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ENDOSCOPIC FINDINGS OF PATIENTS PRESENTING WITH UPPER GASTROINTESTINAL HEMORRHAGE IN A TERTIARY CARE HOSPITAL

Saqib Malik, Muhammad Amjad Khan, Farhat Naz

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Author Information

Dr. Saqib Malik, Assistant Professor, Medical B Unit, Department of Medicine, Ayub Teaching Hospital, Abbottabad, Hazara, Khyber Pakhtunkhwa, Pakistan.
(Corresponding Author)
Email: saqibmalikdr@hotmail.com.

Dr. Muhammad Amjad Khan, Medical Officer, DHQ Hospital, Abbottabad, Hazara, Khyber Pakhtunkhwa, Pakistan.

Dr. Farhat Naz, Registrar, Medical B Unit, Department of Medicine, Ayub Teaching Hospital, Abbottabad, Hazara, Khyber Pakhtunkhwa, Pakistan.

ABSTRACT

Introduction: One of the commonest medical emergencies faced by physicians and gastroenterologists is upper GI hemorrhage, having incidence rate of 103 cases per 100,000 per year in UK and mortality rate of 10%. Variceal and Non variceal causes are the two major causes of upper GI hemorrhage. Massive GI hemorrhage is the life threatening complication that leads to severe anemia in patients with upper GI hemorrhage. The present study was conducted to determine the endoscopic findings in anemic patients with upper GI hemorrhage presenting to Ayub Teaching Hospital, Abbottabad, Hazara, Khyber Pakhtunkhwa, Pakistan.

Materials & Methods: Our study was conducted in Gastroenterology department, Ayub teaching hospital as a descriptive cross sectional study since March 2011 to August 2011.

Results: Out of total 292 patients with upper GI hemorrhage and resulting anemia included in this study, there were 184 male and 18 female patients with a male to female ratio of 1.7:1, and mean age of 48.09±15.71 years. The most common cause of upper GI hemorrhage was found to be esophageal varices (55.5%) followed by peptic ulcer (36.6%), gastric erosions (5.8%), Mallory-Weiss tear (1.3%) and esophagitis (0.5%).

Conclusion: As compared to Western countries where peptic ulcer disease is the most common cause of upper GI hemorrhage, esophageal varices were the more common cause of upper GI hemorrhage in the study population.

Keywords: Gastrointestinal Hemorrhage; Endoscopy, Gastrointestinal; Esophageal & Gastric Varices; Peptic Ulcer; Esophagitis, Peptic.

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INTRODUCTION

One of the commonest medical emergencies faced by physicians and gastroenterologists is upper GI hemorrhage, having incidence rate of 103 cases per 100,000 per year in the UK[1] and hospital mortality rate of about 10%.[2]

Upper GI Bleed is defined as hemorrhage that occurs proximal to the Trietz ligament presenting either with hematemesis or melena.[3] Variceal and non variceal are the two major causes of Upper GI hemorrhage..[4] In other studies, frequency of the variceal hemorrhage has been shown to be 2-9%.[5] Variceal hemorrhage may be due to Esophageal varices, Gastric varices or combined Gastroesophageal varices while gastric erosions, peptic ulcer disease and Mallory-Weiss tear, esophagitis and gastric tumors are the non- variceal causes of upper GI hemorrhage.[5] Massive GI hemorrhage is the life threatening complication in these patients that lead to severe anemia.[6] First aid given to patients with Upper Gastrointestinal Bleeding starts with stabilizing the airway, breathing and circulation. Hypotensive patients are resuscitated with normal saline, hemacele and blood transfusion. After resuscitation, Proton pump inhibitors & Prokinetics are given.[3,7] Upper Gastrointestinal Endoscopy is

then performed ideally within 24 hours. It yields a diagnosis in 80% of the cases and has a therapeutic purpose as well.[5,8] Therapeutic procedures includes Epinephrine injection, thermal therapy, Argon plasma coagulation, Endoscopic Banding and Clipping.[8] With the help of the upper GI endoscopy, the mortality and morbidity rates associated with upper GI hemorrhage have significantly reduced as it has both diagnostic and therapeutic significance.[9] Upper GI endoscopy is relatively a very safe procedure when it comes to consider the risk for complication with this procedure with a rate of one per 1000 procedures.[10] Out of 10,000 procedures done, the mortality rate is 0.5-3 deaths.[10] Bleeding, infection, perforation, cardiopulmonary problems and adverse reaction to medications are some common complications with upper GI endoscopy.[10]

