

Frequency of different types of gastric varices in patients with cirrhosis due to chronic hepatitis C

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Abstract

Objective: To determine the frequency of different types of gastric varices in patients with hepatitis C virus-related cirrhosis.

Methods: The observational cross-sectional study was conducted from August 2014 to August 2015 at Aziz Bhatti Shaheed Teaching Hospital, Gujrat, Pakistan, using non-probability consecutive sampling. Patients having liver cirrhosis only due to chronic hepatitis C virus, portal vein diameter >12mm or spleen size >12cm in long axis and ascites with no previous history of variceal banding were included. Patients having cirrhosis due to other causes were excluded. Data was collected using a proforma that was filled by taking history, laboratory studies, abdominal ultrasound and upper gastrointestinal endoscopy. Gastric varices were classified using Sarin classification. SPSS 20 was used for statistical analysis.

Results: Out of 205 patients undergoing esophago-gastroduodenoscopy, 122(59.5%) were male and 83(40.5%) were female with an overall mean age of 49.5 ± 7.49 years. Gastric varices were present in 30(14.6%) patients. Among them, type 1 was present in 23(76.71%), type 2 in 6(19.86%) and isolated gastric varices type 1 in 3(10.27%). Isolated gastric varices type 2 was not present in any patient.

Conclusion: Gastric varices were present in minority of patients undergoing esophago-gastroduodenoscopy, and among them, gastroesophageal varices type 1 was the most common, while isolated gastric varices type 2 was not present in any patient.

Keywords: Cirrhosis, Gastric varices, HCV. (JPMA 66: 1462; 2016)

Introduction

Hepatitis C virus (HCV) is a major aetiology of chronic liver disease and¹ about 130-150 million people have chronic hepatitis C infection worldwide.² About 500,000 die due to HCV-related liver diseases annually.³ The seroprevalence of HCV is about 4-12.5% in the general population of Pakistan^{4,5} which translates into more than 20 million people.

Gastroesophageal varices are present in almost half of patients with cirrhosis at the time of diagnosis⁶ with incidence of 7% per year.^{7,8} Gastric varices are less prevalent than oesophageal varices and are present in 5%-33% of patients with portal hypertension and the reported incidence of bleeding from gastric varices is about 25% in 2 years compared to 64% in oesophageal varices.⁹ Bleeding from gastric varices is generally more severe having more transfusion requirements and is associated with higher morbidity and mortality than oesophageal varices.¹⁰

Due to high prevalence of HCV-related cirrhosis and

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varices it is necessary to determine the frequency of different types of gastric varices. Bleeding from gastric varices differ in morbidity, mortality, severity of bleed and treatment modalities from oesophageal varices.

The current study was planned to determine the frequency of different types of gastric varices in patients with HCV-related cirrhosis.

Patients and Methods

The observational cross-sectional study was conducted from August 2014 to August 2015 at Aziz Bhatti Shaheed Teaching Hospital, Gujrat, Pakistan, using non-probability consecutive sampling. After approval from the institutional ethics committee, sample size was calculated using World Health Organisation (WHO) calculator¹¹ using prevalence of gastric varices with 95% confidence interval (CI), 5% margin of error. Patients having liver cirrhosis only due to chronic HCV, portal vein diameter >12mm or spleen size >12cm in long axis and ascites with no previous history of variceal banding were included in study and informed consent was obtained from each of them. Patients having cirrhosis due to other causes were excluded. Data was collected using a proforma that was filled up by taking history, laboratory studies, ultrasound abdomen and upper gastrointestinal (GI) endoscopy.

Liver cirrhosis was defined as moderate to markedly coarse echotexture of liver on abdominal ultrasound. Portal vein diameter and spleen size and presence of moderate to marked ascites were also determined using abdomen ultrasound which was done by consultant radiologist (Toshiba Nemio 3). HCV was confirmed by enzyme-linked immunosorbent assay (ELISA) and other aetiologies were excluded.

Gastric varices were classified according to Sarin classification⁹ on endoscopy (Pentax EPK-i 5000) by a consultant gastroenterologist. Gastroesophageal varices (GOVs) were classified as type 1 (GOV1) which are extension of oesophageal varices 2-5cm below gastroesophageal junction along lesser curve, whereas type 2 (GOV2) are extension of oesophageal varices towards cardia and fundus of stomach. The isolated gastric varices (IGVs) were classified as type 1 (IGV1) which are varices in the fundus of stomach in the absence of oesophageal varices, whereas isolated varices anywhere in the stomach were classified as type 2 (IGV2).¹⁰

Data analysis was done using SPSS 20. Results were expressed as mean $\pm$ standard deviation (SD) for continuous variables such as age, liver span, spleen size, portal vein diameter, and frequencies and percentage for categorical data such as gender, cirrhosis, ascites and types of varices.

