

# Clinical and Etiological Study on Chronic Liver Diseases

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## A B S T R A C T

**Introduction:** Chronic liver disease (CLD) with its different aetiology and presentation is a very common cause of hospital admission in tropical country. This study on CLD includes the diagnosis of aetiology and examination of clinical features as well as detection of associated disease and complications. Aim of the study was to detect the aetiological factors of CLD in and around Calcutta and to study clinical, biochemical, ultrasonographic, endoscopic and histopathological features of different CLD.

**Material and Methods:** This was an observational study conducted on consecutive 35 patients with CLD attending OPD as well as inpatients in CSTM at the School of Tropical Medicine, Kolkata within one year period. In our single centre, prospective, observational study, 35 consecutive patients with CLD were included. Chronic liver disease (CLD) was diagnosed on the basis of clinical findings, laboratory investigations, ultrasonographic and upper GI endoscopic study.

**Results:** Fatigue was the commonest symptom (85.71%). Majority of patients (70%) presented with hepato-splenomegaly with or without jaundice (42.86%). About half of the patients presented with ascites. About 1/3<sup>rd</sup> of the patients had history of alcoholism or blood transfusion. Raised SGPT was the commonest (83.09%) and most reliable marker of chronic hepatitis. Ultrasonography and upper gastrointestinal endoscopy both helped in the diagnosis of portal hypertension (42.85%). Needle liver biopsy could be done in 11 cases only. Chronic active and chronic persistent hepatitis were found in 3 cases each and 2 idiopathic portal hypertension/ NCPF (non cirrhotic portal fibrosis) diagnosed in 1 case. Liver biopsy was helpful in diagnosing rare causes of hepatomegaly like amyloidosis (1 case) and chronic granulomatous hepatitis (2 cases) in our study.

**Conclusion:** From our study it can be concluded that clinic-aetiological spectrum of CLD can be divided into five major groups – chronic hepatitis, non cirrhotic portal fibrosis, space occupying lesions, metabolic liver disease and chronic granulomatous hepatitis.

**Key words:** Chronic liver diseases, clinical presentation, etiology

## INTRODUCTION

Spectrum of chronic liver disease extends from chronic hepatitis to cirrhosis and finally to hepato-cellular carcinoma. Most cases of chronic hepatitis in tropical countries result from Hepatitis B virus and Hepatitis C virus infection. Other forms of CLD include: those resulting from excessive alcohol intake, Indian childhood cirrhosis, Wilson's disease, Haemosiderosis and veno-occlusive disease.<sup>1</sup> Haemosiderosis or Bantu's siderosis is the disease of south Africa, whereas veno-occlusive disease occurs in Jamaica and other localized part of Africa. Liver is rarely involved in other chronic infective diseases like TB, Histoplasmosis and others.<sup>1</sup> Major space occupying lesions involving liver are Amoebic abscess, pyogenic abscess and hydatid disease.

Chronic hepatitis is defined as chronic inflammatory reaction within the liver continuing without improvement for at least 6 months.<sup>2</sup> However, where the diagnosis is obvious as in autoimmune hepatitis, it is not necessary to wait for 6 months before commencing therapy. Rangari M et al<sup>3</sup> also noted that the criteria of duration of 6 months should not be applied to

an individual patient presenting with shorter clinical course, who otherwise has otherwise has other features of chronic liver disease.

Dienstag and Issel-becher described the aetiology of chronic hepatitis as viral hepatitis B, C and D, Autoimmune hepatitis, drug associated hepatitis, cryptogenic hepatitis. According to Sheila Sherlock hepatitis B and C, Autoimmune hepatitis and Wilson's disease are main causes of chronic hepatitis. A recent study carried out at New Delhi<sup>4</sup> has showed aetiology of cirrhosis of liver in the young and adult groups as HBV related (50% in both), alcohol related (6% and 25%), cryptogenic (30% and 20%). In the young group one had Wilson's disease and another had alpha 1-antitrypsin deficiency.

Regarding autoimmune hepatitis 76 the prominence of extrahepatic features of auto-immunity as well as sero-immunologic abnormalities (ANA, SMA, LKMs) supports an autoimmune process in its pathogenesis. But these typical features of autoimmunity do not occur in all cases. So broader designation idiopathic or cryptogenic is used.<sup>5</sup>

Many drugs produce abnormalities in liver function test (LFT) without progressive liver disease, but some drugs can elicit an adverse reaction indistinguishable from autoimmune hepatitis. drugs having definite association with chronic active hepatitis (C.A.H) are oxyphenisatin, methyl dopa, nitrofurantoin, dantrolene sodium. Isoniazid has probable association with C.A.H. drugs having rare association with C.A.H. are acetaminophen, halothane, sulfonamide, aspirin. Chronic hepatitis can also be classified by<sup>6-</sup>

1. Grade of necro-inflammatory activity.
2. Stage of fibrosis, cirrhosis based on histopathologic examination of liver tissue.

Present study was undertaken to find out the causes of CLD and its various clinical presentations in our geographical region and compare them with findings of past workers of differ regions.