The objective of this study is to determine the endoscopic findings in anemic patients with upper GI hemorrhage presenting to Ayub Teaching Hospital, Abbottabad. Frequency of the common causes varies among different studies; the purpose of our study was to enlist the causes of upper GI hemorrhage in our population in order to compare it with the literature provided. In addition, it will help to determine whether the etiology of upper GI hemorrhage changes according to the demographic features like age and gender of the patient. Patients presenting with upper GI hemorrhage usually have underlying serious complications such as malignancy which can be treated if diagnosed and treated early, and it is possible only when upper GI endoscopy is done in time. Need for urgent and early upper GI endoscopy should be considered in our population in case of more prevalence of serious underlying complications among patients of upper GI hemorrhage in our study.

MATERIALS & METHODS

This study was conducted in Gastroenterology department, Ayub Teaching Hospital, Abbottabad, as a descriptive cross sectional study from March to August 2011. Sample size was calculated and Consecutive non-probability sampling technique was employed to collect data on predesigned Performa. All patients presenting with hematemesis or melena of either gender and having age of more than 18 years were included in the study.

In order to avoid any error in results, those patients were excluded who had any underlying hemorrhagic disorders, on anti-coagulants, on PPIs or H1 receptor blockers. As a preliminary, permission was sought from the ethical and research committees to conduct this study. All those patients suitable for the study were admitted in the department and first informed consent was taken, explaining both the purpose and advantages/disadvantages of the procedure.

After thorough history, examination and general baselines were done, Upper GI endoscopy was performed as early as possible. All procedures were done by a single expert gastroenterologist having minimum of 5 years' experience so that the common endoscopic findings such as esophageal varices, peptic ulcer disease, esophagitis, gastric erosions and Mallory-Weiss tear were not missed.

The information regarding the patients collected data was recorded on a predesigned Performa.

SPSS version 14.0 was used to record, process and analyze the data for descriptive statistics. Variables like gender and common upper GI Endoscopic findings (i.e. esophageal varices, peptic ulcer disease, esophagitis, gastric erosions and Mallory-Weiss tear) had their frequency and percentages calculated. Mean and SD was calculated for age. Common upper GI Endoscopic findings were also stratified by age and gender.

RESULTS

Out of total 292 patients with upper GI hemorrhage and resulting anemia included in the study, there were 184(63%) male and 108(37%) female patients with a male to female ratio of 1.7:1. The patients included in this study were from different areas of Khyber Pakhtunkhwa province and Tribal areas. Majority of the patients (122, 41.8%) were from Peshawar, followed by 32(11%) patients from Mardan, 22(7.5%) patients from Swat, 20(6.8%) patients from Charsadda, 16(5.5%) patients from Swabi, 11(3.8%) patients from Kohat, 8(2.7%) patients from Bannu and Nowshera each, and 4(1.4%) patients from Lakki Marwat; 49(16.8%) patients were from FATA areas.

Ages of patients ranged from 23-85 years with a mean age of 48.09±15.71 years (Table1). Majority of the patients were of age group 23-50 years (151, 51.7%) followed by 132 (45.2%) of age group 51-75 years and only 9(03.1%) were above the age of 75 years. Minimum hemoglobin (Hb) of the patients was 3.9g/dl and maximum was 9.1gdl, while the mean Hb was 6.75±2.78 g/dl. Minimum total leucocytes count (TLC) was 1700/cmm and maximum was 25000/cmm with a mean TLC of 8815.71±3944.2/cmm. Minimum platelets count was 16000/cmm and maximum was 461000/cmm, while the mean platelets count was 168618±79023.1/cmm.

Table 1: Baseline Characteristics of Patients (n=292).

