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Variceal Hemorrhage as the Commonest Cause of Presentation with Acute Upper Gastrointestinal Bleeding: A Paradigm Shift

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ABSTRACT

Background: Upper gastrointestinal bleeding, a life-threatening condition, is a common presentation of the emergency room visits. **Objective:** To determine the frequencies of various causes of acute upper gastrointestinal bleeding (AUGIB) amongst the patients presenting at emergency department with upper gastrointestinal bleed mandating urgent esophagogastroduodenoscopy (OGD). **Study Design:** It is a retrospective observational study. **Settings:** Department of Gastroenterology, Combined Military Hospital Lahore, Pakistan. **Duration:** 12 months from January 2019 to December 2019. **Methods:** All the patients who presented to emergency department with AUGIB and were referred for endoscopy after initial resuscitation were included in study. Their record was reviewed including the epidemiologic data, history, clinical details and endoscopic findings. Patients who had routine, non-urgent OGD to screen for varices or anemia, were excluded from the study. **Results:** Records of 270 patients, aged between 18-96 years were analyzed, 206(76.3%) were males and 64 (23.7%) were females. The most common finding was esophageal varices (26.0%) followed by gastritis (20.7%). Esophageal varices were found more frequently in males (76.1%) as compared to females (23.9%). **Conclusion:** This study strengthened the hypothesis that bleeding due to variceal hemorrhage is now actually the leading cause for AUGIB, mandating inclusion of medical treatment for variceal bleed in treatment protocol of all upper GI bleeds in the emergency assessment room, pending OGD.

Keywords: *Upper gastrointestinal bleeding, Endoscopy, Varices, Peptic ulcer.*

INTRODUCTION

Acute upper gastrointestinal bleeding (AUGIB) is a common cause of presentation in Emergency Departments in Pakistan and worldwide. Etiology is variable; most commonly encountered being peptic ulcer disease. Recently we have seen a surge in cases of upper gastrointestinal bleeding attributable to variceal hemorrhage which may indirectly reflect increase in prevalence of cirrhosis due to chronic viral infections and/ or availability of successful treatment regimens for *h. pylori* infection.

Upper Gastrointestinal bleed (UGIB) is a potentially fatal condition that is a common cause of hospitalization globally.[1] The incidence of admissions related to UGIB is between 50-150 patients per 10,000 population annually. This makes up about 1% of all emergency departmental admissions.[2,3]

Upper gastrointestinal bleeding is classically defined as the bleeding with origin proximal to the ligament of Treitz.[4] Thorough review of literature reveals it's incidence to be four times more common than lower GI bleed.[5]There is also a gender discrepancy where it is seen that the males present twice as commonly as females.[6]

The commonest cause of AUGIB as documented from developed countries is secondary to peptic ulcers, followed by varices, Mallory Weiss tears, reflux

esophagitis and erosive gastropathy.[7,8] However, variceal bleed is by far the most common etiology of UGIB in developing countries.[9] A study conducted recently at a tertiary care hospital in Pakistan showed the most common cause of UGIB to be esophageal varices as compared to peptic ulcer in western countries, with the common risk factor of UGIB being the cirrhosis of liver due to hepatitis B & C.[10]

The cause of UGIB may be divided as either variceal or non-variceal. As both have different management protocols.[7] Whereas peptic ulcer bleeds are mild in majority of the cases and don't usually require endoscopic management, variceal bleed is comparatively more severe and require timely endoscopic intervention for hemorrhage control.[9] A large number of admissions to emergency department of Pakistan's hospitals are due to UGIB.[11]

The etiology of acute gastrointestinal bleeding may vary with each geographical region. But only a few local studies have been published regarding the etiology of this prevalent medical emergency.[11,12] This study was conducted for determining the frequencies of various causes of UGIB and segregation in relation to age and gender.

METHODS

It is a retrospective observational study conducted at the Department of Gastroenterology, Combined Military Hospital Lahore, Pakistan. The duration of the study was 12 months from January 2019 to December 2019.