## MATERIAL AND METHODS

This was an observational study conducted on consecutive 35 patients with CLD attending OPD as well as inpatients in CSTM at the School of Tropical Medicine, Kolkata within one year period. The patients were selected irrespective of their age and sex. Chronic liver disease (CLD) was diagnosed on the basis of clinical findings, laboratory investigations, ultrasonographic and upper GI endoscopic study. Liver biopsy was also done, where it was possible. Inclusion criteria for this study were hepato/hepatosplenomegaly with abnormal LFT for more than 6 months, chronic viral hepatitis, acute hepatitis- whose clinical feature and LFT not resolving within 6 months, follow up patients with biopsy proven CLD, patients with recurrent jaundice for last 6 months and patients with unexplained hepatomegaly. A pre-designed proforma was used to collect data by proper history taking, clinical examination and investigations of total 35 patients with CLD. Apart from routine investigations, viral markers (HBsAg, HBeAg, Anti HBc, Anti HCV), autoimmune markers (ANA, LE cell phenomenon), prothombin time, upper GI endoscopy, slit lamp examination of eye, serum ceruloplasmin, and liver biopsy were done. Liver biopsy were not done in all patients due to presence of either ascites or hepatocellular decompensation or raised prothombin time or presence of SOL in the liver.

## STATISTICAL ANALYSIS

Descriptive statistical method was used for data analysis with the help of Microsoft office 2007.

## RESULTS

We have studied 35 patients of CLD in one year period. Their clinical profile were observed in detail along with laboratory investigations to reach clinic aetiological diagnosis. Common age group was from 11 to 20 years. Majority (80%) were below 50 years.

Majority of patients (68.57%) were male with male:female = 2.2:1 (figure-1).

Fatigue was the commonest symptom (85.71%). Other common symptoms of CLD were found to be pain/heaviness of abdomen, loss of appetite, nausea, vomiting, loss of weight, fever and hematemesis-melena in order of

frequency. Most commonly found duration of illness was 6-12 months. Majority of patients (approximately 70%) presented with hepato-splenomegaly with or without

Symptoms, sign	Number of Patients	Percentage
Fever	14	40%
Fatigue	30	85.71%
Loss of appetite	22	62.86%
Loss of weight	17	48.57%
Nausea, vomiting	17	48.57%
Pain abdomen, heaviness	28	80%
Haematemesis, melaena	7	20%
Anaemia	22	62.86%
Jaundice	15	42.86%
Oedema	8	22.86%
Clubbing	5	14.29%
Hepatomegaly	25	71.43%
Splenomegaly	26	74%
Ascites	16	45.71%
Engorged abdominal vein	5	14.29%

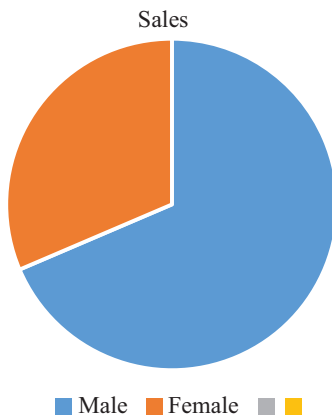
**Table-1:** Presenting sign and symptoms of CLD

Clinico-pathological spectrum	No. of cases	Percentage
1. Chronic hepatitis/ cirrhosis	26	74.25%
2. Non cirrhotic portal fibrosis (NCPF)/ Idiopathic portal hypertension	2	5.7%
3. Chronic granulomatous hepatitis	2	5.7%
4. Space occupying lesions i. Amoebic liver abscess ii. Hydatid cyst	2 1	5.7% 2.86%
5. Metabolic liver disease i. Wilson's disease ii. Amyloidosis	1 1	2.86% 2.86%

**Table-2:** Clinico-pathological spectrum of CLD

Etiology	No. of cases	Percentage
1. Viral hepatitis i. Hepatitis B ii. Hepatitis C iii. Hepatitis B + C	12 4 1	34.29% 11.43% 2.86%
2. Alcoholic	3	8.57%
3. Hepatotoxic agents i. Drugs ii. Arsenic	2 1	5.7% 2.86%
4. Infections other than virus i. Tuberculosis ii. Amoebiasis iii. Hydatid disease	1 2 1	2.86% 5.7% 2.86%
5. Metabolic liver disease iii. Wilson's disease iv. Amyloidosis	1 1	2.86% 2.86%
6. Combination i. Alcohol + HCV ii. Drug + HBV	1 1	2.86% 2.86%
7. Cryptogenic	11	31.43%

**Table-3:** Etiological spectrum of CLD



**Figure-1:** Pie chart showing gender distribution

jaundice (42.86%). Common physical signs found were hepatomegaly, splenomegaly, anemia and jaundice. About half of the patients presented with ascites and quarter of the patients were presented with edema (table-1).

About 1/3<sup>rd</sup> of the patients had history of alcoholism or blood transfusion. Elevation of SGPT was found to be commonest (83.09%) and most reliable marker of chronic hepatitis. Albumin-globulin ratio was changed (<1.5) in almost all cases (94.29%). Serum bilirubin level and serum alkaline phosphatase levels were elevated in about half of the cases.

