Study of Clinico-etiological Profile and the Complication Pattern in Patients with Chronic Liver Disease at Tertiary Care Centre

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ABSTRACT

Introduction: Knowledge of etiology, mode of clinical presentation and pattern of development of complications of chronic liver disease will help in designing optimal and cost effective control measures of the disease. The present study was performed to find out etiology, mode of clinical presentation and pattern of development of complications in patients of chronic liver disease.

Material and Methods: The study included 62 patients suggestive of chronic liver disease, attending gastroenterology OPD, and those admitted in medicine department of M.Y. Hospital, Indore. Detailed history, physical examination, clinical examination, abdominal ultrasound examination, Child-Pugh score and liver biopsy were performed.

Results: In present study, 54.8% patients belonged to age group of 20 to 40 years, 87.1% patients had history of abdominal distension, 69.4% had jaundice and 48.4% had history of gastrointestinal bleeding. As clinical sign of hepatic failure and portal hypertension, loss of body hair and splenomegaly was reported in 41.9% and 41.9% patients respectively.

Conclusion: As per the present study data, CLD was a common entity in Central India with male preponderance and affecting mostly people of middle age group, which required immediate social and medical intervention.

Keywords:chronic liver disease, child Pugh's scoring, abdominal distension, jaundice, gastrointestinal bleeding

INTRODUCTION

Different study based on Indian data on several clinical aspects of chronic liver disease (CLD) like etiology, natural history, clinical presentation, treatment recommendations and its effect of public health.[1-3] But its trend and burden to different morbidity and mortality have never obtained seriousness as in other developed countries.[3-5]

Examining the trend of the disease over a time period becomes an important tool to observe the variation of its different aspect and provide the status of country's public health system.[6-7]

Getting the knowledge of exact disease burden of the country assist in cost effective and optimal use of control measures taken by the government of that country and it also provide the disease scenario particularly in low resource country like India.[7] This is the reason, when there is a lack of such data; government has failed to develop effective policies which can help the patients to get rid of the disease such as optimal use of liver transplant.[7]

The present study was done to find out etiology, mode of clinical presentation and pattern of development of complications in patients of chronic liver disease.

MATERIAL AND METHODS

A hospital based study was done including 62 patients who presented with sign and symptoms suggestive of chronic liver disease (CLD), fulfilling the inclusion criteria and attending Gastroenterology OPD or were admitted in Medicine department of M.Y. Hospital, Indore.

A written informed consent from all the patients and Ethical Committee approval was obtained before starting the study.

Detailed history of patients along with assessment of risk factors known to be associated with CLD was recorded. Assessment of risk factors included family history to rule out hemochromatosis, wilson's disease, α1-antitrypsin deficiency, cystic fibrosis, history of excessive alcohol consumption (60-80 gm alcohol per day for men, 40-60 gm per day for female for 10 years or more), hyperlipidemia, diabetes mellitus, obesity, previous blood transfusion and parenteral exposure for chronic hepatitis B or hepatitis C and risk factors for autoimmune hepatitis and primary sclerosing cholangitis.

A detailed physical examination was done, specifically for finding the manifestations of liver disease which could result from loss of hepatocyte mass, bile duct obstruction or development of portal hypertension.

Patients with jaundice, due to increase in serum bilirubin, small liver or a liver of nodular contour due to established cirrhosis, gynaecomastia, testicular atrophy, palmar erythema and spider angioma were included.

Features suggestive of liver fibrosis and portal hypertension like ascites, edema, hypersplenism, portal systemic shunting resulting in distended superficial and periumbilical (caput medusa) abdominal veins, were taken into consideration at the time of physical examination. Upper GI endoscopy was done to see oesophageal varices and portal hypertensive gastropathy. Specific manifestation like duputyren's contracture in chronic alcoholics and Kayser-Fleischer rings in Wilson's disease were also searched for.

After detailed clinical examination biochemical and hematological examinations were done to evaluate liver function.

Apart from these, hepatitis B surface antigen (HBsAg) was done for chronic hepatitis B infection. Those patients who were not alcoholic, and HBsAg was negative but clinical examination and laboratory tests were favoring CLD, were subjected to other laboratory investigations like anti-HCV (for chronic hepatitis C infection), ANA, AMA, serum ceruloplasmin level, serum ferritin and α1-antitrypsin to find out etiology.

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How to cite this article: Kumar Prafull Chandra, Shiv Nath Singh, Anil Kumar Pawah. Study of clinico-etiological profile and the complication pattern in patients with chronic liver disease at tertiary care centre. International Journal of Contemporary Medical Research 2016;3(6):1668-1670.

