

Endoscopic Features of Chronic Liver Disease Patients Admitted in a Tertiary Care Hospital in Bangladesh- A Cross Sectional Study

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Abstract

Background: Chronic liver disease is a major burden with increased rates of morbidity & mortality worldwide. The role of endoscopy in liver disease is both diagnostic and interventional and a key to achieving a better outcome for the disease. Multiple presentations of CLD can be found at endoscopic evaluation. This study aimed at evaluation of the pattern of presentation of the endoscopic features of the admitted patients in Dhaka Medical College Hospital.

Materials & Methods: This cross-sectional study was conducted over 100 adult patients of Chronic Liver Disease in Dhaka Medical College Hospital, from 1st of July 2019 to 31st of December 2019. After getting written informed consent, a detailed history, clinical examination, relevant investigations and upper GI endoscopy was carried out in each patient. All the methods in the present study

were carried out following the ethical guidelines of the 1975 Declaration of Helsinki. Data were recorded in separated case record form and analyzed by IBM SPSS version 26.

Results: Our study found that majority (43%) of the patients were aged between 41 to 50 years; 69% were male & 31% female. Mostly Hepatitis B virus infection was the etiology. The commonest (38%) endoscopic finding being the presence of both esophageal & gastric varices along with Grade III varices encompassing the largest entity (63.4%).

Conclusion: More than half of the patients with gastro-esophageal varices has Grade III varices putting them in higher risk of morbidity and mortality.

Keywords: Chronic Liver Disease, Portal Hypertension, Varices, Endoscopic features of CLD, Upper GI bleeding.

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Introduction:

Chronic liver disease (CLD) is defined as when persistent inflammation in the liver causes progressive destruction of normal liver functions for at least 6 months, commonly associated with fibrotic regeneration of the liver tissue with the potential to progress to cirrhosis and end stage liver disease.^{1,2}

Cirrhosis of any etiology such as chronic hepatitis, Alcoholic liver disease (ALD), non-alcoholic steatohepatitis (NASH), cholestatic liver disease, and metabolic liver disease

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comprise CLD.¹ Worldwide estimations show that 844 million people have CLDs, with a mortality rate of 2 million deaths per year, signifying a 46% increase in CLD mortality in the world between 1980 to 2013.^{3,4} Most of this increase in CLD mortality has been reported from the low and low-middle income countries of Asia and Africa.^{3,5} Among the causes of CLD hepatotropic viruses HBV and HCV is highly prevalent as a cause of CLD in most Asian, African, and Latin American countries.⁶ Although Non Alcoholic fatty liver disease which is now called metabolic associated fatty liver disease is an emergent cause of CLD in this region and also in western countries.

CLD, no matter what is the underlying cause it follows a common pathway through activation of hepatic stellate cells which produce extracellular matrix proteins, leading to fibrosis and ultimately cirrhosis². The clinical manifestations of CLD is diverse from being asymptomatic to decompensation of liver function. There are some stigmata

of CLD such as: Palmar erythema, spider naevi, Gynaecomastia or breast atrophy, decreased body hair and sign such as Dupuytren's contracture, xanthelasma, hepatic facies, generalized pigmentation, oedema, clubbing, shrunken/enlarged liver.⁷ The major complications of cirrhosis include portal hypertension, hepatic encephalopathy (HE), hepato-pulmonary hypertension, hepatocellular carcinoma, hepato-renal syndrome, spontaneous bacterial peritonitis, and coagulation disorders.⁸ Apart from the liver function test, Ultrasonography of hepatobiliary system, endoscopy of upper GIT endoscopy is the pivotal investigation for CLD. The role of endoscopy in liver disease is both diagnostic and interventional. Endoscopic procedure affords the views of the esophagus, stomach and proximal duodenum. Although it has a broad role in general gastrointestinal (GI) complaints, it has several applications specific to patients with chronic liver disease, usually for conditions causing GI bleeding.⁹ This is important given that bleeding is a significant source of morbidity and mortality in advanced liver disease. Portal hypertension associated with cirrhosis plays a role in the development of gastroesophageal varices (GEV), portal hypertensive gastropathy (PHG), and gastric antral vascular ectasia (GAVE). All of these leave patients susceptible to bleeding.^{10 11} Recent guidelines have confirmed endoscopy as the only method to accurately assess GEV features and to estimate the individual risk of bleeding in patients.¹² Portal hypertensive gastropathy (PHG) occurs in 50% of patients with portal hypertension and may reflect the severity of liver disease. The diagnosis is established by endoscopy, with characteristic appearances ranging from snake-skin mosaicism (mild PHG) to bulging red and brown spots (severe PHG).¹³ On the other hand, GAVE is present in 2% to 3% of patients with cirrhosis and is also associated with other conditions such as connective tissue diseases and chronic renal failure.¹⁴ Endoscopically, GAVE can have the appearance of "watermelon stomach," with erythematous stripes projecting radially from the pylorus or as diffuse red spots representing dilated antral blood vessels. GAVE, similar to PHG, most commonly presents as chronic anemia, but unlike PHG, its management is primarily endoscopic.¹⁵ It is recommended that all patients undergo endoscopy to assess the presence and the size of varices at the time of the diagnosis of cirrhosis. Currently, the American Association for the Study of the Liver (AASLD) recommends that, if no varices are present at index endoscopy, this should be repeated at 2-3 years in compensated cirrhosis and annually in decompensated cirrhosis.¹⁶

