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CIRRHOTIC PATIENTS;

PREVALENCE OF PORTAL HYPERTENSIVE GASTROPATHY UNDERGOING UPPER GASTROINTESTINAL ENDOSCOPY AT A TERTIARY CARE HOSPITAL IN SHAHEED BENAZEERABAD

draasahito1111@gmail.com

Dr. Abdul Aziz Sahto[1], Dr. Amir Shahzad[2], Dr. Mahnaz Faiz Sahito[3]

1. FCPS (Medicine), (MSc GASRTO) Assistant Professor of Medicine Peoples University of Medical & Health Sciences for Women Nawabshah, Sindh, Pakistan.
2. Assistant Professor Department of Medicine Peoples University of Medical & Health Sciences for Women Nawabshah, Sindh, Pakistan.
3. Post-graduate Student Medical Unit II Department of Medicine Peoples University of Medical & Health Sciences for Women Nawabshah, Sindh, Pakistan.

Correspondence Address:
Dr. Abdul Aziz Sahto
FCPS (Medicine), (MSc GASRTO)
Assistant Professor of Medicine
Peoples University of Medical & Health
Sciences for Women
Nawabshah, Sindh, Pakistan
draasahito1111@gmail.com

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ABSTRACT… Objectives: The aim behind this study was to determine the prevalence of portal hypertensive gastropathy in cirrhotic patients undergoing upper gastrointestinal endoscopy at a tertiary care hospital in Shaheed Benazeerabad. **Study Design:** Hospital based cross sectional study. **Setting:** Medicine Department of People's Medical University, Shaheed Benazeerabad. **Period:** Six months from 20th August 2014 to 21st February 2015. **Material and Methods:** A total of 115 patients presenting with variceal bleeding (having history of liver cirrhosis since ≥2 years) and who further was undergoing diagnostic Endoscopic gastrodudenoscopy were enrolled in the study. All endoscopies were performed by the endoscopists using a GIFQ 160 Gastroscope (Olympus, Tokyo, Japan) in the left lateral position. The presence or absence of PH gastropathy (outcome variable) was noted at each endoscopy. SPSS version 17.0 was used to analyze the collected data. **Results:** The average age of the patients was 39.98±11.02 years and mean duration of liver cirrhosis was 4.62±1.5 years. There were 70 (60.87%) male and 45 (39.13%) were female. Regarding socioeconomic status, most of the cases were in lower and middle class. Frequency of portal hypertensive gastropathy (PHG) in patients of liver cirrhosis undergoing upper gastrointestinal endoscopy was observed in 60% (69/115) cases. **Conclusion:** The frequency of PHG was 60% in the studied group of cirrhotic patients. This concludes that if in the liver cirrhosis patients early identification and appropriate therapeutic measures of PHG is taken the morbidity in these patients can be decreased.

Key words: Cirrhosis, Portal hypertension, Liver failure, gastrointestinal endoscopy.

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INTRODUCTION

Portal Hypertension (PH) is defined as the elevation of hepatic venous pressure gradient (HVPG) above 5mmHg.[1] The pathological mechanism behind this is the presence of increased resistance to the intrahepatic blood flow to fibrosis along with increased splanchnic blood flow secondary to vasodilatation within the splanchnic vascular bed. PH causes many complications like portal hypertensive gastropathy, variceal bleeding, spontaneous bacterial peritonitis, and hepatorenal syndrome and is the leading cause of death and of liver transplantation in patients with cirrhosis. Of above complications, the esophageal varices and PH gastropathy are two which lead to gastrointestinal bleeding. Gastric mucosal lesions like portal gastropathy are common in PH which in fact cause acute and chronic blood loss and insidiously lead to anemia, or sometime they cause sudden, severe and occasionally fatal hemorrhage.[2-5]

