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Research Article

### PREVALANCE OF ESOPHAGEAL VARICEAL BLEED IN RELATION TO AGE AND GENDER AMONG ALL THE UPPER GASTROINTESTINAL BLEED CASES: A SINGLE CENTER STUDY

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#### Abstract:

*Upper gastrointestinal bleeding (UGIB) is not uncommon. It is essential to establish early diagnosis and treat the cause. Esophageal variceal bleed may be an important cause of it. However, there exists great variability among various authors about the frequency of esophageal variceal bleed among such patients. This study was conducted to know the frequency of esophageal variceal bleed among patients with lower GI bleeding in our setup.*

*Objective: To determine the frequency of esophageal variceal bleed in patients with upper GI bleeding presenting in a tertiary care hospital*

*Study Design: Cross sectional survey*

*Setting: The study was conducted in Medical Unit-II, Mayo Hospital, Lahore*

*Duration Of Study: 6 months from approval of this study 01-10-2018 to 30-04-2019*

*Methodology: Two hundred patients with upper GI bleeding were included in the study. All the patients had upper GI endoscopy to determine the esophageal variceal bleeding which was documented as frequency distribution table.*

*Results: Esophageal varices bleed was seen among 108 (54%) patients while it was not present among 92 (46%) patients.*

*Conclusion: Esophageal variceal bleeding is frequently present among patients with upper GI bleeding and should be suspected in every patient with upper GI bleeding.*

*Keywords: Upper gastrointestinal bleeding; esophageal variceal bleeding; upper GI endoscopy.*

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**INTRODUCTION:**

Patients presenting with bleeding from a source proximal to the ligament of Treitz is labeled as upper gastrointestinal bleeding although some also include the proximal jejunum.[1] The most important causes of upper GI bleeding are peptic ulcer disease (35 – 62%), gastroesophageal varices (4 – 31%) due to chronic liver disease, Mallory Weis tear (4 – 13%), gastroduodenal erosions, erosive esophagitis (2 – 8%), gastric neoplasm (1 – 4%) and others as angiodysplasia, Dieulafoy's lesions, aortoenteric fistula, hemobilia, hereditary hemorrhagic telangiectasia, uremia and coagulation disorders.[2]

Many upper GI bleeding cases (e.g. erosive gastritis and esophagitis, angiodysplasia, gastric antral vascular ectasia or watermelon stomach, Cameron erosions, portal hypertensive gastropathy and small ulcers) cause iron-deficiency anemia but do not usually present as emergencies. Upper GI bleeding emergencies are characterized by hematemesis, melena, hematochezia (if the bleeding is very massive and brisk) and evidence of hemodynamic compromise such as dizziness, syncope episodes and shock.[3-5]

The incidence of UGIB is approximately 100 cases per 100,000 populations per year. [6] Bleeding from the upper GI tract is approximately 4 times as common as bleeding from the lower GI tract and is a major cause of morbidity and mortality. Mortality rates from UGIB are 6-10% overall. [6]

The diagnosis of and therapy for nonvariceal upper gastrointestinal bleeding (UGIB) has evolved since the late 20th century from passive diagnostic esophagogastroduodenoscopy with medical therapy until surgical intervention was needed to active intervention with endoscopic techniques followed by angiographic and surgical approaches if endoscopic therapy fails.[7]

Esophageal varices are the dilated tortuous veins due to increased pressure in the sophageal plexus. When portal venous blood flow in the liver is impeded by cirrhosis or other causes, the resultant portal hypertension induces the formation of collateral bypass channels where the portal and systemic systems communicates. Portal blood flow is thereby diverted through the coronary veins of stomach into the plexus of esophageal subepithelial and submucosal veins.[8] A retrospective study conducted in England showed that in hospital mortality of patients with cirrhosis and variceal bleed decreased from 43% in 1980 to 15% in 2000 in concurrence with an early and

combined use of pharmacological, endoscopic therapy and short term antibiotic prophylaxis. [9]

Gastroesophageal varices are identified in about 30% of patients with compensated cirrhosis and 60% patients with decompensated cirrhosis. [10] Esophageal variceal bleed (EVB) occurs in 10 – 20% of cirrhotic patients per year and more frequently in those who have large varices. [11] Esophageal variceal bleeding is a medical emergency that carries high mortality despite appropriate management. Endoscopic intervention along with pharmacologic treatment achieves control of bleeding in nearly 70 – 80% of episodes of variceal bleeding. [12]

Chronic liver disease is more common in our part of world due to high prevalence of liver cirrhosis and this has been proved in studies mentioned below. In one study, 892 patients with upper GI bleeding were evaluated. Esophageal varices were present in 580 (65%) cases followed by gastric erosions in 133 (14.96%). [13] In another study, 552 patients of upper GI bleeding were evaluated to find out the cause of bleeding. Esophageal varices secondary to chronic liver disease was present in 44% of the patients. Peptic ulcer disease was the second most common cause found in 19.7% of the patients. [14] In another study conducted in Hamdard University Hospital Karachi and Murshid Hospital, 255 patients of upper GI bleed in each hospital were evaluated and frequency of esophageal varices was 22.75% in Murshad Hospital while it was 7.1 % in Hamdard University hospital. [15] The aim of this study was that there was marked variability in data regarding frequency of esophageal variceal bleed in patients presenting with upper GI bleeding in local studies, so reassessment is required time to time.