Results

Out of 205 patients, 122(59.5%) were male and 83(40.5%) were female with overall mean age of 49.5 ± 7.49 years. The

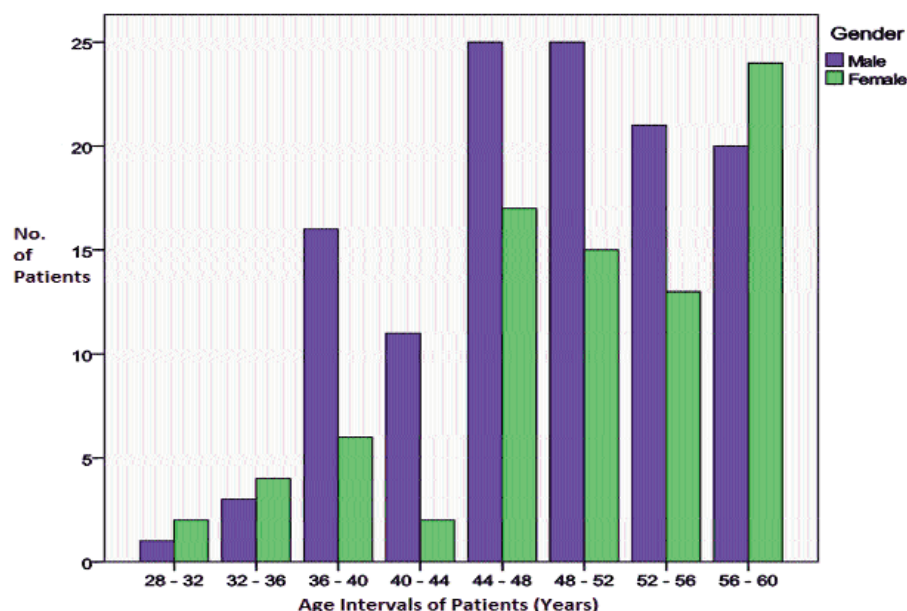


Figure-1: Gender distribution according to age.

mean age among males was 48.9 ± 7.18 years and among females was 50.36 ± 7.89 years. Majority of patients were over 40 years of age (Figure-1).

Overall, 171(83.5%) patients had moderate to markedly coarse echotexture of liver with regular margins and 34(16.6%) had irregular margins. The mean liver span was 7.52 ± 0.96 cm. All patients (100%) had moderate to severe ascites. The mean portal vein diameter was 12.82 ± 1.92 mm and mean spleen size was 14.44 ± 1.96 cm. Oesophageal varices were present in all patients (100%) (Table).

Gastric varices were present in 30(14.6%) patients; 19(63.3%) males and 11(36.6%) females. In patients with gastric varices, GOV1 were present in 23(76.71%), GOV2 in 6(19.86%) and IGV1 in 3(10.27%). IGV2 was not present in

Table: Demographic Characteristics.

Patient Characteristics			
Patients	Total 205	Male 122 (59.5%)	Female 83 (40.5%)
Mean Age	49.5 ± 7.49 years	Male 48.9 ± 7.18 years	Females 50.36 ± 7.89 years
Mean Liver Span		7.52 ± 0.96 cm	
Liver Echotexture	171(83.5%) Moderate to markedly coarse echotexture with regular margins		34(16.6%) Coarse liver echotexture with irregular margins
Mean Portal Vein Diameter		12.82 ± 1.92 mm	
Mean Spleen Size		14.44 ± 1.96 cm	
Ascites		100% moderate to severe	
Oesophageal Varices		100%	

