

Etiology of Upper Gastrointestinal Bleed At Aziz Bhatti Shaheed Teaching Hospital Gujrat

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ABSTRACT

Background: Upper gastrointestinal bleeding is one of the important medical emergencies worldwide, accounting for high morbidity and mortality. The incidence of upper gastrointestinal bleed is reported to be ranging from 48 to 160 cases per 100,000 adults per year and mortality rate stable at 6–14% in most studies. The large discrepancies in etiology of upper gastrointestinal bleed in Pakistan and lack of adequate facilities necessitate to determine most common cause of upper gastrointestinal bleed.

Objective: To determine the causes of upper gastrointestinal bleed in patients presenting at Aziz Bhatti Shaheed Teaching Hospital Gujrat

Materials and Methods: An observational study was conducted from Jan 2013 to September 2015 in Aziz Bhatti Shaheed Teaching Hospital Gujrat. All the patients who presented with hematemesis or melena were resuscitated and upper GI endoscopy was performed and cause was identified. Data was collected using a performa. Causes of upper gastrointestinal bleed were identified by upper GI endoscopy. Data analysis was done using SPSS version 20.0.

Results: Out of 412 patients the most common cause was variceal bleeding accounting for 64.2% followed by erosive gastritis in 15.4% and peptic ulcer disease in 10.5% of cases. No cause of bleeding was found in 3.2% of cases. Variceal bleed has high mortality (25.7%) as compared to non-variceal bleed (15.1%).

Conclusion: Variceal bleed is most common cause of upper gastrointestinal bleed due to high prevalence of chronic viral hepatitis and its complications followed by erosive gastritis and peptic ulcer disease.

Key Words: Etiology, UGIB, Varices, Erosive gastritis.

Introduction

Upper gastrointestinal bleeding a major medical emergency globally. It depicts high morbidity and mortality despite recent advances in treatment options.^{1,2} It is estimated that 1- 2% of all acute admissions are due to GI bleeding³ and is associated with high medical care costs. The incidence of upper gastrointestinal bleed is reported to be ranging from 48 to 160 cases per 100,000

adults per year⁴ and mortality rate stable at 6-14% in most studies.^{3,5,6,7}

Intensive early resuscitation of patients with upper gastrointestinal bleed significantly decreases mortality.^[8]

Acute upper gastrointestinal bleed can be stratified as having either variceal or nonvariceal sources of upper GI hemorrhage as the two have different treatment

algorithms and prognosis. Variceal hemorrhage is related to higher morbidity, mortality and cost of treatment than other causes of upper gastrointestinal bleeding.⁹ Variceal hemorrhage accounts for 15-20% mortality with every episode within duration of 6 weeks.^[10] On the other hand peptic ulcer disease is associated with less mortality as compared to variceal bleed. In one study 30-day all-cause mortality varied from 3.8% to 5.6% among bleeding ulcer patients, and 6.0% to 17.0% among perforated ulcers.¹¹

Causes of upper gastrointestinal bleed vary according to geographic region and socioeconomic status. In western countries approximately 45-60% of admissions for acute upper gastrointestinal bleed are due to peptic ulcers followed by esophagitis and esophageal varices.^{3,8} Data from Saudi Arabia, Jordan, Iran and Libya reported peptic ulcer diseases and oesophageal varices as the major causes of upper gastrointestinal bleed.¹²⁻¹⁵ In Pakistan, various studies have depicted multiple causes as most common cause of upper gastrointestinal bleeding. Some studies showed variceal hemorrhage and erosive gastritis as most common cause of upper gastrointestinal bleeding.^{16,17} However peptic ulcer was found as common cause in other studies.^{18,19}

Physicians face unique challenges in management of upper gastrointestinal bleed in Pakistan. Prevalence of liver cirrhosis due to chronic hepatitis is rising and there is a large pool of unrecognized patients of liver cirrhosis and its complications. Similarly there are no large scale studies available regarding the prevalence of peptic ulcer disease in Pakistan. There is lack of adequate diagnostic facilities including endoscopic equipment, skilled gastroenterologists and moreover cost of accessories and maintenance costs are extremely high. Due to lack of affordability on patients' part and their attitude towards specialized health care makes the management of upper gastrointestinal bleed more difficult. So it is necessary to determine most common cause of upper gastrointestinal bleed so that proper stratification and early referral to adequate health care facility can be done.