#	Variables	Mean ± SD	Minimum	Maximum
1.	Age (years)	48.09 ±15.71	23	85
2.	Hemoglobin (g/dL)	6.75 ± 2.78	3.9	9.1
3.	Total Leukocyte Count (cmm)	8815.71 ± 3944.2	1700	25000
4.	Platelets (cmm)	168618 ± 79023.1	16000	461000
Age-wise Distribution		**Number of cases**	**Percentages**	
5.	**Age Groups (years)**			
	23-50	151	51.7	
	51-75	132	45.2	
	75+	09	03.1	

Majority of the patients 170(58.2%) presented with hematemesis and melena both, 60(20.5%) patients with melena only and 62(21.2%) patients with hematemesis only (Table 2).

Among the patients who underwent upper GI endoscopy 167 patients (57.2 %) were anti HCV positive, 10 patients (3.5 %) were positive for HBsAg while 7 patients (2.3%) were both anti HCV and HBsAg. Positive and 108 patients (37%) were negative for both.

Table 2: Clinical Features of Patients (n=292).

Clinical Features	No of Patients	Percentage
Mode of Presentation		
Hematemesis plus Melena	170	58.2%
Hematemesis only	62	21.2%
Melena Only	60	20.5%
Virology Status		
Hepatitis C Positive	167	57.2
Hepatitis B Positive	10	03.5
Hepatitis B+C Positive	07	02.3
Negative	108	37.0

Table 3 shows that out of these 292 patients, endoscopy of 162(55.5%) patients showed Esophageal Varices, of whom 108(66.7%) were males and 54(33.3%) were females; this was followed by Duodenal Ulcer in 78(26.7%) patients of which 55 patients (70.5%) were males and 23(29.5%) were females; Gastric Ulcer was found in 29(9.9.3%) patients, among whom 21(72.4%) were males and 8(27.6%) were females; Gastric Erosions were found in 17(5.8%) patients, among whom 8(47.1%) were males and 9(52.9%) were females; Mallory-Weiss tears were found in 4(1.3%) patients, of whom 2(50%) each were males and females; Esophagitis was present in 2(0.5%) patients, equally divided between one male and female patient.

Table 3: Endoscopic Findings in Patients (n=292).

Endoscopic Findings	No of Patients	Percentage
Esophageal Varices	162	55.5
Duodenal Ulcer	78	26.7
Gastric Ulcer	29	09.9
Gastric Erosion	17	05.8
Mallory-Weis Tear	04	01.3
Esophagitis	02	0.5
TOTAL	**292**	**100%**

DISCUSSION

These days gastroenterologist have to face acute upper GI hemorrhage as one of the most common emergencies.[12-14] Out of 100,000, 50-150 persons are affected per year.[13] Over the past four decades, almost 8-10% of the affected population dies.[14, 15]

The etiology of the disease is changing from time to time leading to need for further studies for the evolution of new techniques to bring awareness and upgraded education regarding this major emergency.[16]

In this study, majority of the cases reporting for upper GI hemorrhage had the underlying etiology of esophageal varices (55.5%), followed by other less common causes such as peptic ulcer disease (36.6%), and gastric erosions (5.8%). Other less common causes include Mallory-Weiss tear, and esophagitis. Regarding the etiology of acute upper GI hemorrhage, this study is in concordance with prior studies conducted at the national level; however, differences do exist when comparison is made with the international data, particularly the studies carried out in the West.[16]

Evidence by Adam T et al[17] also supported that main contribution in upper GI hemorrhage was by esophageal varices while other causes such as peptic ulcer, gastric erosions, neoplasms followed later. Evidence by Ahmad et al[16] showed 46% cases of upper GI hemorrhage contributed by esophageal varices. Khan A et al[18] showed 45.7%, Iqbal J[19] et al showed 39% involvement of esophageal varices in etiology of upper GI hemorrhage. Current study was also supported by studies conducted in Nigeria that showed a percentage of 45% of esophageal varices.[20,21]

There are a lot of factors that make esophageal varices as the most common cause of upper GI hemorrhage. One, the health care system is poorly regulated and the key problem with it is fragmentation. There is lack of availability of endoscopy and other key facilities even at the city level except for the metropolitan areas, which leads to a significant delay in the early diagnosis of various morbid conditions like

hepatic cirrhosis. Most of the patients in periphery remain undiagnosed and present to tertiary care centers with complications like esophageal variceal hemorrhage and porto-systemic encephalopathy. Similarly, owing to lack of appropriate inpatient care facilities and outpatient programs that could amount to applicable standards, majority of such patients are referred to tertiary care centers which can result in potential patient selection and referral bias.