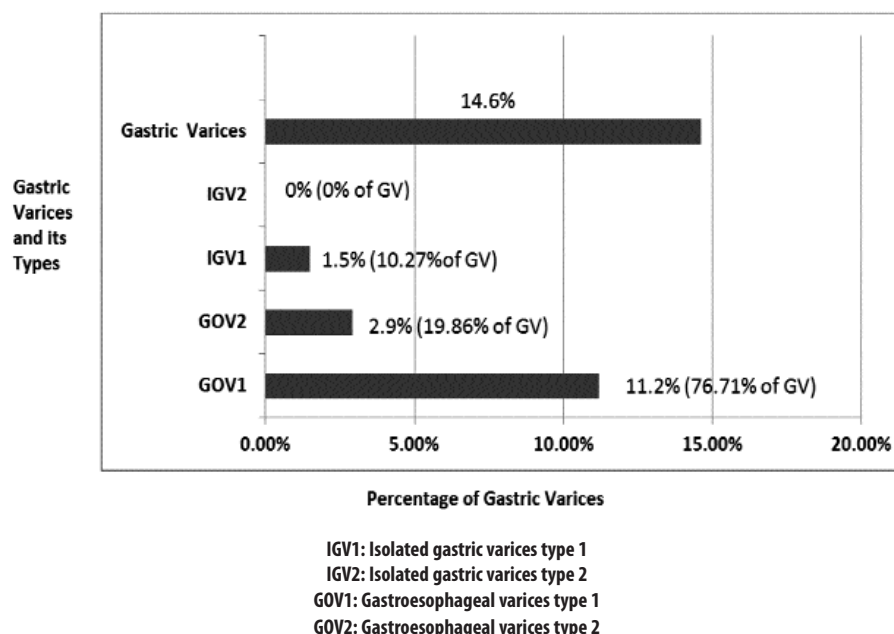


Figure-2: Frequency of different types of gastric varices.

any patient (Figure-2).

Discussion

Gastric varices are associated with high mortality and morbidity¹⁰ and bleed less frequently but more severely.¹² In our study we evaluated the frequency of different types of gastric varices in patients with liver cirrhosis only due to chronic HCV infection. Out of 205 patients, gastric varices were present in 14.6% patients. In patients with gastric varices, GOV1 was present in 76.71%, GOV2 in 19.86% and IGV1 in 10.27%. IGV2 were not present in any patient.

According to a study, GOV1 represent almost 75%, GOV2 21%, IGV1 less than 2%, and IGV2 4% of all gastric varices and the prevalence of gastric varices is 17%.⁹ Our findings are comparable with that study in case of GOV1 (76.71% vs 75%) and GOV2 (19.86% vs 21%) but differ in IGV1 (10.27% vs <2%) and IGV2 (0% vs 4%). The prevalence of gastric varices is also comparable (14.6% vs 17%). The difference may be due to aetiology of varices as the other study included patients with cirrhosis, non-cirrhotic portal fibrosis, extrahepatic portal vein obstruction and hepatic venous outflow obstruction compared to our study which included patients only with cirrhosis due to chronic HCV infection.

Another study demonstrated that gastric varices were present in 15.3% patients with variceal haemorrhage¹³ which is comparable to our study (14.6%) but it did not mention the cause as cirrhosis which was HCV in our

study.

A study on prevalence of gastric varices and results of sclerotherapy with N-butyl 2 cyanoacrylate for controlling acute gastric variceal bleeding at Aga Khan University Hospital, Karachi¹⁴ found that gastric varices were present in 15% (vs 14.6% in our study) of patients with portal hypertension. We compared frequency only in non-bleeding patients of that study as only non-bleeders were included in our study. The frequency of gastric varices in non-bleeding patients in that study was GOV1 45.3% (vs 76.71%), GOV2 34.1% (vs 19.86%), IGV1 22.9% (vs 10.27%) and IGV2 6.5% (vs 0%). The aetiology in that study was hepatitis B virus (HBV), HCV, non-B non-C cirrhosis, alcoholic liver disease, non-cirrhotic portal hypertension and Wilson's

disease compared to HCV alone in our study.

Although gastric varices are more prevalent in patients with non-cirrhotic portal hypertension, but a significant percentage of cirrhotic patients have gastric varices. Bleeding from gastric varices is more severe and has high morbidity and mortality and the outcome of patient becomes worse in the presence of cirrhosis due to HCV. This necessitates careful screening while doing upper GI endoscopy in patients with HCV-related cirrhosis as gastric varices differ in treatment options as well as mortality and morbidity compared to oesophageal varices only.

Conclusion

Gastric varices were present in minority of patients undergoing esophago-gastroduodenoscopy, and among them, gastroesophageal varices type 1 was the most common, while isolated gastric varices type 2 was not present in any patient.

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Conflict of Interest: None.

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