Sample size of the study was 270 patients by using non-probability consecutive technique.

Patients aged 18 and above who presented to the Emergency Department with features suggestive of AUGIB in the form of hematemesis or malena were included.

Patients, who had routine, non-urgent OGD to screen for varices or anemia, were excluded from the study.

The study was conducted after getting approval from the Institutional Review Board in accordance with the principles of Helsinki's declaration.

UGIB was defined as any acute episode of vomiting blood or passing melenic stool in the 24 hour prior to admission to the hospital.[13] Patients presenting with AUGIB were first managed in emergency according to hospital emergency protocol for upper gastrointestinal bleed and all patients whose initial Rockall score was between 2-4 were admitted in medical wards. While those with Rockall score of >4 were admitted in intensive care unit. Endoscopy was performed by trained endoscopists doing at least 100 endoscopies in a year. Patients were kept nil per oral for at least 6 hours for solids and 2 hours for fluids. Endoscopy was done under conscious sedation using midazolam, the dose of which was calculated according to the body weight of the patient and procedure was performed with the patient in left lateral position. Data was collected from medical records and endoscopy suite of all patients on a standard form, including demographics and endoscopic findings.

Data was analyzed using statistical package of social sciences (SPSS version) 25 for windows for analysis. Mean ages for both the genders were calculated as age +/-SD. Frequency of various causes were then analyzed and compared between genders. Comparison of etiology of upper GI bleed between those who were >60 years and <60 years was done by applying Chi-Square test. P value <0.05 was considered as statistically significant.

RESULTS

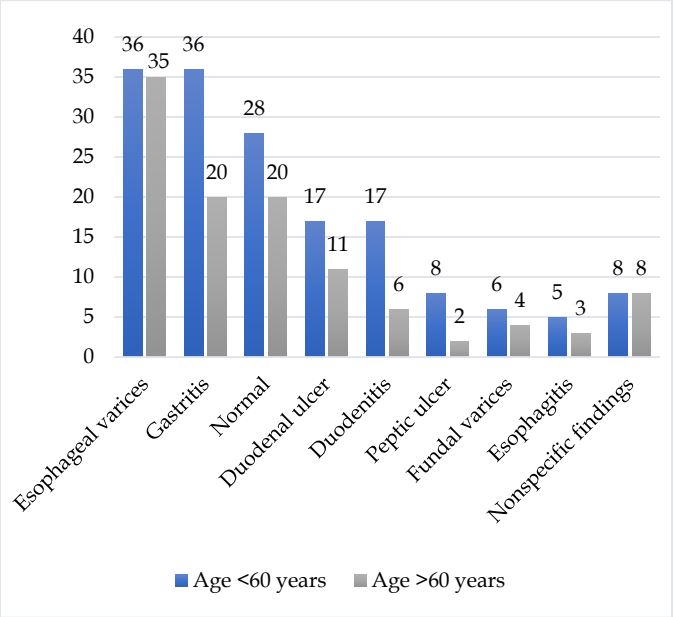
Out of 270 patients, 206 (76.3%) were males and 64 (23.7%) were females; between the ages of 18-96 years with mean age being 52.69 ±16.025. The most common finding was esophageal varices in 71 (26.3%) followed by gastritis in 56 (20.7%), duodenal ulcer 28(10.4%), duodenitis 23 (8.5%), normal 6(5.9%), fundal varices 10 (3.7%), gastric ulcer 10 (3.7%) and esophagitis in 8(3.0%). Negative endoscopy with normal findings accounted to about 48 (17.8%) making it third most common finding. Out of the 71 participants that had esophageal varices, 54(76.1%) were males and 17(23.9%) were females. Out of 28 patients with duodenal ulcers, 23(82.1%) were found in males and only 5(17.9%) in females (Table 1).

