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PEPTIC ULCER DISEASE IN CIRRHOSIS

Gastroenterology

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ABSTRACT

Introduction

Peptic ulcer bleed (PUB) is associated with increased mortality in both compensated and decompensated cirrhosis. Knowing the frequency of Peptic Ulcer Disease (PUD) and accurate documentation of bleeding source will avoid inappropriate therapeutic procedure in patients with cirrhosis and gastrointestinal bleeding while missing the diagnosis results in fatal outcome. This study is conducted to describe the prevalence of PUD in cirrhosis .

Method

This is a retrospective study that included 199 patients with chronic liver disease (CLD) referred to upper gastrointestinal (UGI) endoscopy during last 6 months. The primary end point was to describe prevalence of PUD among these patients. The secondary end point was to evaluate the association between PUD, child's class and portal hypertensive gastropathy (PHG)

Result

The prevalence of PUD in patients with cirrhosis was 32.1 % and its prevalence according to Child Pugh A, B and C was 18.8, 42.2 and 39.1 % respectively. The occurrence of PUD with respect to presence and absence of PHG is 34.2 and 26 % respectively.

Conclusion

There is high prevalence of PUD in CLD. However, there is no statistically significant correlation between PUD, Child's class and PHG.

KEYWORDS

Chronic Liver Disease (CLD); Portal Hypertensive Gastropathy (PHG); Peptic Ulcer Bleed (PUB).

INTRODUCTION

Cirrhosis is the final outcome of all chronic liver disease. Hepatocellular dysfunction and Portal Hypertension results in number of complications associated with decreased life expectancy.1 Different studies have showed prevalence of Peptic Ulcer Disease (PUD) ranging from 10 - 49 % in cirrhosis 2,3 and is not included as major complication. Upper Gastrointestinal (UGI) haemorrhage is believed to occur from gastroesophageal varices, ectopic varices, portal hypertensive gastropathy, gastric vascular ectasia but studies have shown only 50% bled from varices .4 Peptic ulcer bleed (PUB) is associated with increased mortality in both compensated and decompensated cirrhosis.5 Liver cirrhosis is associated with long term risk of recurrent peptic ulcer bleed.6 Risk of PUB in CLD remains higher with HR of 4.22 even after adjusting for age, gender, economic status, comorbidities like hypertension, diabetes, coronary heart disease, chronic obstructive pulmonary disease, chronic renal disease and history of uncomplicated PUD and ulcerogenic medication.7 This association may be related to impaired mucosal defense 8, bleeding tendency,9 endovascular dysfunction 10 and hyperdynamic circulation.11 However, PUD in cirrhotics has not been studied among Nepalese population . Knowing the frequency of PUD and accurate documentation of bleeding source will avoid inappropriate therapeutic procedure in patients with cirrhosis and gastrointestinal bleeding while missing the diagnosis results in fatal outcome of potentially lifesaving situation. This study aims to describe prevalence of PUD among these patients. The secondary end point was to evaluate the association between PUD, child's class and portal hypertensive gastropathy (PHG).

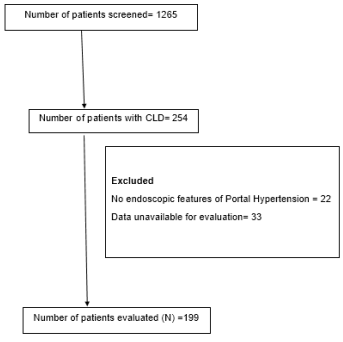
METHODOLOGY

It is a retrospective study carried out at B.P. Koirala Institute of Health Sciences (BPKIHS), Nepal. All patients with chronic liver disease (CLD) referred to endoscopic unit for upper gastrointestinal (UGI) endoscopy during last 6 months were enrolled in this study. Data was collected from registry maintained in endoscopy unit. This study was approved by Institute Review Committee (IRC) of BPKIHS. We searched for the diagnosis of Chronic liver disease (CLD) in registry and those with diagnosis of CLD and UGI endoscopy features suggestive of CLD i.e, esophageal varices, gastric varices, PHG, duodenal varices were included in the study. The endoscopic diagnosis of definite ulcer was only recorded as PUD. Based on hospital identification number other biochemical reports i.e; liver function test, PT/INR were collected.

Data was collected in the semi-structured proforma and entered in Microsoft Office excel 2013 and was analyzed with SPSS (Statistical Package for Social Sciences) version 21. Data were expressed as proportions for discrete variables and mean ± Standard deviation for continuous variables. Difference between the proportion was tested by chi square test.