Ultrasonography and upper gastrointestinal endoscopy both helped in the diagnosis of portal hypertension (42.85%). About 1/3<sup>rd</sup> of patients had raised prothrombin time which reflected chronic hepato-cellular failure. Needle liver biopsy could be done in 11 cases only, which showed cirrhosis none. Chronic active and chronic persistent hepatitis were found in 3 cases each and 2 idiopathic portal hypertension/ NCPF (non cirrhotic portal fibrosis) diagnosed in 1 case. Liver biopsy was helpful in diagnosing rare causes of hepatomegaly like amyloidosis (1 case) and chronic granulomatous hepatitis (2 cases) in our study.

From our study it can be concluded that clinico-pathological spectrum of CLD can be divided into five major groups – chronic hepatitis, non cirrhotic portal fibrosis, space occupying lesions, metabolic liver disease and chronic granulomatous hepatitis. Among them chronic hepatitis was commonest presentation (72.45%) (table-2). One patient of Wilson's disease although presented with clinical features of chronic hepatitis/ cirrhosis, was included in the metabolic liver disease group.

About half of the patients had evidence of hepatitis B virus infection, hepatitis C infection was 15.38% cases and hepatitis B coinfection with hepatitis C was found only 3.85% cases. Alcoholic chronic hepatitis was found in 10% cases, wilson's disease and hepatotoxic drugs as etiological factors were rare. In 1/3<sup>rd</sup> cases no definitive diagnosis (cryptogenic) could be made. Other causes were amoebic liver abscess, hydatid cyst, amyloidosis and chronic arsenic toxicity. Out of 2 NCPF cases 1 was related to chronic arsenic toxicity and out of 2 granulomatous hepatitis 1 was related to tuberculosis. We could not found any definitive cause in 11 patients. Among them 9 presented with features of chronic hepatitis, 1 with granulomatous hepatitis and 1 with NCPF (table-3).

In contrast to Western country hepatitis virus infection is

found to be the chief offender in the causation of chronic liver diseases till date. Tough cryptogenic group still comprise the major etiologic group in CLD which may shrink if hepatitis B virus mutant and hepatitis C virus antibody were traced more widely.

## DISCUSSION

35 patients with CLD were studied. The mean age of the patients was 32.29± 14.72 years. Commonest age group was 11 to 20 years. They had mostly idiopathic and chronic hepatitis B. We found 2 patients of amoebic liver abscess belong to 40 – 60 years. This age group is quite similar to that found by Michael J. G. et al who had found the amoebic liver abscess was 10 times more frequent in adult males than in females.<sup>7</sup> Common physical signs found were hepatomegaly, splenomegaly, anemia and jaundice. About half of the patients presented with ascites. This finding also corroborates with Sama et al<sup>8</sup> who found ascites in 40% cases.

Among 35 patients 26 were diagnosed to be suffering from chronic hepatitis/ cirrhosis on the basis of clinical laboratory investigations, ultrasonographic, upper GI endoscopic study and histopathological methods. This is the major group of CLD in Tropics (74.25%). 12 patients (46.15%) were HBV related, 4 patients (15.38%) were HCV related and 1 patients (3.84%) had evidence of infection of both viruses. 1 patients (3.84%) had evidence of pre- core mutant HBV infection. Our study corroborates well with that of Ray G. et al<sup>9</sup> from Eastern India. In India HBV is reported to be responsible for 70% cases of chronic hepatitis.<sup>10</sup> The relation is found to be much more than that found in our study but coinfection of HBV and HCV is uncommon and has been recorded in less than 10% of chronic hepatitis patients.<sup>10</sup> This finding support our observation (3.8%).

Data regarding prevalence of dual infection of HBV and HCV in CLD in India raises much controversy. Sarin et al<sup>11</sup> demonstrated dualinfection in 13.5% cases while Tandon et al<sup>12</sup> recorded HBV and HCV co-infection and superinfection in 75% and 42% respectively to chronic hepatitis.

Our study also correlate with Amrapurkar et al<sup>13</sup> who showed that HbsAg was positive in 40.5% and Anti HCV was positive in 16.6% cases of CLD but Sood A et al<sup>10</sup> reported that in CLD, incidence of HCV was apparently higher as compared to HBV (25.9% vs. 18.8%) and combined infection. Though authors could not rule out the false positivity of Anti HCV reactivity by ELISA.

We found alcoholic chronic hepatitis in 3 patients (11.59%). Wilson's disease (only 1 case) and hepatotoxic drugs (only 2 cases) as etiological factors were rare. Autoimmunity was found in none. This findings was also supported by Ray G et al.<sup>9</sup>

### Limitations

This study has several limitations. We could not test HBV DNA and HCV RNA of all patients as CLD may not show positive HBsAg and Anti HCV. We could not perform all autoimmune serology tests and liver biopsy in all patients.

## CONCLUSION

This study offers data on clinical presentation and the etiology of chronic liver disease in the Eastern part of India. From our

study it can be concluded that clinic-aetiological spectrum of CLD can be divided into five major groups – chronic hepatitis, non cirrhotic portal fibrosis, space occupying lesions, metabolic liver disease and chronic granulomatous hepatitis.

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