**MATERIAL AND METHODS:**

This cross sectional survey was conducted in the Unit-III, of Mayo hospital, Lahore six months after approval from the hospital ethical review committee. Patients of both genders aging between 15 to 70 years having history of upper GI bleeding (hematemesis or malena or both) for less than 48 hours confirmed by endoscopy were included in the survey. Esophageal varices were considered as dilated collaterals in the lower esophagus that interconnect portal and systemic circulation in patients with portal hypertension.

Endoscopically, esophageal varices was defined as irregular, serpiginous, bluish structures running longitudinally in the submucosa of esophageal wall. Bleeding from upper part of the gastrointestinal tract i.e. from esophagus down to the first part of

duodenum, which was manifested by hematemesis, melena or both, is defined as upper gastrointestinal bleeding on basis of upper GI endoscopy. Patients with history of bleeding in the upper or lower respiratory tract assessed by history of epistaxis or blood in sputum, patients not fit for endoscopy due to cardiac disease like recent myocardial infarction and heart failure assessed by history, physical examination, ECG and Chest Xray including those who had drug history of beta blockers or nitrates and patients who had systolic B.P <90mmHg and diastolic B.P<60mmHg.

200 patients (meeting the inclusion/exclusion criterion) were enrolled from Medical Unit III, Mayo Hospital Lahore after informed consent. Demographics like name, age, gender and address were noted. Endoscopic examination of upper GI tract was carried out in central endoscopy unit of Mayo

Hospital Lahore by a single gastroenterologist who had experience of at least five years. Those patients who had esophageal varices (yes/ no) meeting the operational definition criterion was noted on proforma.

Data was entered and analyzed by Statistical Package for Social Science (SPSS) version 11. Quantitative variable like age and mean  $\pm$  S.D. while qualitative variables like gender and presence of esophageal variceal bleed were calculated for frequencies/percentages. Stratification was done for age and gender to control the effect modifiers.

### RESULTS:

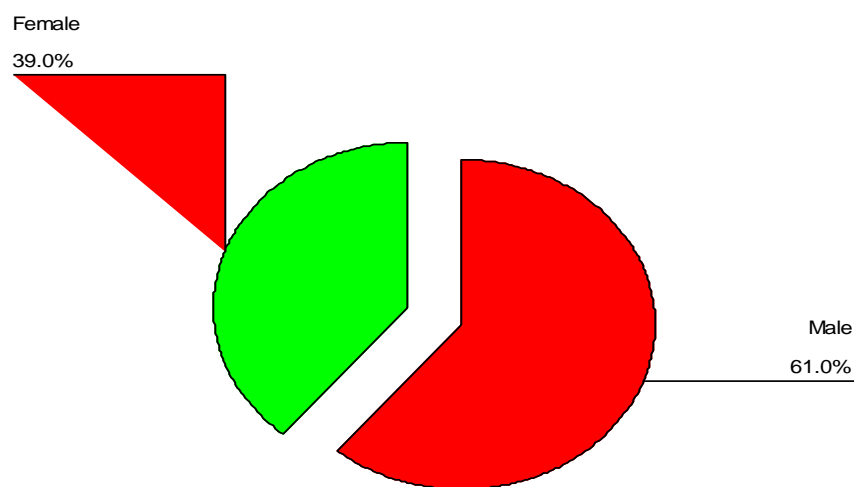
Two hundred patients with diagnosis of lower GI bleeding were included in the study. The mean age of the patients in group A was  $41.34 \pm 17.01$  years. The age range was from 15 years to 70 years. (Table 1).