Results

Figure 1.Screening of study subjects



One hundred ninety-nine patients were included in the study with mean age of 53.26 years. 54.8% patients were male. 52.8% patients were referred for screening of varices. UGI bleed accounted for 46.7% of patients. 23.6 % were compensated Child A cirrhosis. Decompensated Child B and C accounted for 46.7% and 29.6% respectively. Esophageal varices was present alone in 22.1%. It was associated with portal hypertensive gastropathy in 77.9% of patients

and gastric varices were present in 11.1%. Variceal band ligation was done in 39.7%. The diagnosis of PUD was based on the endoscopic detection of a gastric or duodenal mucosal lesion with a definite border and crater. PUD was present in 32.1% of patients. Gastric ulcers accounted for 22.6% out of which 17.7% have multiple gastric ulcers and 3.5 % have both gastric and duodenal ulcers. Duodenal ulcer alone was present in 6 % and 1 had pre-pyloric ulcer. The prevalence of PUD was 32.1 % and its prevalence according to Child Pugh A, B and C was 18.8, 42.2 and 39.1 % respectively. The occurrence of PUD with respect to presence and absence of gastropathy is 34.2 and 26 % respectively. 22.9% referred for screening of varices and 41.9% patients presenting with UGI bleed have PUD.

Table 1. Location of PUD with Child's class

	Child's A N (%)	Child's B N (%)	Child's C N (%)
Gastric Ulcer	9 (20)	20 (44.4)	16 (35.6)
Duodenal Ulcer	1 (8.3)	4 (33.3)	7 (58.3)
Gastric and duodenal ulcer	2 (28.6)	3 (42.9)	2 (28.6)

Table 2. Correlation of PUD with Child's class and PHG

		Ulcer		P value
		Present N (%)	Absent N (%)	
Child's A		12 (18.8)	35 (25.9)	0.123
Child's B		27 (42.2)	66 (48.9)	
Child's C		25 (39.1)	34 (25.2)	
PHG	Yes	51 (34.2)	98 (65.8)	0.281
	No	13 (26)	37 (74)	

DISCUSSION

Prevalence of peptic ulcer disease is increased significantly in patients with chronic liver disease. Study by Siringo et al revealed point prevalence of PUD of 11.7% with an annual incidence rate of 4.3% in cirrhotic patients.12This is the first study from Nepal reporting prevalence of PUD among CLD patients and shows prevalence of 32.1%.

Dong Joon Kim's study showed that prevalence of PUD increases linearly as severity of liver disease increases with prevalence of 22.3%, 21.0%, and 31.3% among Child's A, B and C respectively.2The present study also shows prevalence of PUD increases with Child's progression, although this different prevalence among various Child's class was not significant statistically. Observations are also inconsistent among studies to allude whether incidence and severity of peptic ulcer disease is greater in decompensated than compensated cirrhosis or is equal.13,14Similarly, association of PHG with PUD occurrence was not statistically significant in this study.

H. pylori and NSAIDS has been considered as risk factors for PUD. However, epidemiological studies have shown that 50% of PUD have none of these predispositions.15The major limitation of this study was lack of data regarding H pylori. A study from Korea hypothesized that in cirrhosis stomach milieu is not suitable for growth of H pylori and becomes more hostile as liver disease progresses.2 Bhargava N et al revealed gastric mucosa in face of portal hypertension displays marked vascular dilation and congestion such that H pylori infection rate was 18.8 % compared with 75.5% infection rate in controls who don't have portal hypertension and gastric vascular congestion. Hence they proposed factors other than H pylori may be critical for PUD in these subset of patients.16 Lo GH et al unveiled higher ulcer recurrence rate even after successful H pylori eradication. Thus eradication therapy has no impact on H pylori cured, persistent H pylori positive and H pylori negative subgroups. Investigators also insinuate that testing for H Pylori may not be necessary in patients with cirrhosis and PUD.17
We don't have epidemiological data regarding H pylori prevalence in patients with cirrhosis. Thus, increased PUD prevalence in cirrhosis in this population cannot be attributed to effects portal hypertension alone. It seems prudent to test for H pylori in this population.

CONCLUSION

There is high prevalence of PUD in CLD. However, there is no statistically significant correlation between PUD, Child's class and PHG.

Acknowledgement
Conflict of interest: None declared

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