Table 1: Causes of upper gastrointestinal bleed (n=270)

Causes	Number & Percentage %	Males	Females
Esophageal varices	71 (26.3%)	54 (76.1%)	17 (23.9%)
Gastritis	56 (20.7%)	42 (75%)	14 (25%)
Normal	48 (17.8%)	34 (70.8)	14 (29.2%)
Duodenal Ulcer	28 (10.4%)	23 (82.1%)	5 (17.9%)
Duodenitis	23 (8.5%)	18 (78.3%)	5 (21.7%)
Non-specific findings	16 (5.9%)	13 (81.5%)	3 (18.8%)
Fundal varices	10 (3.7%)	7 (70%)	3 (30%)
Peptic ulcer	10 (3.7%)	8 (80%)	2 (20%)
Esophagitis	8 (3.0%)	7 (87.5%)	1 (12.5%)
Total	270 (100%)	206 (76.3%)	64 (23.7%)

Further exploration of data revealed that (161/270) of our patients were below 60 while (109/270) were >60 years of age (p= 0.356). However, there was no statistically significant difference of etiology of upper GI bleed in patients who were either above or below 60 years of age (P= 0.513) (Figure 1).

Figure 1: Segregation of endoscopic findings according to age (n=270)



DISCUSSION

Acute upper gastrointestinal bleeding is a potentially life-threatening medical emergency and a major cause of acute hospital admissions. This study was conducted to determine the frequencies of various causes of UGIB and segregation in relation to sex.

The most common cause of UGIB in our study was esophageal varices. This is in accordance with a study conducted in Rawalpindi city of Pakistan, which found esophageal varices to be 36.5% prevalent.[11]The high prevalence of varices is also found in the study done in Tanzania. However, this study found the second common cause to be peptic ulcer disease which is in contrast to our study where we found gastritis to be the second most prevalent cause.[13] A study conducted in central rural India also found esophageal varices to be most common cause.[14] This might be due to comparable socio-economic statuses of both countries.

In contrast to our findings, a study in Brazilian hospital showed peptic ulcers to be the main cause of upper gastrointestinal bleeding with the prevalence of variceal bleeding coming at second.[15] A study conducted in tertiary care in India finds that peptic ulcer disease to be the most common cause, with esophageal varices coming second.[12] Another study from Eastern India had contrasting results with peptic ulcer prevalence to be 40% and varices around 33%.[16] The still high prevalence of esophageal varices indicates the widespread chronic liver disease in these neighboring countries. The protocol of management differs for upper GI bleed due to varices as compared to non-variceal bleeding. Further perspectives studies need to be conducted in Pakistan to establish the most prevalent cause of upper GI bleed and resources should be availed for the prophylaxis of variceal hemorrhage and quick management of such cases in emergency.

This trend of high prevalence of varices came to negligible percentage (3.8%) in a study conducted in Iceland which found duodenal ulcers to be most common cause.[17]

Incidence of Upper GI bleed was more common in males than females, which is in accordance to various studies, although it's not clear why is it more common in males.[12,13,14,15]

Studies have shown that with advancing age, there is more risk of bleeding, due to comorbidities and use of non-steroidal anti-inflammatory drugs (NSAIDs) as well as anti-platelet drugs. These factors cause increase risk of peptic ulcer and/esophagitis.[18,19] We did not see difference in our study where both elderly and younger patients had almost same etiology for the cause of bleed.

CONCLUSION

This study found the prevalence of variceal bleeding to be more than any other cause which indicates a high rate of underlying liver disease. It can be concluded that males are affected more with UGIB than females.

LIMITATIONS

There are definite limitations of our study. This is a unicenter, retrospective study and the non-incorporation of histological diagnosis in the study is the lacunae that need to be rectified for future analytical studies. This study was conducted at a high capacity, referral centre and so the patient population and outcomes could be different at smaller or lower capacity facilities.

SUGGESTIONS / RECOMMENDATIONS

Further studies are needed to establish the common causes of UGIB in Pakistan which may contribute to an improved management of upper GI bleeding. Finding out the prevalence of such factors will help in early screening, and hence appropriate strategies can be developed for their prevention.

CONFLICT OF INTEREST / DISCLOSURE

N conflict of interest is involved.

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