Thus the objective of our study was to determine the causes of upper gastrointestinal bleed in patients presenting at Aziz Bhatti Shaheed Teaching Hospital Gujrat

Materials and Methods

An observational study was done from Jan 2013 to September 2015 in Aziz Bhatti Shaheed Teaching Hospital Gujrat after approval of ethical review committee. Informed consent was taken from patients and

were included in study using non-probability consecutive sampling. All the patients who presented with hematemesis or malena were stabilized hemodynamically and admitted in inpatient facility. The patients who were discharged were called back at day 30 and re-evaluated.

Hematemesis was defined as one episode of red or coffee colored vomitus with or without blood clots. Malena was defined as passing of one or more black tarry stools. upper gastrointestinal bleed was attributed to variceal cause when there were large torturous vessels with red wale marks, cherry red spots, hemocystic spots or fibrin plug was present on varices. Acute erosive gastritis was considered when multiple dark brown erosions were found on endoscopy. Peptic ulcer disease was attributed when any stigmata of recent hemorrhage were found i.e active arterial bleed, non-bleeding visible vessel, adherent clot, oozing or flat spot.

Patients with suspected variceal upper gastrointestinal bleed i.e. known cases of liver cirrhosis or non cirrhotic portal hypertension; were given injection Terlipressin 2mg intravenous once and then 1mg 6 hourly while others with suspected non-variceal upper gastrointestinal bleed were given injection Omeprazole 80mg intravenous in half hour and then 8mg/hour infusion until upper GI endoscopy was performed. Upper GI endoscopy was performed within 24 hours of admission. Endoscopic variceal band ligation was done in cases of variceal bleed. In case of peptic ulcer disease either injection adrenaline was given or thermal therapy with bipolar gold probe was done depending on stigmata of endoscopic finding. Only medical therapy according to etiology was done in other causes of upper gastrointestinal bleed. In patients where no cause could be identified or bleeding could not be controlled with available equipment were referred to specialized centers for further diagnostic workup and management.

Detailed history was taken, laboratory investigations, days of hospital stay, transfusion requirements and mortality at 30 days were noted. Data was collected using a Performa. Cause of upper GI bleed was identified by upper GI endoscopy by a consultant gastroenterologist using Pentax EPK-i 5000.

Data analysis was done using SPSS version 20.0. Results were expressed as mean \pm SD for continuous variables such as age and number (percentage) for categorical data such as gender and causes of upper GI bleed.

Results

A 412 patients were included in the study out of which 218 (52.8%) were male and 194 (47.2%) were female. The overall mean age was 51.24 ± 14.62 years with minimum 11 years to maximum 90 years as represented by Figure 1.

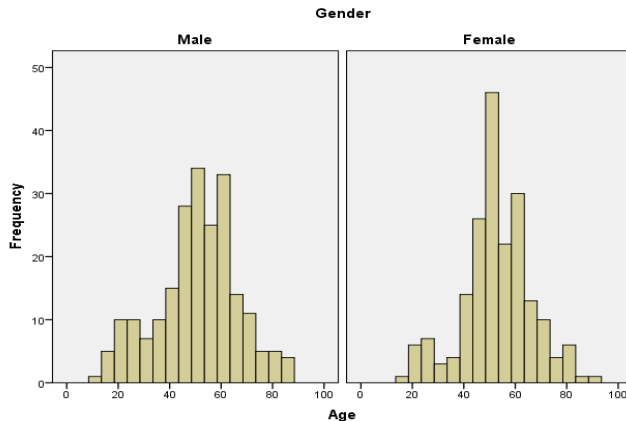


Figure 1. Frequency of Age according to Gender

Out of 412 patients 130 (31.6%) presented with hematemesis, 114 (27.5%) presented with malena and 168 (40.9%) had both hematemesis and malena. The mean hemoglobin at presentation was 7.26 ± 2.19 g/dl. The most common cause was variceal bleeding accounting for 253 (64.2%) cases out of which esophageal varices bleed was found in 225 (57.4%) and gastric varices bleed in 28 (6.8%) patients. The variceal bleeding was most common cause in patients having age between 30-79 years as is presence of upper gastrointestinal bleed. Acute erosive gastritis was second common cause accounting for 64 (15.4%) cases followed by peptic ulcer disease in 43 (10.5%) cases and cause of upper gastrointestinal bleed was not found in 13 (3.2%) cases (Table I). In 26 (6.3%) cases who had non-bleeding esophageal varices other causes of upper gastrointestinal bleed were found. Erosive gastritis was found in 17(4.1%) and peptic ulcer disease in 6 (2.2%) cases.