Cirrhosis of liver is a major cause of morbidity and mortality around the globe. It is in the top 10 causes of deaths in United States due to common use of alcohol. In Pakistan due to high prevalence of Hepatitis B & C, the liver cirrhosis is not an uncommon diagnosis at tertiary care hospitals. Prevalence of liver cirrhosis in patients with viral hepatitis was reported to be 55% in Pakistan. Extensive fibrogenic processes occurring in the liver cirrhosis ultimately results in liver failure and portal hypertension (PH). 90% of the cases with portal hypertension have underlying cirrhosis of liver.[6-11]

Besides many other indications, the upper gastrointestinal endoscopy for diagnostic purposes is recommended if PH is suspected, and particularly when cirrhosis is diagnosed, to look for any esophageal / gastric varices & gastropathy. Keeping these facts & figures in mind it is of utmost importance that development of PH gastropathy should be monitored in patients who have been diagnosed with liver cirrhosis for 2 years or more period.[8]

In the liver cirrhosis patients if the pretending complications are identified as soon as possible and taken care of with appropriate therapeutic measures much of the morbidity in these patients can be decreased. PH gastropathy and resulting variceal hemorrhage can be reduced if identified early & treated with measures like sclerotherapy and band ligation. Upon thorough literature review there was only scant research done which was limited to urban areas. No study had investigated the magnitude of burden on PH gastropathy in liver cirrhosis patient in remote areas with rural locality. This provides a potent rationale for conductions of this study. The result of this study will help early identifying & treating the PH gastropathy.

PATIENTS AND METHODS

A cross sectional hospital based study has been conducted through non-probability convenience sampling technique in a medicine department of People's Medical University, Shaheed Benazeerabad between the periods of six months from 20th August 2014 to 21st February 2015.

Diagnosed cases of liver cirrhosis (those who diagnosed atleast two years back) with age more than 25 and less than 65 years of both male and female along with underlying child Pugh class B and C.

Patients previous record showing gastrointestinal bleeding secondary to varices, beta blocker use, history of porto-systemic shunt placements, cardiac diseases & Pulmonary hypertension, co-existing illnesses such as lymphoma, leukemia, co-existing infections such as typhoid, malaria and Schistosomiasis, taking NSAIDs / steroids from last 4 weeks, portal vein thrombosis, splenic vein thrombosis, congestive splenomegaly (Banti's syndrome), congenital hepatic fibrosis, Budd-Chiari syndrome, and inferior vena cava webs and thrombosis were not included in our study.

Conduction of the study was initiated after getting ethical approval from the committee from the site of data collection. Patients presenting with variceal bleeding (having history of liver cirrhosis since >2 years) and who further was undergoing diagnostic Endoscopic gastrodudenoscopy was enrolled in the study after selecting them as per selection criteria and taking consent from them. All endoscopies was performed by the endoscopists with at least 5 years of experience, using a GIFQ 160 Gastroscope (Olympus, Tokyo, Japan) in the left lateral position after obtaining a written informed consent from the patient. The presence or absence of PH gastropathy (outcome variable) was noted at each endoscopy. A patient with esophageal varices was treated by injection sclera therapy as per standard protocol of the institution. The investigator collected the data on pre-defined proforma. Beside outcome variables (frequency of PH gastropathy), the proforma includes demographic variables of age, gender and socioeconomic status. Other variables are duration of cirrhosis.

DATA ANALYSIS

Data was entered into SPSS version 17. Continuous variables like age and duration of cirrhosis was analyzed as mean ± Standard deviation. Frequencies & percentages were expressed for gender, socioeconomic status and PH gastropathy (outcome variable).

Age, gender, socioeconomic status, duration of cirrhosis was stratified to analyze the effect of these on the outcome variable and was tested using Chi-square test and a P value <0.05 was considered as statistically significant.

