

MODES OF PRESENTATION AND REASONS OF HOSPITALIZATION FOR PATIENTS WITH DECOMPENSATED CHRONIC LIVER DISEASE AT CIVIL HOSPITAL KARACHI

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ABSTRACT

OBJECTIVE: To determine different modes of presentation and reasons that need hospitalization of patients with established chronic liver disease (CLD) and associate the presenting features with age, and severity of disease with the co-morbidity.

Design: Cross sectional, observational study

Patients And Methods: The study was conducted at Medical Wards of Civil Hospital, Karachi from July, 2006 to December, 2006. Patients who were admitted to the Medical Wards of Civil Hospital, Karachi and who already had established diagnosis of chronic liver disease were included in the study. Patient's charts were reviewed. Demographic information was noted from the charts and for more clarification, patients or their attendants were interviewed. The reason of hospitalization was noted. Different modes of presentations of chronic liver disease were analyzed and were compared with different demographic and clinical characteristics, using chi-square test.

Results: A total of 427 patients' charts were reviewed. Average ages of patients was 48.7 years. Hepatitis C was most common cause of CLD (64.6%). Other causes included Hepatitis B (23.7%), both Hepatitis B and C (3%) and others (8.7%). Majority of patients with CLD were hospitalized due to more than one signs and/or symptoms (63.5%). Common reasons of hospitalization in decreasing order were altered sensorium, hematemesis, abdominal distension, fever, abdominal pain and melena. More signs and symptoms of decompensation were seen in age groups 45-70 years ($p=0.032$). Patients with any co-morbidity presented with greater number of signs and symptoms of decompensation when compared to patients without any co-morbidity ($p=0.002$). No statistically significant association was found when presenting features of CLD were compared with duration of CLD and different co-morbidities.

Conclusion: Hepatitis C was the common cause of CLD in this study. The reasons of hospitalization were a combination of neurological and gastrointestinal clinical features. These features did not associate with the duration of CLD or the cause of CLD.

Key words: Chronic liver disease, Hepatitis, Hospitalization.

INTRODUCTION

Chronic liver disease is a slow process persisting over a long period of time, resulting in a progressive destruction of the liver. Patients with chronic liver disease (CLD) present special challenges to the clinicians. The quality of life is very poor in advanced liver disease.¹ Moreover, patients with CLD constitute a significant burden on the

economy of the country.

Hepatitis B and C are the most common cause of chronic liver disease in this part of the world.^{2,3} Chronic hepatitis B virus afflicts 400 million people worldwide.³ The spectrum of chronic hepatitis B infection ranges from an asymptomatic hepatitis B surface antigen carrier state to chronic hepatitis with progression to cirrhosis and end stage liver disease.^{4,5} It is estimated that 15-40% of patients with chronic hepatitis B infection will progress to cirrhosis.⁶ Approximately 3% of global population are estimated to be chronically infected with Hepatitis C virus

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with an annual incidence of 3 to 4 million new cases globally.⁷

Chronic liver disease is a grave consequence of HBV and HCV, eventually leading to cirrhosis and/or hepatocellular carcinoma.⁷ and decompensated CLD presents with wide spectrum of clinical signs and symptoms. Diagnosis and management of chronic liver disease in timely manner is very crucial for prolonging life expectancy as well as to improve the quality of life of the patients. Diagnosis of decompensated CLD is an integration of clinical acumen and laboratory tests as reflected by Child-Turcotte-Pugh scores for CLD.⁸

Study of the patterns of clinical presentations of decompensated CLD facilitate health care providers to readily suspect and diagnose CLD and intervene accordingly. This may have significant influence on the life of patients both quantitatively and qualitatively. The aim of this study was to determine the different modes of presentation and reasons for hospitalization of patients with established/decompensated chronic liver disease at Civil Hospital, Karachi, and to compare presenting features with different demographic and clinical characteristics.

PATIENTS AND METHODS

It was a descriptive study. Patients admitted with the diagnosis of CLD to Medical ward Unit IV (formerly Unit V) at Civil Hospital, Karachi from July to December, 2006 were included. Inclusion criteria comprised of those patients who already had the established diagnosis of CLD on the basis of history, physical examination (presence of ascites, varices, splenomegaly), laboratory

profile (low serum albumin, increased prothrombin time, altered liver function tests), and sonology (portal hypertension, splenomegaly, varices, ascites), presenting to the hospital with signs and symptoms of decompensation of CLD. There was no exclusion criterion.