The mean duration of hospital stay was 7.72 ± 3.15 days and mean pints of fresh blood transfused were 4.12 ± 2.51 pints. The all cause mortality was 89 (21.6%) patients at 30 days. The mortality among patients with variceal bleed was 25.7% while in non-variceal bleed was 15.1% (Table II).

Table 1: Causes of upper GI bleed according to gender and percentage

CAUSES	NUMBER (PERCENTAGE) OF CASES		
	Male	Female	Total
1. NO CAUSE FOUND	4 (1%)	9 (2.2%)	13(3.2%)
2. VARICEAL CAUSES			
Esophageal varices	122 (31.1%)	103(26.3%)	225 (57.4%)
Gastric varices	9 (2.2%)	19 (4.6%)	28 (6.8%)
3. PEPTIC ULCER DISEASE			
Gastric Ulcer	12 (2.9%)	11(2.7%)	23 (5.6%)
Duodenal Ulcer	17 (4.2%)	3 (0.7%)	20 (4.9%)
4. GASTRIC AND DUODENAL CAUSES			
Acute Erosive Gastritis	28 (6.27%)	36 (4.68%)	64 (15.4%)
Acute Erosive Duodenitis	5 (1.2%)	1(0.2%)	6 (1.4%)
5. ESOPHAGEAL CAUSES			
Esophageal Ulcers	6 (1.5%)	5 (1.2%)	11(2.7%)
Esophagitis	3 (0.75%)	3 (0.75%)	6 (1.5%)
Esophageal erosions	1 (0.2%)	0	1(0.2%)
Esophageal candidiasis	4 (1%)	2 (0.5%)	6 (1.5%)
Mallory Weiss Tears	2 (0.5%)	1(0.2%)	3 (0.7%)
6. OTHER CAUSES	5(1.2%)	1(0.2%)	6 (1.4%)

Table II: Patients Characteristics

No. of Patients and Gender	Total 412 Male 218 (52.8%) Female 194 (47.2%)
Mean Age	51.24 + 14.62 years
Presentation	Hematemesis 130 (31.6%) Malena 114 (27.5%) Both Hematemesis & Malena 168 (40.9%)
Mean Hb at presentation	7.26 + 2.19 g/dl
Mean duration of hospital stay	7.72 + 3.15 days
Mean pints of fresh blood transfusion	4.12 + 2.51 pints
All-cause mortality at 30 days	21.6% Variceal Cause 25.7% Non-variceal cause 15.1%

Discussion

Upper gastrointestinal bleed is a common reason for emergency hospital admissions and a major cause of morbidity and mortality worldwide. In an effort to elucidate the causes of upper gastrointestinal bleed, we performed an observational study in patients presenting with acute upper gastrointestinal bleed in our hospital and found out that variceal bleed is more common than non-variceal bleed.

Our result is contradictory to western and middle eastern studies as well as some studies in Pakistan. Czernichow et al. and colleagues⁶ studied epidemiology and course of upper gastrointestinal bleed in France and found most

frequent diagnosis of peptic ulcer disease followed by varices and erosive disease. Similar results were found in other studies in western countries.^{3,5,7} In middle eastern studies similar pattern of causes of upper gastrointestinal bleed was found.¹²⁻¹⁵ This difference may be due to less prevalence of chronic hepatitis C in these regions.

Bhutta S. et al and colleagues conducted a study of 147 patients in POF Hospital Wah and found peptic ulcer to be the commonest cause of upper gastrointestinal bleed (34%) followed by gastro-esophageal varices (21.1%). Duodenitis, gastric erosions and erosive gastritis were among the less common causes (18.4%)^[19] which does not match with our results. This discrepancy may be due small sample size in their study.