RESULTS

In this study we have conducted data from 115

patients those who diagnosed case of liver cirrhosis. Age trend of the case is presented in Figure-1. The average age of the patients was 39.98±11.02 years and mean duration of liver cirrhosis was 4.62±1.5 years as given in Table-I. There were 70 (60.87%) male and 45(39.13%) were female. Regarding socioeconomic status, most of the cases were in lower and middle class.

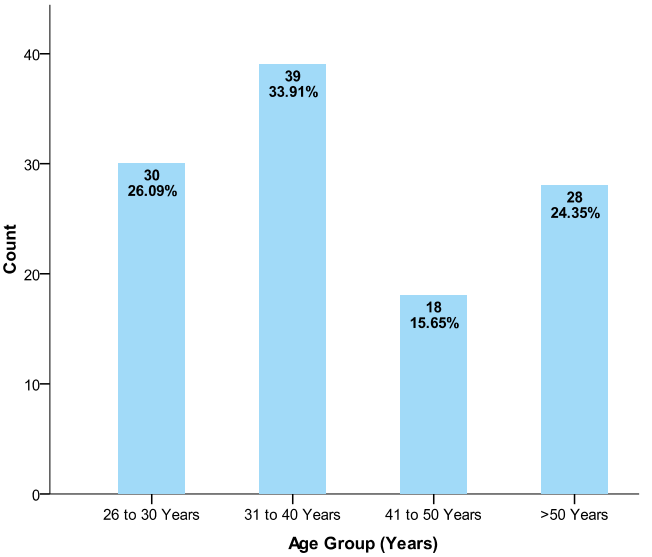

Figure-1. Age distribution of the patients (n= 115)

Frequency of portal hypertensive gastropathy (PHG) in patients of liver cirrhosis undergoing upper gastrointestinal endoscopy was observed in 60% (69/115) cases as presented in Figure-2. Stratification of age analysis is shown in Table-I in which frequency of PHG was not significant among different age groups (p=0.18) as shown in Table-II. Similarly rate of PHG was also insignificantly between male and female and duration of liver cirrhosis as presented in Table-III and IV.

Statistics		Age (Years)	Duration of Liver Cirrhosis (Years)
Mean		39.98	4.62
95% Confidence Interval for Mean	Lower Bound	37.95	4.34
	Upper Bound	42.02	4.90
Median		37	5
Std. Deviation		11.02	1.50
Inter quartile Range		20	1

Table-I. Descriptive statistics of the patients (n= 115)

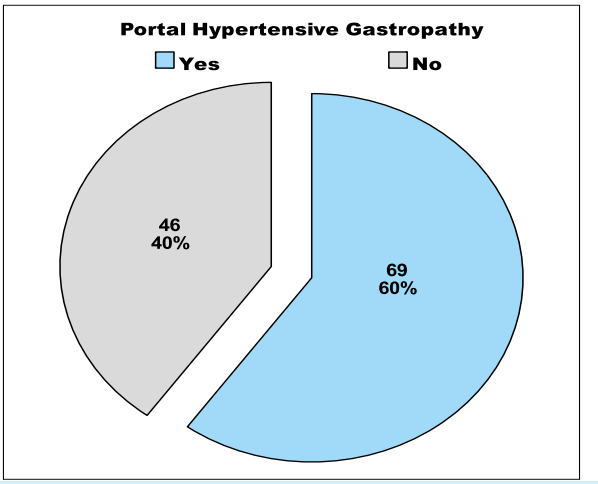

Figure-2. Frequency of portal hypertensive gastropathy in patients of liver cirrhosis undergoing uppergastrointestinal endoscopy (n= 115)

Age Groups (Years)	Portal Hypertensive Gastropathy		Total
	Yes	No	
26 to 30 Years	13(43.3%)	17(56.7%)	**30**
31 to 40 Years	25(64.1%)	14(35.9%)	**39**
41 to 50 Years	12(66.7%)	6(33.3%)	**18**
>50 Years	19(67.9%)	9(32.1%)	**28**

