alcoholic.

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**ABSTRACT**

**BACKGROUND**

Amoebic Liver Abscess is common parasitic disease in developing countries and alcohol is important risk factor for Amoebic Liver Abscess. Poor prognosis is more commonly seen in alcoholics+/-HIV individuals than non alcoholics. Hence prognostic markers are identified, so that aggressive treatment can be instituted.

**AIM**

To determine the good and poor prognostic markers in non alcoholic and alcoholics cases and comparison between them.

**Methods**

Prospective study of 60 cases of amoebic liver abscess was done. Prognostic markers were identified by clinical, biochemical, ultrasonography and aspiration of content. Patients were followed up till clinical resolution of symptoms.

**RESULTS**

A stepwise logistic regression suggested that S. Bilirubin > 3.5 mg/dl, Serum Albumin < 2 g/dl, volume of abscess > 500/ml, multiple abscesses are independent risk factor for morbidity and mortality. Bad prognosis (two cases) were encountered in study.

**CONCLUSION**

poor prognostic markers were more common among alcoholic cases. Hence, identification with poor prognostic factor is of clinical relevance.

**BACKGROUND**

Amoebic liver abscess (ALA) is an important cause of inflammatory space- occupying lesions of the liver in the tropics. With the availability of potent anti-amoebic drugs – relatively benign course with low mortality.

Alcohol continues to be an important risk factor for amoebic liver abscess. However, only 22-66.5% develop amoebic liver abscess.

There is increased frequency of amoebic liver abscess in these alcoholics. The association between amoebic liver abscess and alcohol is well known with alcoholics having three times increased risk than that of non-alcoholic healthy control. The prognostic markers were studied in amoebic liver abscess. Poor prognostic markers in amoebic liver abscess is much more common in alcoholics, HIV individuals.

Hence, this study was taken up to study the difference in clinical presentation, liver function test (bilirubin, albumin), number of abscess, and volume of abscess by ultrasonography, development of encephalopathy between two cases.

**AIM**

- There are two major categories of amoebic liver abscess – alcoholics and non- alcoholics, and those with poor prognosis and with good prognosis.
- Identification of patient with poor prognostic factor is of clinical relevance. So that aggressive treatment can be instituted.

**METHODS**

**Source of Data**

All patients diagnosed as amoebic liver abscess PATNA MEDICAL COLLEGE AND HOSPITAL during the period from (JUNE 2016 - DEC 2018).

**Sample size** – 60 patient

**Study Design**

All patients admitted to medical ward during the prescribed study period were considered for case identification and study was prospective study.

**Selection criteria**

- Inclusion
- Exclusion

**Inclusion Criteria**

Both the Genders, age more than 30 years, patients who are recently diagnosed as amoebic liver abscess by clinical, biochemical, ultrasonography, radiological and aspiration of content.

**Selection criteria of patient**

1. Patient presented with upper abdominal pain, palpable tender liver with intercostal tenderness.
2. Patient presented with fever, chills, rigors with palpable tender liver.
3. Patient having cough with breathlessness, right-sided chest pain.
4. History of alcoholism, quantity of alcoholism consumed, duration of alcoholism (> 8 years) were noted with abdominal pain and fever.

All the above patient were subjected for detailed clinical examination to make a provisional diagnosis of amoebic liver abscess. These were subjected for detailed investigation.

In all the cases diagnosed as amoebic liver abscess fresh stool examination was done to search for trophozoites of amoebae and cyst also.

HIV tested in all patients.

Abdominal ultrasound is a non-invasive technique to prove the presence of abscess, site, volume of abscess, size of liver were assessed.

Chest X-ray and fluoroscopy were done for radiological evidence of restriction of diaphragmatic movement, raised dome of diaphragm and involvement of lung and pleura.

Sophisticated investigations like IHA, complement fixation, ELISA could not be carried out in these patient due to lack of facilities in the institution to confirm the diagnosis of amoebic liver abscess.

#### Exclusion Criteria

Patients with Pyogenic Liver Abscess are excluded in the study.

Pyogenic liver abscess is differentiated from amoebic liver abscess from the following:

- Pyogenic liver abscess is multiple in number.
- Abscess cavity is well formed and thick-walled unlike amoebic liver abscess.
- History of trauma, surgery to abdomen, source of septic foci in the body will be present.
- Varying echogenicity when compared to uniform echogenicity in amoebic liver abscess.
- Pyogenic liver abscess are deep-seated unlike amoebic liver abscess, which are situated adjacent to capsule more on the right lobe of liver.

All patient were hospitalized and depending on hydration status, started on metronidazole therapy.

In acute cases IV metronidazole 500 mg IV t.i.d x 5 days followed by oral metronidazole.

#### RESULT

The study group consisted of 60 patients, among whom there were 46 (76.7%) alcoholic patients and 14 (23.3%) non-alcoholic patients. Mean quantity of alcohol was found to be 200 ml and mean duration 9.97 years. Majority of the males consume alcohol mainly arrack, a minimum quantity being 80 ml to maximum of 750 ml/day and the duration varied from 8 to 20 years.

Above 40 years of age, 76% were found to be alcoholic, whereas 57% were non- alcoholic with  $p=0.195$ . 3rd, 4th and 5th decade aged people were commonly affected. Mean age of alcoholic cases were  $46.84 \pm 10.91$  when compared to  $42.64 \pm 7.18$  in non-alcoholic groups.