Khurram M et al in a study of 2484 patients from DHQ teaching hospital, Rawalpindi, found erosive gastritis, esophago-gastroduodenitis and duodenitis in 15.6%, 15.3% and 14.3% cases respectively, being the main causes of upper gastrointestinal bleed.²⁰ Similar prevalence of erosive gastritis was found in our study (15.4%). Endoscopy was unremarkable in 24% patients contrary to our results (3.2%). However peptic ulcer (8.3%) is comparable to our results (10.3%) although the most common cause in our study is variceal bleed.

Adam T et al. and Najam un Nasir et al. found esophageal varices as commonest cause of upper gastrointestinal bleed followed by peptic ulcer disease^{16,21} which are comparable to our results.

According to one study the 6-week mortality with each episode of variceal hemorrhage is approximately 15 - 20%^[10] while our results demonstrated 25.7% mortality at 30 days. Similarly another study demonstrated 30-day all-cause mortality varied from 3.8% to 5.6% among bleeding ulcer patients, and 6.0% to 17.0% among perforated ulcers.¹¹ In our study mortality due to non-variceal causes at 30 days was 15.1%. The difference in mortality may be due to attitude of patients towards disease severity and lack of specialized health facilities in our setup. The reluctance of patients towards blood transfusion, non-affordability and ignorance towards disease severity might be responsible. In case of active bleed no other interventions except those described above were available in our setup which may also contribute towards increased mortality.

Infectious diseases are common in Pakistan. Viral hepatitis has a high prevalence rate. The hepatitis B surface antigen carrier rate has prevalence of 1.5-2.1%²² while seroprevalence of HCV infection was found to be 4-12.5%.²³ The difference in our results as compared to

western and middle eastern studies may be due to high prevalence of chronic viral hepatitis related cirrhosis and lack of treatment due to unawareness; which has led to substantial increase in cases of variceal bleed. One study suggest over prescription of PPIs in Pakistan^[24] which might have decreased the incidence of peptic ulcer disease.

Our study depicts that variceal cause is most common cause of upper gastrointestinal bleed and is associated with high mortality. Among the patients with chronic liver disease early diagnosis and endoscopic band ligation should be performed. Further large scale studies are needed to evaluate the etiology, disease burden, mortality and cost of treatment in patients with upper gastrointestinal bleeding.

Conclusion

Variceal bleed is most common cause of upper gastrointestinal bleed due to high prevalence of chronic viral hepatitis followed by erosive gastritis and peptic ulcer disease and is associated with high mortality as compared to non-variceal bleed.

References

1. Larson DE, Farnell MB. Upper gastrointestinal hemorrhage. *Mayo clin proc.* 1983;58:371-87.
2. Silverstein FE, Gilbert DA, Tedesco FJ et al. The national ASGE survey on upper gastrointestinal bleeding. I. Study design and baseline data. *Gastrointestinal Endoscopy.* 1981;27:73-9.
3. Theocharis GJ, Thomopoulos KC, Sakellaropoulos G, Katsakoulis E, Nikolopoulou V. Changing trends in the epidemiology and clinical outcome of acute upper gastrointestinal bleeding in a defined geographical area in Greece. *J Clin Gastroenterol.* 2008 Feb; 42(2):128-33.
4. Van Leerdam ME, Vreeburg EM, Rauws EA, Geraedts AA, Tijssen JG, Reitsma JB, Tytgat GN. Acute upper GI bleeding: did anything change? Time trend analysis of incidence and outcome of acute upper GI bleeding between 1993/1994 and 2000. *Am J Gastroenterol.* 2003;98:1494-1499.
5. Paspatis GA, Matrella E, Kapsoritakis A, Leontithis C, Papanikolaou N, Chlouverakis GJ, Kouroumalis E. An epidemiological study of acute upper gastrointestinal bleeding in Crete, Greece. *Eur J Gastroenterol Hepatol.* 2000;12:1215-1220.
6. Czernichow P, Hochain P, Noursbaum JB, Raymond JM, Rudelli A, Dupas JL, Amouretti M, Gouérou H, Capron MH, Herman H, et al. Epidemiology and course of acute upper gastro-intestinal haemorrhage in four French geographical areas. *Eur J Gastroenterol Hepatol.* 2000;12:175-181.
7. Rockall TA, Logan RF, Devlin HB, Northfield TC. Incidence of and mortality from acute upper gastrointestinal haemorrhage in the United Kingdom: Steering Committee and members of the national Audit of Acute Upper Gastrointestinal Haemorrhage. *BMJ* 1995;311:222-6.
8. Baradaran R, Ramdhaney S, Chapalamadugu R, Skoczylas L, Wang K, Rivilis S, Remus K, Mayer I, Iswara K, Tenner S. Early intensive resuscitation of patients with upper gastrointestinal bleeding decreases mortality. *The American journal of gastroenterology.* 2004 Apr 1;99(4):619-22.