Patients' charts were reviewed. Each patient was assigned study code for identification and confidentiality was maintained. Demographic data including age, marital status, address, first language, occupation and educational status were obtained. Second part of questionnaire aimed at collecting clinical information including presenting complaints, reason for current hospitalization, co-morbidities, duration of chronic liver disease, cause of chronic liver disease, history of previous hospitalizations, duration of current hospitalization and other complaints.

Data was entered in epidata version 3.1 and analyzed in SPSS version 11.0. Frequencies and cross tabulations were calculated. Chi-square test was used to compare the association of presenting features of CLD with age, presence of any co-morbidity and the duration of CLD with confidence interval set at 95% and p-value <0.05 was considered as statistically significant.

RESULTS

A total numbers of 427 patient's charts were reviewed. Demographic data showed average age of patients as 48.7 (ranging from 13-85) years. Majority of subjects were married (82.9%). Individuals with Sindhi as first language contributed the largest study population (41.5%). Marked numbers of patients were housewives (40.5%). Majority of subjects were illiterate (74.9%). Table I summarizes the demographic data of the study subjects.

Table I: Demographic data of study population

Marital Status	n (%)	First Language	n (%)	Occupation	n (%)	Educational Status	n (%)
Married	354 (82.9%)	Sindhi	177 (41.5%)	Students	17 (4%)	Illiterate	320 (74.9%)
Single	38 (8.9%)	Urdu	139 (32.6%)	Housewives	173 (40.5%)	Can read and write	12 (2.8%)
Widowed	29 (6.8%)	Punjabi	9 (2.1%)	Farmers	48 (11.2%)	Primary	25 (5.9%)
Not Known	6 (1.9%)	Balochi	59 (13.8%)	Laborers	66 (15.5%)	Middle	15 (3.5%)
Total	427	Pashto	22 (5.2%)	Professionals	8 (1.9%)	Matric	31 (7.3%)
		Seraiki	3 (0.7%)	Unemployed	29 (6.8%)	Intermediate	15 (3.5%)
		Brahavi	7 (1.6%)	Servants	12 (2.8%)	Graduates	6 (1.4%)
		Hindko	3 (0.7%)	Shopkeepers	30 (7%)	Not known	3 (0.7%)
		Other	5 (1.2%)	Drivers	14 (3.3%)	Total	427
		Not known	3 (0.7%)	Hawkers	9 (2.1%)		
		Total	427	Accountants	2 (0.5%)		
				Clerical jobs	13 (3%)		
				Teachers	1 (0.2%)		
				Not known	5 (1.2%)		
				Total	427		

Analysis of clinical information showed that the mean duration of chronic liver disease since the time of diagnosis in our patient sample was 20.4 months (ranging from 1-42 months). Hepatitis C was most common cause of chronic liver disease (64.6%). Other causes included Hepatitis B (23.7%), both Hepatitis B and C (3.0%) and others (8.7%). However, there was no significant association between ages of patients and cause of chronic liver disease found ($p=0.192$). Fifty six percent patients had previous history of hospitalization. Mean duration of current hospitalization was found to be 8.92 days (ranging from 1-60 days). The duration of hospitalization was not associated with the cause or presenting feature of CLD.

Presenting features of decompensated CLD were analyzed as single clinical sign and symptom or combination. Patients presenting with single clinical sign and symptom included fever (2.1%), altered sensorium (12.9%), hematemesis (9.1%), melena (1.6%), abdominal distension (6.6%), abdominal pain (3%) or others (1.2%). Majority of patients presented with more than one sign and symptom (63.46%) as depicted in Table 2.

Table 2: Presenting features of chronic liver disease

Signs and Symptoms	n (%)
Fever	9 (2.1%)
Fever, hematemesis, abdominal distension, abdominal pain, constipation, altered sensorium	161 (37.7%)
Altered sensorium	55 (12.9%)
Altered sensorium, melena, abdominal distension, hematemesis	17 (3.98%)
Hematemesis	39 (9.1%)
Hematemesis, altered sensorium, melena	47 (11.0%)
Melena	7 (1.6%)
Melena, abdominal distension	4 (0.9%)
Abdominal distension	28 (6.6%)
Abdominal distension, abdominal pain	42 (9.8%)
Abdominal pain	13 (3.0%)
Others	5 (1.2%)
Total	427

Majority of the patients in this study did not have any co-morbidity (68.9%). When present, Diabetes mellitus (17.1%) and hypertension (11.2%) were the most frequent co-morbidities. Patients with any co-morbidity presented with greater number of signs and symptoms of decompensation when compared to patients without any co-morbidity ($p=0.002$). However, when number of signs and symptoms were compared among different

co-morbidities like Diabetes mellitus, hypertension, chronic obstructive pulmonary disease (COPD), and ischemic heart disease, no significant association was found between these and presenting features of decompensated chronic liver disease ($p=0.117$). Greater number of signs and symptoms of decompensation were seen between age groups 45-70 years ($p=0.032$). No statistically significant association was found when presenting features of CLD were compared with duration of CLD ($p=0.245$).