**Table 1: Distribution by Age (n=200)**

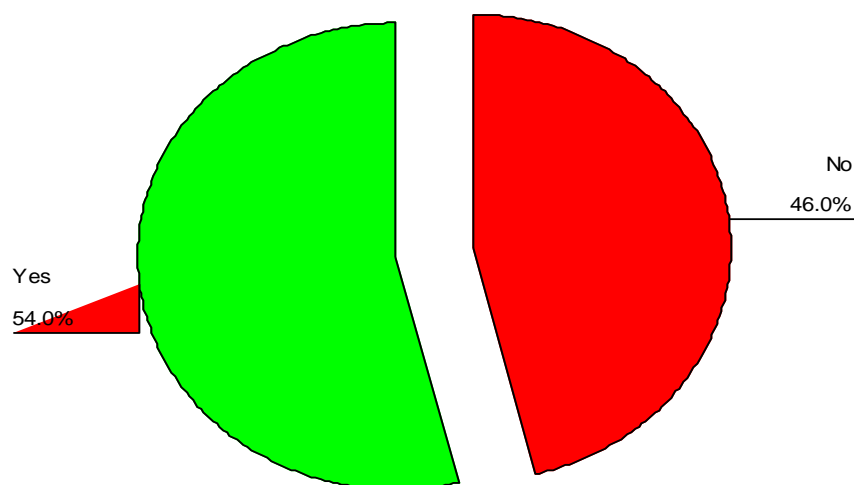
Age in years	No. of patients	Percentage
15 – 20	2	0.5
21 – 30	29	14.5
31 – 40	67	33.5
41 – 50	73	37.5
51 – 60	19	9.5
61 – 70	10	5
Mean + SD	$41.34 \pm 7.01$	
Range	13 – 70	

**Distribution of patients by sex:** Of the 200 patients included in the study, there were 122 (61%) male patients and 78 (30%) female patients in the study.

The female to male ratio in the study was 1:1.56. (Figure 1)

**Figure 1:** Distribution of patients by sex (n=200)

**Distribution of patients by presence of esophageal variceal bleed:** Out of the 200 patients, included in the study, esophageal varices bleed was seen among 108 (54%) patients while it was not present among 92 (46%) patients. (Figure 2)

**Figure 2:** Distribution of patients by presence of esophageal variceal bleed (n=200)

**DISCUSSION:**

Esophageal variceal bleed is a life threatening condition and can present as upper gastrointestinal bleeding. This study was carried out in an effort to detect that how common was the esophageal varices among patients with upper gastrointestinal bleeding. This is one of the largest series including 200 patients. The results of this study showed a high frequency of esophageal variceal bleed among the patients with upper GI bleeding.

In literature, the authors have described various frequencies of the esophageal variceal bleed among the patients with UGI bleeding.

The mean age of the patients in our study was  $41.34 \pm 7.01$  year. This was almost similar to that of study by Atif MA, [16] i.e.  $42.45 \pm 16.52$  years and Khan SA, et al. 61 i.e.  $41.64 \pm 13.56$  years. However, Qari FA, et al. [18] showed a higher mean age of the patients i.e. 51 years.

There were 61% male patients and 39% patients were female with a female to male ratio of 1:1.56. Similarly, in study by Khan SA, et al.[17] male constituted 55.7 % population and female 44.3%. In study by Qari FA, et al. [18] male patients dominated with a male to female ratio of male to female ratio of 1.59:1.

Pasha MB, et al. [19] carried a study among 100 patients with UGIB, in order to determine the frequency of various disorders. They found a high frequency of esophageal variceal bleed i.e. 53%. Like our study, the majority of the patients had esophageal variceal bleed.

Bhutta S, et al. [20] conducted a study on 958 patients with upper GI bleeding. They detected a low incidence of esophageal varices as compared to ours i.e. 20% patients in their study had esophageal varices.

Najam un Nasir, et al. [21] in a study from Mayo Hospital Lahore also found esophageal varices (54%) to be the commonest cause of acute upper GI bleed.

Atif MA, et al. [16] conducted a study based on endoscopic findings among 500 patients, 57% were referred due to upper GI bleeding. Common endoscopic diagnoses were esophageal varices which were found among 44% patients.

Qari FA, et al. [18] carried a retrospective study on a total of 3955 upper GI endoscopies were performed during the study period for various indications. UGI bleeding contributed to 1.76% of cases. Among their findings, esophageal varices was the most common

finding detected among 57% cases of patients with upper GI bleeding.

Khan SA, et al. [17] documented their endoscopic findings among 88 patients who presented with upper GI bleeding. They detected that most frequent cause of upper GI bleeding was esophageal varices which were present in 56.82% patients of their study. Again, like other authors they detected a high frequency of esophageal varices.

This study has certain limitations. This was not a double blind study.

**CONCLUSION:**

Esophageal variceal bleeding contributes a major bulk of patients with upper gastrointestinal bleeding bleeding on upper GI endoscopy. So, it is recommended that every patient with upper GI bleeding should have upper GI endoscopy and should be suspected of having esophageal varices as a commonst cause of bleeding. This is also suggested that more studies should be carried on in this context in different setups.

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