Liver biopsy was done in 8 patients. This included 2 patients who had SOL in liver with evidence of distance metastasis. Biopsy was done to prove that malignancy was of hepatic origin. Other six patients were those in whom minimal clinical and biochemical evidence of chronic liver disease was present, or where etiology was not definite. Once biopsy proved chronic hepatitis and/or cirrhosis in them they were included in our study.

Patients were also evaluated by abdominal ultrasound examination and where necessary Doppler flow studies were done.

The clinical findings were used in association with laboratory studies to calculate Child-Pugh Score.

The Child-Pugh score is calculated by adding the score of the five factors(ascites, bilirubin, albumin, prothrombin time and encephalopathy) and can range from 5 to 15. Child Pugh class is either A (a score of 5-6), B (7 to 9) or C (10 or above). Decompensation indicates cirrhosis with a Child-Pugh score of 7 or more (Class B and C).

Follow-up of the patients was done in Gastroenterology OPD throughout the study period of 1 year and their symptomatic response to treatment was noted. Whenever patients developed decompensation and complications meriting admission in hospital, they were admitted in the hospital and further work-up was done.

STATISTICAL ANALYSIS

All the data were analyzed using IBM SPSS- ver.20 software. Analysis was performed using chi-square test and independent sample student t test. P values <0.05 was considered to be significant.

RESULTS

In present study, most of the patients [34 (54.8%)] belong to age group of 20 to 40 years followed by 21 (33.9%) who were between the age group of 41-60 years. Out of 62 patients, there were 50 (83.33%) males and 12 (19.37%) females. The distribution of different characteristic of patients (history and clinical sign) was shown in the table-1.

Out of 60 patients whose serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) level was measured, 42 (70%) had abnormal ALT and 34 (56.7%) patients had abnormal AST.

Out of 58 patients whose serum albumin was measured, 25 (43%) had serum albumin level less than 3 gm/dL, while 21 (36.2%) had in between 3 to 3.5 gm/dL together constituting 79.3% who had defective synthetic function. Twelve (20.7%) patients, however, had normal synthetic function with serum albumin levels more than 3.5 gm/dL.

Out of 60 patients, 12 (20%) had severely compromised function with PT of patient more than 6 second longer than control value, 27 (45%) patients PT was 3-6 seconds longer than control value and 21 (35%) patients had PT within normal variation, i.e. PT (patient) – PT (control) < 3 seconds.

Out of 61 patients, 35 (57.4%) patients had serum bilirubin values less than 2 mg/dL, 10 (16.4%) had value in between 2 to 3 mg/dL and 16 (26.2%) patients had values more than 3 mg/dL.

Out of 60 patients whose child Pugh's scoring was done, most of the patients had presented in advanced liver disease, 23 (38.33%) presenting in Class C and 26 (43.33%) presenting in Class B. Only 11 (18.33%) patients presenting in Class A child Pugh score.

Parameters		N (%) (n=62)
History	Abdominal distension (ascites)	54 (87.1)
	Jaundice	43 (69.4)
	Gastrointestinal bleeding	30 (48.4)
	Peripheral edema	29 (46.8)
	Encephalopathy	15 (24.2)
	Decreased appetite	30 (48.4)
Clinical signs*	Loss of body hair	26 (41.9)
	Splenomegaly	26 (41.9),
	Spider angioma	21 (33.9),
	Parotid enlargement	11 (17.7)
	Gynaecomastia	10 (16.1%)
Data is expressed as number of patients (%), *Clinical signs of hepatic failure and portal hypertension other than ascites		

Table-1: Distribution of different characteristic of patients

Platelet count was done in 45 patients, 14 (31.1%) of patients had platelet less than 100,000 per microliter while 31 (68.9%) had platelets more than 1 lakh per microliter.

Out of 43 patients whose upper GI endoscopic evaluation was done, 37 (86%) had esophageal varices, 14 (32.6%) had portal hypertension gastropathy also and 6 (14%) had normal upper GI endoscopic study.

Out of 62 patients of CLD, chronic alcohol ingestion [24 (38.7%)] was the most common etiology followed by chronic hepatitis B infection [17 (27.4%)]. Four (6.5%) patients had chronic hepatitis B and had history of long-term alcohol intake. Two (3.2%) patients had chronic hepatitis C infection, 3 (4.8%) had Wilson's disease and 1(1.6%) had Budd Chiari Syndrome. Eleven (17.7%) patients were such whose etiology of CLD could not be determined.

DISCUSSION

Our study, a hospital based study where most of the patient are from low socioeconomic status, was an endeavor not only to search the mode of presentation of patients with CLD but also to find out their etiology in our region.