Materials & Methods:

This cross-sectional study included 100 patients of diagnosed cases of CLD patients admitted in Medicine unit of Dhaka Medical College Hospital over the time period of 1st July 2019 to 31st December 2019. All patients were e"18 years age with features of chronic liver disease at admission.

Patients with severe illness, malignancy, acute peritonitis & unstable co-morbidities were excluded.

This study was approved by the Ethical Review Committee of Dhaka Medical College Hospital.

All participants provided written informed consent. All the methods in the present study were carried out following the ethical guidelines of the 1975 Declaration of Helsinki and its later amendment.

Data Analysis: Following data collection using a semi-structured questionnaire containing socio-demographic parameters and relevant information of the disease, these were assessed for accuracy, consistency and tabulated using the SPSS/PC 20 software. Statistical significance is set as 95% confidence level at 5% acceptable error level. Data were presented as the proportion of valid cases for discrete variables and as means \pm standard deviations and/or medians for continuous variables. Differences in baseline characteristics were compared using Pearson's chi square test. A p value of <0.05 was considered significant.

Results: The commonest endoscopic finding was presence of both esophageal & gastric varices which was about 38%. It was followed by Gastritis 19%, Portal hypertensive gastropathy 12% and 14% are mixed findings. Another 12% patients had normal endoscopic finding (Table I).

Table-1: Endoscopic findings of Chronic liver disease patients under study (n=100)

Findings	Frequency	Percentage
Varices		
Both esophageal and gastric varices	38	38.0 %
Esophageal varices only	3	4.0%
Gastric varices only	1	1.0%
Other than varices		
Portal hypertensive gastropathy	12	12.0 %
Gastritis	19	19.0 %
Hiatus hernia	1	1 %
Mixed findings*	14	14.0 %
Normal	12	12.0 %

Values expressed in percentage (%)

*Mixed findings: presence of more than one pathology

Among the study population 63.4 % of esophageal varices were grade III where as 26.8% were of grade II and only 9.8% are of grade I (Table II).

Table 2: Grading of varices in endoscopic findings (n=41)

Grade	Frequency	Percentage (%)
Grade I	4	9.8%
Grade II	11	26.8%
Grade III	26	63.4%
Total	41	100.0%

Values expressed in percentage (%).

Discussion:

In endoscopic procedure among all 100 respondents of our study, the major (42%) findings were presence of varices either esophageal (3.0%) or gastric (1.0%) or both (38.0%). Other findings in endoscopy were gastritis (19%), portal hypertensive gastropathy (12%) and mixed findings were seen in 14% of the respondents. Endoscopic findings of 12% of total study population remains normal.

In a retrospective study by Sarker *et al* in India the endoscopic findings of CLD patients shows that, the most commonly identified endoscopic findings were esophageal varices (44%), gastritis (36%), portal hypertensive gastropathy (36%), hiatus hernia (12%). Gastric varix was identified in 4% of patients. Endoscopy findings were normal in 12% patients. Among all patients 16 patients had mixed findings and few other findings (like duodenitis, esophagitis, esophageal candidiasis, hemorrhagic spots etc)¹⁷.

Regarding the grades of varices present in our study population, most of the varices were grade III (63.4%) where as 26.8% were of grade II and only 9.8% were of grade I. In a retrospective study by Purbey *et al* in Nepal showed that, 30.77% of esophageal varices in CLD patients were grade II, 53.84% are grade-III and rest 15.38% were grade-I¹⁸. This result were quite similar to us.

Upper GIT bleeding in cirrhotic patients is a recurrent and often life threatening complication. The actual cause must be identified for proper management. Endoscopy is the diagnostic tool of choice in this context; it can be performed even in case of acute and severe bleeding episode. Therefore knowledge of endoscopic findings in case of varices and other non variceal cause of bleeding in cirrhotic patients is a must.

Conclusion:

Chronic Liver Disease encompasses a large number of conditions having different etiologies and existing on a continuum between hepatitis and cirrhosis¹⁹. Upper GI endoscopy has a broad role in general gastrointestinal complaints, it has several applications specific to patients

with chronic liver disease, and usually for conditions causing GI bleeding²⁰. This is important given that bleeding is a significant source of morbidity and mortality in advanced liver disease. However, it is important to note that patients with chronic liver disease can also develop GI bleeding due to causes unrelated to their cirrhosis, such as peptic ulcer disease and gastritis.

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