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ORIGINAL ARTICLE

MAGNITUDE, CLINICAL PROFILE AND HOSPITAL OUTCOME OF CHRONIC LIVER DISEASE AT ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE, ADDIS ABABA, ETHIOPIA

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ABSTRACT

Background*: Chronic liver disease /CLD/ is one of the major causes of admission in hospitals. It has a wide spectrum of presentation, causes and requires organized treatment approaches to reduce the mortality.*
Objectives: *To assess the prevalence of CLD among medical admissions, clinical presentations, types of management received and hospital outcomes in St. Paul's Hospital Millennium Medical College.*
Materials and Methods: *Data was collected retrospectively from January 20, 2009 - September 11, 2014 G.C in admitted patients from medical wards and ICU. Questionnaire was comprised of basic demographic data, clinical symptoms and signs, laboratory results, type of treatment received and hospital outcomes.*
Results*: The proportion of CLD in the medical wards during the study period was 2.3%. Men comprised 91.5% of admission due to CLD. The most common clinical presentations were abdominal distension and jaundice with 70% and 33.3% prevalence respectively. From viral causes, Hepatitis B virus was diagnosed in 44.4 % and 18% of the causes were due to Hepatitis C Virus; 3 individuals had mixed infection. Patients received only supportive treatment and 41% passed away during their hospital stay and only 28% of were discharged improved.*
Conclusions*:Chronic liver disease is prevalent in the study and associated with high mortality. Despite the burden of the disease, at the time of the study, no antiviral or other targeted treatment was provided in the hospital. We recommend further study to assess the cause of the increased mortality and provision of anti-viral and other targeted therapies.*

Key words*: CLD, HBV, HCV, Hepatocellular Cancer, Ethiopia.*

INTRODUCTION

Chronic liver disease (CLD) comprises a spectrum of chronic active hepatitis, cirrhosis, and hepatocellular carcinoma. It is defined as an inflammatory injury of the liver which has persisted for six or more months and may progress to end stage liver failure and mortality (1). The commonest etiologies of chronic liver disease are: Hepatitis B virus (HBV), Hepatitis C virus (HCV), alcohol abuse, drug and aflatoxin B1 consumption (2).

Globally 1.4 million people die yearly because of CLD (3). Around 350 million people have chronic HBV, another 170 million have chronic HCV infection (4). The World Health Organization (WHO) has estimated the prevalence of HBV and HCV infections in sub-Saharan Africa to be 10% and 3% respectively (5).

In Ethiopia the exposure of infection/ presence of any markers of infection for HCV and HBV were found to be 1.4% and 68% respectively (6). No national prevalence data is available and most of the reported studies have been institution-based, but in general it is estimated that there is 8-10 % prevalence for HBV and 1-3 % for HCV (6).

The treatment of CLD depends on the etiologic agent (1). Chronic viral hepatitis is treated with appropriate antiviral drugs, depending on the cause of the viral infection. Currently, promising treatments exist to clear HCV infection from the liver. Treatment is also available to achieve viral suppression and prevention of complications resulting from HBV infection (7). Chronic alcoholic hepatitis is best treated with discontinuation of alcohol and if severe, with steroids (1,7).

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Hepatocellular carcinoma may be treated with chemotherapeutic agents such as Sorafenib (9). However such drugs are not widely available and have no strong beneficial effect except for palliation. Liver transplantation is however the treatment of choice for liver failure from different causes of CLD when patients present with end-stage liver disease. The other curative therapies based on size and functional status of the patient with hepatocellular carcinoma are resection and ablation therapies which are not widely available in the country (1).

The study aimed to understand the prevalence, common clinical presentation, types of management given and in-hospital outcome of patients with CLD. As most of the studies regarding CLD in Ethiopia are from more than 3 decades ago, this study will serve as a baseline for future studies. It has also assessed the outcome of admitted patients which was associated with considerable mortality. This should alarm hospitals and policy makers to avail specific treatment options including antiviral therapy.

PATIENTS AND METHODS

The study was carried out at St. Paul's Hospital Millennium Medical College (SPHMMC) on patients who were admitted either to the intensive care unit (ICU) or Internal Medicine in-patient wards from January 20, 2009 to September 11, 2014 G.C. It was a retrospective study design and data were reviewed from the Internal Medicine ward and ICU, from charts labeled as CLD, cirrhosis, hepatocellular carcinoma (HCC), hepatitis from different causes, cryptogenic cirrhosis and fulminant hepatitis/acute liver failure. Alcohol problem drinking was defined from the CAGE questionnaire criteria. The questionnaire, the name of which is an acronym composed of its four questions assesses whether the individual has ever felt the need to **c**ut down on his/her drinking, if people have ever **a**nnoyed him/her by criticizing his / her drinking, if the person has ever felt **g**uilty about drinking, and if the person has ever felt that s/he needed a drink first thing in the morning (**e**ye-opener) 'to steady nerves or to get rid of a hangover'. Two "yes" responses indicate the possibility of alcoholism.