Male predominance (80.6%) was observed in present study and most of the patients (88.7%) were of middle age group, which is similar to the study done by Pal et al at Kolkata where 79% of patients were male and 54% of patients belonged to age group 31 to 50 years indicating that CLD is more common in male suggesting high risk of exposure to causative factors.[8]

Mode of presentation of patients with chronic liver disease was an important consideration taken in our study. Pal et al has reported ascites in 52% of patients followed by jaundice in 40% and GI bleeding in 24%, which is almost similar to the findings of present study.[8] Thus in central India patients were presenting with rather more frank symptoms of CLD.

The etiology of chronic liver disease was an arena where much difference was noted in our study from those of Western Countries. In a large multicenter study done by Stroffoline et al searching for the etiology of chronic hepatitis in Italy studied 6210 patients consecutively admitted to 79 hospitals throughout Italy. They found chronic hepatitis C (62.6%) as most common etiological factor, chronic hepatitis B in 9.2% and history of

alcohol abuse was present in 19.2% of cases, but only 5.2% cases were without viral infection and had only alcohol abuse.[9] Almost similar etiological profile was seen in present study.

Velosa et al from Portugal in a study of 988 patients of CLD, found viral etiology in 82%, metabolic in 2%, biliary in 2%, alcoholic in 11%, autoimmune in 1.5%, and idiopathic in 2%. Among viral group, hepatitis B virus infection in 65%, hepatitis C in 26% and hepatitis D was found in 8%.[10]

Khokharfrom Islamabad in a study of 518 patients of CLD, biopsy proven chronic hepatitis was present in 354 patients. Out of these 86% had hepatitis C, 10.7% hepatitis B, 3.1% had both B and C.[11] Similarly a study of 44 patients by Acharyaet al at AIIMS, New Delhi found 50% of patients had chronic Hepatitis B, associated hepatitis D with hepatitis B in 21%, hepatitis C in 15%, non-A, non-B other than Hepatitis C virus in 13%. 2% patients had autoimmune hepatitis B.[12]

The present study data showed that alcohol is the most common culprit for CLD in Central India. Further studies will be needed to establish what cause is; high susceptibility of study population to alcohol, high risk behaviour of the population, or both for getting advanced CLD due to alcohol in Central India.

Upper GI endoscopic evaluation study done by Pal J et al found 78% had esophageal varices and 13% had portal hypertensive gastropathy.[8] Dangwal TR et al found 13 out of 29 children with CLD subjected to upper GI endoscopy had esophageal and/or gastric varices.[13] Almost similar findings werefound in the present study.

Laboratory results of serum aminotransferase levels showed elevated levels, signifying ongoing injury. Aspartate aminotransferase level was found to be elevated in less number of patients in comparison to ALT level.

Acharyaet al had found hypoalbuminemia in more than half of the patients they studied.[12] In our study hypoalbuminemia (serum albumin level less than 3.5 g/dL) was seen in 79.31% patients whose serum albumin was measured (61 patients). This signifies that patients of CLD are reporting to physicians at late stages of the disease, when most of reserve capacity of the liver has been damaged and patients had been asymptomatic up to late stage. Similarly prothrombin time, another measure of synthetic function of liver was deranged in 65% of patients and 68.9% patients had platelet count more than 1 lakh. It was expected that after development of cirrhosis and splenomegaly, platelet count should decrease to levels below 1 lakh. Only 31.1% of our patients had platelet count in this range.

Child-Pugh Score and class, a marker of extent of liver damage was evaluated. In a study of 91 patients Pal et al found 51% of patients belonged to Child-Pugh Class B followed by class C in 35 % and only 14% in class A.[8] In present study class B and C together constituted 81.7% of the patient which is considered as fairly advanced liver disease. This means that most of the patients of CLD are asymptomatic in their initial stage and develop symptoms only when CLD had progressed a lot and come to seek care in fairly advanced stage.

Sample size of present study was less, raising a requirement of large randomized clinical trials[14] to confirm the results.

CONCLUSION

CLD is a common entity in Central India with male preponderance and affecting mostly people of middle age group. People presenting to clinics were at fairly advanced stage with frank symptoms of CLD like ascites, jaundice and history of gastrointestinal bleeding present in most of them. Few patients may also present with life-threatening condition of hepatic encephalopathy. Oesophageal varices are present in most of them and thus they will need prophylactic treatment to prevent variceal hemorrhage in future. Most of the patients of CLD were in Child Pugh Class (B+C), which is an indication for liver transplantation, as prognosis in them is guarded. They have suffered irreversible damage to such an extent that decompensation of liver function has occurred in them.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 22-04-2016; **Published online**: 23-05-2016