On the contrary, the studies conducted in the west have shown that peptic ulcer disease is the most common cause for upper GI hemorrhage causing more than half of the cases, followed by esophageal varices, and rest of the causes such as neoplasms and gastric erosions. Evidence shown by Lim[22] in UK reported that peptic ulcer (39.3%) is the most common cause of upper GI hemorrhage followed by esophageal varices (11.7%), gastric erosions (10.4%), esophagitis and Mallory-Weiss tear. Kaviani et al[23] from Southern Iran reported that 44% cases are caused by peptic ulcer disease. Other studies included by Orhan Sezgin et al[24] from Turkey reported that 48.2% cases were caused by peptic ulcer disease; M Uddin Ahmed[25] from Bangladesh reported 42% cases from peptic ulcer disease. Talafeh A et al[26] in Jordan reported 74% cases resulting from the peptic ulcer disease.

The reason behind the high contribution of peptic ulcer disease as compared to esophageal varices in upper GI hemorrhage in West is because in these developed countries, better medical care has increased the life expectancy contributing largely to increased geriatric population; although the medical problems such as osteoarthritis, multiple joint diseases, coronary artery disease associated with increasing age still persist leading to consumption of drugs like NSAIDs and low doses of aspirin. Secondly, again due to improved medical facilities, early diagnosis of esophageal varices and hence the use of beta blockers and band ligation leads to good control of upper GI hemorrhage from the esophageal varices.

Gastric erosions were seen in only 6% of patients in the present study which might be because of the increasing usage of PPIs by general physicians and self-medication by the patient on NSAIDs otherwise most of the studies in West have reported high prevalence rates of gastric erosions about 15-20% in patients with upper GI hemorrhageing.[13, 22, 23] Mallory-Weiss tear was also seen rarely in the current study which might be explained by less consumption of alcohol by the sampled population because of traditional beliefs.[16,18]

In this study, evidence suggested that duodenal ulcer is more commonly involved than gastric ulcer in cases of upper GI hemorrhage caused by peptic ulcer disease, which is in concordance with the study by Khan A et al,[18] Lim[26] from UK, and Sheenak et al[29] from Jordan, who reported duodenal ulcer more commonly involved than gastric ulcer. On the contrary, studies by Kaviani et al,[23] Turkay Akbas et al,[27] and Gurung RB et al[28] reported that gastric ulcer is more commonly involved than duodenal ulcer in the contribution of upper GI hemorrhage.

Patients with upper GI hemorrhage present in the ER with either any of the following symptoms or a combination of any of these; hematemesis, hematochezia, melena. It was observed in current study that majority of patients presented with both hematemesis and melena (58.2%), which is supported by a study performed by M Uddin Ahmed[25] and Mustafa M[29] who reported hematemesis and melena as common presenting feature in 42% and 47% of patients respectively. In contrast to this study, Akbas T[27] found melena as the presenting feature in more than half of their patients with acute upper GI hemorrhage. Gurung RB et al[28] reported hematemesis as the presenting feature in 51% of upper GI hemorrhage cases.

Infection with Hepatitis B and Hepatitis C viruses is now the major cause of cirrhosis globally. The occurrence calculated in current study is in accordance with other studies in Pakistan.[30] The increased frequency of HCV as compared to HBV tells the gravity of situation that HCV is spreading out of proportion to HBV. The reason might be two-fold; first, there being no vaccination against HCV, existence of its multiple subtypes, as well as a natural history which ends up in chronic sequel in more than 80% patients. Second, geographic factors and immigrants from Afghanistan in Khyber Pakhtunkhwa plus traditional measures by barbers shop, quacks, used syringes, etc., may have resulted in more spread of HCV in this region. Eight patients were found to be seropositive for both HCV and HBV, as also reported by others.[31]

The upper GI endoscopy done during the study upon the patients was quite tolerable without any complication.

CONCLUSION

Esophageal varices were the leading cause of upper GI hemorrhage in comparison to peptic ulcer disease which is the leading cause in western countries. An additional finding was the large number of Hepatitis C positive patients.

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