The following parameters were recorded from the charts: Basic demographic data (age sex), alcohol drinking habit, drug (herbal or prescribed) usage, major clinical presentations, laboratory investigation results (HBsAg, and Anti-HCV Ab), type of treatment given and hospital outcomes. Only 117 patient charts fulfilled the different variables for further analysis.

The analyses were performed using descriptive methods. We have also identified the major predisposing and associated factors for chronic liver disease and the final in-hospital outcomes of the cases. Patients fulfilling the CAGE criteria for alcohol use disorder and/or patients with a documented history of drinking to the level of intoxication were considered to have alcoholism or alcohol problem drinking. Cirrhosis was defined based on ultrasound documentation of a coarse shrunken liver with irregular borders, round edges and/or clinical signs of portal hypertension / ascites, splenomegaly, bleeding varices/ and/or laboratory evidence/ low albumin, low platelet count, APRI score >3 in a patient with underlying liver disease. Hepatocellular carcinoma /HCC/ was diagnosed based on ultrasound evidence of liver mass and AFP >200 IU/ML or Tri-phasic CT scan/contrast MRI suggestive of HCC diagnosed by a radiologist or liver biopsy confirming the diagnosis of HCC. Patients were considered to have cryptogenic CLD when no identifiable conventional risk factors for liver disease (either viral infection, drugs, or alcohol use) were identified. The data collection and analyses were conducted using statistical software SPSS version 20.0 (Armonk, NY: IBM Corp.). A p-value < 0.05 was considered significant.

RESULTS

The number of patients with complete profile which were included in the analysis were 117. In both sexes, the most common age group was 26-50 years. The median age was 45 years and chronic viral hepatitis was the major etiology which was associated with CLD. There was no patient with complete data who had auto-immune marker test performed.

Table 1 shows the prevalence of the different spectrum of CLD diagnosis as recorded in the charts. The diagnosis was written from what was recorded in patient charts.

The prevalence of CLD was found to be 2.3 percent among admitted patients in the study period. It was 2.5 % and 1.2% for males and females respectively. (Table 2)

Table 1. Base line characteristics of patients with CLD at St. Paul's Hospital MMC, Addis Ababa, Ethiopia. (N=117)

Variables	Alcoholic liver disease	Chronic viral hepatitis	Cirrhosis	CLD-cryptogenic	Hepatocellular cancer	Total No.	%
Age (years)							
<35	2	22	7	4	1	36	30.7
35-45	0	18	8	1	1	28	24.0
45-65	0	19	13	4	7	43	36.8
65+	0	5	2	0	3	10	8.5
Total	**2**	**64**	**30**	**9**	**12**	**117**	**100.0**
Gender							
Male	2	59	29	6	11	107	91.4
Female	0	5	1	3	1	10	8.6
Total	**2 (1.7%)**	**64 (54.7%)**	**30 (25.6%)**	**9 (7.7%)**	**12 (10.3%)**	**117**	**100.0**

Table. 2. Comparison of admissions due to CLD and other diseases based on gender at St. Paul's Hospital MMC, Addis Ababa, Ethiopia.

Admissions	Sex				Total	
	Male		Female			
	Number	Percent	Number	Percent	Number	Percent
Admissions due to Chronic Liver disease	107	2.5	10	1.2	117	2.3
Admissions due to other medical causes	4170	97.5	795	98.8	4,965	97.7
Total number of admissions	**4277**	**100.0**	**805**	**100.0**	**5,082**	**100.0**

Among CLD cases, 56% had chronic viral hepatitis; also 44.4% of CLD/chronic active hepatitis cases were due to hepatitis B virus (HBV). In addition from these cases 17.9% were positive for antibodies against hepatitis C virus (HCVAb) and 2.6% had combined/mixed infections (positive for HBV and Anti-HCV Ab). About 34% had cirrhosis while 10.3% had hepatocellular carcinoma (HCC). Alcoholic liver disease had a lower prevalence (2%).

The most common clinical presentation at admission was abdominal distension observed in 70% of the patients. Jaundice and upper gastrointestinal bleeding (UGIB) were the second and third most common clinical presentations observed in 33.3% and 10.2% of cases respectively. (Table 3)

All patients were given only supportive treatment during the study period. No antiviral, chemotherapy, steroid treatment, liver transplant or other targeted treatment was given. Supportive treatments included diuretics, salt restriction, peritoneal tap, analgesics therapeutic endoscopy management for bleeding and vitamin supplementation.

Forty one percent of the patients passed away while in hospital. About 17% were discharged with no change in their condition while 28% were documented to have had some improvement.