9. Gralnek IM, Jenssen DM, Kovacs TO, Jutabha R, Machicado GA, Gombein J, et al. The economic impact of esophageal variceal hemorrhage: cost-effectiveness implications of endoscopic therapy. *Hepatology* 1999; 29:44-50.
10. Abralde JG, Villanueva C, Banares R, Aracil C, Catalina MV, Garci APJC, et al. Hepatic venous pressure gradient and prognosis in patients with acute variceal bleeding treated with pharmacologic and endoscopic therapy. *J Hepatol* 2008; 48:229-36
11. Malmi H, Kautiainen H, Virta LJ, Färkkilä MA. Increased short- and long-term mortality in 8146 hospitalised peptic ulcer patients. *Aliment Pharmacol Ther* 2016; 44: 234–45.
12. Qari F. Major causes of upper gastrointestinal bleeding at King Abdul Aziz University Hospital (Jeddah). *Kuwait Med J*. 2001; 33: 127–30.
13. Banisalamah A, Mraiat Z, Banisalamah A. Upper gastrointestinal bleeding in Irbid, Jordan. *RMJ*. 2007; 32: 105–8.
14. Kaviani M, Pirastehfar M, Azari A, Saberifiroozi M. Etiology and outcome of patients with upper gastrointestinal bleeding: a study from South of Iran. *Saudi J Gastroenterol*. 2010; 16: 253–59.
15. Elghuel A. The characteristics of adults with upper gastrointestinal bleeding admitted to Tripoli Medical Center: a retrospective case-series analysis. *Libyan J Med* 2011, 6: 6283
16. Adam T, Javaid F, Khan S. Upper gastrointestinal bleeding : An etiological study of 552 cases. *J Pak Inst. Med Sci* 2004;15(1): 845 -48.
17. Khan A, Ali M, Khan IM. Causes of severe upper gastrointestinal bleeding on the basis of Endoscopic findings. *J Postgrad Med Inst* 2006; 20(2): 154-48.
18. Bilal A, Nagra H, Shahid M. Upper GIT bleed, prevalence of peptic ulcer. *Professional Med J*.2004;11:14–5
19. Bhutta S, Jamil M, Aziz K, Wasimuddin. An Etiological Study of Upper Gastrointestinal Bleeding. *JRMC*; 2012;16(1):31-33
20. Khurram M, Javed S, Khaar HB, Goraya F, Hasan Z. Endoscopic evaluation of 2484 patients with upper GI haemorrhage. *J Rawal Med Coll* 2003; 7:89–91.
21. Nasir NU, Nadeem MA, Imran M, Hussain I. Oesophageal varices vs peptic ulcer: A study of 100 patients. *Pak J Gastroenterol* 1998; 12 (1-2):53-56
22. Ijaz A, Shafiq F, Toosi NA, Malik MN, Qadeer R. Hepatitis B and Hepatitis C in blood donors: Analysis of 2-years data. *Ann K E Med Coll* 2007;13:59- 61.
23. Waheed Y, Shafi T, Safi SZ, Qadri I. Hepatitis C virus in Pakistan: A systematic review of prevalence, genotypes and risk factors. *World J Gastroenterol*. 2009 Dec 7; 15(45): 5647–5653.
24. Shafi S, Soomro R, Abbas SZ. Proton pump inhibitors – over-prescribed in a rural community? *Pak J Med Sci* 2011;27(2):300-302.