More male patients presented with amoebic liver abscess are alcoholic and more female patients presented with amoebic liver abscess are non-alcoholic. Majority of the patients were male 93.3% compared to 6.7% in females.

Significantly increased percentage of amoebic liver abscess patients 91.3% in low-income group were alcoholic compared to non-alcoholic (64.3%) with  $p=0.025$  by Fischer Exact test. Amoebic liver abscess is common in these low SES because of bad sanitation, unhygienic food habits, decreased immunity, leading to increased incidence of amoebic liver abscess.

Most of the clinical features were more common in alcoholics than non-alcoholics. Jaundice being the commonest finding in alcoholics with  $p=0.159$  and fever being commonest in non-alcoholics with  $p=0.101$ .

All physical examination findings were more common in alcoholics than non- alcoholics.

Icterus and oedema being more common with alcoholics with  $p=0.318$  and  $p=0.314$  respectively due to involvement of liver parenchyma and poor nutritional status.

Clubbing is 2.73 times (17.4%) more common with alcoholics. It could be due to alcoholic liver itself or amoebic liver abscess which is known to give rise to clubbing. Anaemia seen in 20% of the

patients. It is due to poor nutritious status of the patient also toxic nature of the diseases.

Intercostal tenderness were significantly observed in alcoholics than non-alcoholics with  $p=0.045$ .

Hepatomegaly 3.08 times (80.4%) were more common in alcoholic when compared to non-alcoholic with  $p=0.095$ . The liver span ranged from 13 to 17 cms.

There is no significant variation of routine blood examination between alcoholic and non-alcoholic with  $p>0.05$ . Hb% ranged from (6 to 9.4 gm%), total count ranged from (11,100 to 45,000 cumm) and differential count ranged from (72 to 89%).

Serum bilirubin ( $>3.5$  mg /dl) is 2.83 times more common in alcoholics than non- alcoholics with  $p=0.318$ , ranged from 3.6-15.4 mg/dl.

Serum albumin is 3.85 ( $<2$  g/dl) times decreased in alcoholic than non-alcoholic with  $p=0.112$ . Value ranged from 1.2-2 g/dl.

Significant elevation of liver enzymes were observed in alcoholic cases. SGPT ranged from 41-171 IU/L, SGOT ranged from 41-92 IU/L and alkaline phosphatase ranged from 157-180 IU/L.

Increased liver size ( $> 13$  cms) were 6.48 times significantly more in alcoholics with  $p=0.007$ . Liver size varies from 13-19 cms. Single abscess were equal in both the cases. Multiple abscess were increased in alcoholic cases with  $p=0.329$  due to reduced immunity. Volume of abscess ( $> 500$  ml) were 8.38 times significantly increased in alcoholic cases with  $p=0.001$ . The volume varied from 80 ml to 1450 ml. Right lobe was the major site in the liver. It is seen in 91.7% (R) lobe, 1.7% in (L) lobe and 6.7% in both the lobes.

Chest X-ray: Raised dome of diaphragm were observed in 95% and was due to upward enlargement of liver and pleural effusion were observed in 5% of cases. Restriction of right hemidiaphragmatic movement were observed in almost all patients by fluoroscopy.

Treatment: Medical line of management were seen in 46.7% of cases whereas medical and surgical line of management were observed in 53.3% of cases.

Serum bilirubin ( $>3.5$  mg/dl) is 2.83 times more common in alcoholic than non- alcoholic with  $p=0.318$ . Serum albumin ( $<2$  g/dl) is 3.85 times decreased in alcoholic than non-alcoholic with  $p=0.112$ . Multiple abscess were increased in alcoholic cases with  $p=0.329$ . Volume of abscess ( $>500$  ml) were 8.38 times significantly increased in alcoholic cases with  $p=0.001$  as per the Fischer Exact test. HIV cases were 4.3% observed in alcoholic cases. Encephalopathy cases were not encountered in our observation.

Good prognosis were seen in both alcoholic and non-alcoholic patients, but the duration of recovery was significantly prolonged in alcoholic with  $p<0.001$ . Around 4.4% of bad prognosis were seen in alcoholic patients.

#### CONCLUSION

- Amoebic liver abscess is commonly seen in middle-aged with male preponderance.
- Amoebic liver abscess were observed both in alcoholic and non-alcoholic cases, however it is more common with alcoholic patients.
- Pain in the right hypochondrium associated with tender hepatomegaly and intercostal tenderness is diagnostic of amoebic liver abscess.
- Ultrasound confirms the site, size and number of amoebic liver

abscess. It also helps in identification of prognostic markers in relation with alcoholic and non- alcoholic patients.

- Radiological investigation supports the clinical diagnosis.
- Liver Function Test also helps in the identification of prognostic markers in amoebic liver abscess between alcoholic and non-alcoholic patients.
- Two cases of HIV were seen in alcoholic patients.
- Larger abscess (> 500 ml) need surgical intervention otherwise medical line of treatment is adequate in all the cases.
- No complication was observed in the present study.
- Prognosis is good in the present study.
- Mortality (bad prognosis) were encountered in present study in HIV patients who were alcoholics.