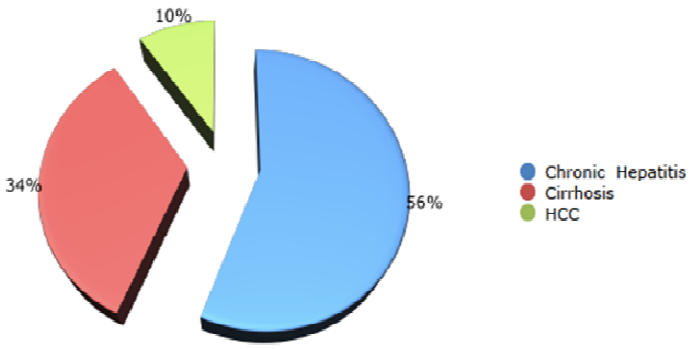

Figure. 1. Spectrum of chronic viral hepatitis among study participants in St. Paul's Hospital MMC (n=76)

Table 3. Frequency distribution of the different clinical presentations of CLD at St. Paul's Hospital MMC (N=117)

Clinical Presentation at Admission	Frequency	Percent
Abdominal distension	82	70
Jaundice	39	33.3
Upper Gastrointestinal bleeding	12	10.2
Fatigue	5	4.3
Right upper quadrant pain	4	3.4
Change in mentation	3	2.6
Weight loss and loss of appetite	1	1

Table.4. Patterns of disposition of patients with CLD at St. Paul's Hospital MMC (n=117)

Patient disposition	Frequency	Percentage
Patients who dead while in hospital	48	41
Improved condition	33	28
Same condition	20	17
Referred	4	3.4
Lost to follow-up	12	1
Total	**117**	**100**

DISCUSSION

A previous study from Ethiopia found that medical admission due to chronic liver disease was 12% (15). In our study, we found a prevalence of 2.3%. The difference could be a reflection of the study setting. The former study had been conducted in three hospitals whereas our study was conducted in a single hospital. The other factor which might have accounted for the lower prevalence at St. Paul's hospital MMC is the fact that during the study period the hospital had no specific liver clinic which could have attracted more patients. Another plausible reason may be the fact that during the study period there were no major treatment changes for patients with liver disease that could have significantly decreased the mortality rate. As a result patients presented late with liver decompensation and hence the increased mortality. To understand the general clinical condition, it is important to conduct a multi-center prospective study that includes patients with a wide spectrum of manifestations who are seeking treatment in outpatient clinics as well as in those who are admitted.

Considering the etiologies of liver disease, other studies have been carried out in the local setting. One of those studies which involved 120 clinically diagnosed CLD patients found HBsAg and anti-HCV antibodies in 35.8% and 22.5% of cases respectively (7). In our study that figure was 44.5% and 17.9% respectively. Moreover dual hepatitis B and C co-infection was 2.5% in the former study and 2.6% in our study. The co-infection rate was comparable but the prevalence of the different viral etiologies could have been due to the increased sample size in the former and also different time profiles.

In CLD patients from Ethiopia the three most common clinical manifestations were darkening of the face and hands, ascites, and weight loss (15). In this study, abdominal distension followed with jaundice and upper gastrointestinal bleeding were the most common clinical presentations. As the study described in this report was a retrospective study, further clinical symptoms could not be ascertained. The increase in upper GI bleeding could also be associated with the availability of endoscopic examinations in this hospital which showed that patients referred for this service were often coming at a late stage of disease. Even though the diagnosis of CLD due to potentially treatable causes, including viral causes, was registered, in our study no treatment was provided beyond supportive care, This included administering of diuretics, vitamin and phospholipids, analgesics and ascites taps during distress. None of the patients were on specific targeted therapy such as anti-virals, surgical resection, and chemotherapy, radiofrequency ablation of small tumors or liver transplantation.

The increased in-hospital mortality is also a reflection of the lack of specific therapies leading to admission at late disease stage when patients are already showing decompensation. Beyond hospital admission and offering supportive care, there are no further treatment options such as shunt surgeries as a bridge to definitive treatment options including liver transplantation as a whole in the country. As there are no specific therapies and no advanced hepatology center in the country, it is unfortunate that we simply have to follow the natural course of the disease. The situation is reminiscent of the pre-ART era when patients with HIV/AIDS having advanced immunosuppression were admitted to hospitals, having developed severe opportunistic infections and resulting in high mortality.

We recommend further multi-center prospective studies with inclusion of a wider clinical spectrum at the out-patient level, as well as in admitted patients, to assess the magnitude of the problem. This study has also shown the urgent need to increase public awareness, avail treatment for viral hepatitis, advice on alcohol moderation, and advocate for the introduction of therapies for liver tumors in the country. Tertiary care hospitals should also have advanced therapeutic options including chemotherapy, endoscopic and surgical management as well as liver transplantation.

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