DISCUSSION

CLD is marked by the gradual destruction of liver tissue. It has been recognized as one of the most common cause of morbidity and mortality in both developed as well as under developed countries differing by their etiologies. CLD is the 10 leading cause of mortality in the United States and is responsible for deaths of more than 25,000 Americans each year.⁹ Although CLD can not be cured, earliest possible diagnosis and timely intervention is the core of management and prevention of progression of CLD.¹⁰ There is wide spectrum of CLD presentations varying with respect to emergency medical and demographic factors. Major cause of CLD in developed world is attributed to alcoholism. On the other hand, infectious agents are mainly responsible for CLD in developing countries especially South Asia including Pakistan.¹¹ However, etiology of infectious causes varies even within Southeast Asian countries.¹² This study aimed at exploring common clinical presentations among different strata of patients with respect to their clinical as well as demographic characteristics.

In the present study, Hepatitis C followed by hepatitis B were the most frequent causes of CLD which is consistent with another study that is the only one on this subject in Pakistan that could be found.¹²

This study found that patients between age group of 45-70 years had greater number of signs and symptoms, mostly more than one, that made their presentation complicated. Increased number of signs and symptoms can also be extrapolated as greater severity of CLD, that is, patient presenting with one sign or symptom indicate less severe decompensation versus patient with multiple signs and symptoms, a predictor of more severe decompensation. Therefore, early detection of infections leading to CLD is important in elderly since mode of presentation of CLD is more severe in this age group as found in this study. Furthermore, elderly patients have

worse treatment response.¹⁴

It was found that majority of patients presented with more than one clinical sign and symptoms, a feature that is not generally observed. Among those who presented with only one clinical feature, altered sensorium secondary to hepatic encephalopathy was found to be most common which is consistent with an Indian study.¹¹ However, gastrointestinal hemorrhage and other signs of portal hypertension have also been observed as the most common presenting feature of CLD in other studies.^{12,13} One study in Nepal has reported bacterial infections as the most common cause of hospitalization for CLD patients.¹⁵ Mean age of presentation in this study population was 48.67 years much less than seen in other studies that is 58.72 years.^{16,17} One plausible explanation for this could be the acquisition of disease at a later stage of life in Pakistan. Since acquisition in relatively older age is associated with faster progression of chronic liver disease and hence earlier presentation with decompensation compared with acquisition at a younger age appears to be due to slower pace of progression.^{18,19} Most of the patients in the current study presented with more than one clinical feature of CLD, mainly combination of fever, hematemesis, abdominal distension, abdominal pain, constipation and altered sensorium. This multiple presentation of CLD has not been studied so far. This is one of the earliest local studies that explored mode of presentation and co-morbidity. Though majority of patients in this study did not have any co-morbidity, but some patients with co-morbidity present with more signs and symptoms of CLD. However, patiented with different co-morbidities did not show any difference in their mode of presentation.

The study showed that Hepatitis C was by far the most common cause of CLD in all population strata. Hepatitis C virus, as a major cause of CLD has also been reported from other South Asian country; Bangladesh.²⁰ Housewives formed interestingly largest subgroup of occupation in the present sample. We strongly feel the need to further study transmission of causative agent resulting in CLD in different population subgroups. No difference in number of clinical features severity and duration of CLD was found. This finding is supported by above mentioned evidence of rapid progression of CLD when acquired later in life. This reflects a potential reciprocal relationship between mode of presentation and duration of CLD. Since CLD acquired early in life is more likely to progress slowly, thus lesser severity of presenting features and vice versa. Nevertheless, this dimension

of clinical features of CLD needs to be elucidated by a systematic study.

The limitations of this study are, relatively smaller sample size, data derived from a single centre; and the design being a cross-sectional observational one.

CONCLUSION

Hepatitis C was the commonest cause of CLD in patients presenting to the medical wards of Civil Hospital, Karachi. The reasons of hospitalization were combination of neurological and gastrointestinal clinical features. The features did not show significant association with the duration or the cause of CLD. However, the presence of co-morbidity increased the number of presenting features.

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