Table-II. Frequency of portal hypertensive gastropathy in patients of liver cirrhosis according to age groups (n= 115)
Chi-Square=4.79; p=0.18

Gender	Portal Hypertensive Gastropathy		Total
	Yes	No	
Male	42(60%)	28(40%)	**70**
Female	27(60%)	18(40%)	**45**

Table-III. Frequency of portal hypertensive gastropathy in patients of liver cirrhosis according to gender (n= 115)
Chi-Square=00001; p=0.99

Duration of Liver Cirrhosis	Portal Hypertensive Gastropathy		Total
	Yes	No	
≤ 5 Years	53(60.2%)	35(39.8%)	**88**
>5 Years	16(59.3%)	11(40.7%)	**27**

Table-IV. Frequency of portal hypertensive gastropathy in patients of liver cirrhosis according to duration of liver cirrhosis (n= 115)
Chi-Square=0.008; p=0.93

DISCUSSION

Majority of patients with liver cirrhosis usually have underlying portal hypertension and then develop portal hypertensive gastropathy and ultimately these kinds of patients presents with sudden onset of gastrointestinal bleeding. The prevalence of PHG in cirrhotic patients has been reported to be variable, ranging between 11% and 98%, while the incidence varies from 25% to 50%.[12]

In our study a total of 115 Patients presenting with variceal bleeding (having history of liver cirrhosis since ≥2 years) and who further was undergoing diagnostic Endoscopic gastrodud endoscopy was enrolled in our study. The average age of the patients was 39.98±11.02 years and mean duration of liver cirrhosis was 4.62±1.5 years. There were 70(60.87%) male and 45(39.13%) were females. This criteria resembles with the Cross-sectional analytical study done by Amanullah Abbasi et al in which Out of 217 patients, 148 were males (68.2%) and 69 were females (31.8%) with ages ranging from 15-85 years,(mean 48.06 years).[13]

In our study frequency of portal hypertensive gastropathy (PHG) in patients of liver cirrhosis undergoing upper gastrointestinal endoscopy was observed in 60% (69/115) cases. The presently reported high frequency is also consistent with the observation by other studies.

Insignificant cellular infiltrates in the ectatic vessels of submucosa and mucosa is considered to be the hallmark feature of the lesions in portal hypertensive gastropathy (14;15). The estimated prevalence of these lesions in patients with PHG ranges from 7% to 41%.[16] Larger scaled study conducted describing the disease course of PHG observed the overall prevalence of this condition in patients underlying having liver cirrhosis was around 80%.

There are certain hypothetical theories that demonstrate a major role of gastric mucosal blood flow in a sense that decreased blood flow o the mucosa and on the other hand increase blood flow to submucosa, muscularis mucosa, and serosa have been observed in patients with portal hypertensive gastropathy.[17-18] Furthermore, as the severity of PHG increases it results in a higher hemokinetic stress as compared to those who have mild PHG based on the endoscopic laser Doppler flowmetry. Many of the international studies have tried to observe the direct and indirect relation with many of the internal and external factors that affect or damage the portal hypertensive mucosa, they have come to know that there is an increased in the damaging effect when generation of prostaglandin E2 decreases in PHG.[19]

Non-responders to medical therapy such as propranolol and patients reported continuous bleeding from PHG, either of the procedures such as shunt surgery or Transjugular intrahepatic Portosystemic shunt (TIPS) should be considered as a rescue therapies based on the clinical experience and patient eligibility. At the end, liver transplant is the remaining last resort option as a definite treatment of PHG.[20-21]

CONCLUSION

The frequency of PHG was 60% in the studied group of cirrhotic patients. This concludes that if in the liver cirrhosis patients early identification and appropriate therapeutic measures of PHG is taken the morbidity in these patients can be decreased.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Abdul Aziz Sahto	All authors have contributed equally	
2	Dr. Amir Shahzad		
3	Dr. Mahnaz Faiz Sahito