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Research Article

**ETIOLOGY OF UPPER GASTROINTESTINAL BLEEDING**<sup>1</sup>Dr. M. Ammar Sadiq, <sup>1</sup>Dr. Muhammad Mubin Nazar, <sup>1</sup>Dr. Hafiz Abdul Rauf<sup>1</sup>District Headquarter Hospital, Lodhran**Abstract:**

**Aim of study:** The aim of this study was to determine the common etiologies of upper gastrointestinal among patients of different age groups and gender that mostly present in medical emergency of our hospital.

**Place and Duration:** The study was done in 6 months duration from July 2017 to January 2018 at Bahawal-Victoria Hospital (B.V Hospital) Bahawalpur, Punjab.

**Methodology:** It was a single centered descriptive cross-sectional study. Total 120 patients were enrolled in this study. Patient presented to us in emergency with upper gastrointestinal bleeding got initial resuscitation and then followed up throughout the hospital stay. Complete history, examination and relevant investigations were noted by author on a "patients detail form". Causes of upper gastrointestinal bleeding were identified by endoscopy. Patients with recurrent history of UGIB and end stage disease patients were not included in the study. Non-probability method of sampling was used.

**Results:** Total one hundred and twenty patients were selected in the study. Out of 120 patients, 81 were male and 39 were female. Most common cause of upper gastrointestinal bleeding was variceal cause with 47.5% (57/120) followed by peptic ulcer 23.33% (28/120) and NSAID induced gastritis 13.33% (16/120). At first presentation, 68 patients presented with melena, 31 with hematemesis and 19 with both melena and hematemesis. In this area variceal cause is more common due to high prevalence of hepatitis infection. The most common age group was 36-50 years. In 5 patients the result of endoscopy was normal, no pathology seen. Mean hemoglobin value at presentation was  $6.9 \pm 1.2$ , mean pints of blood transfused were  $2.3 \pm 1.1$  and mean duration of hospital stay was  $8.5 \pm 4.6$  days. 4 patients died during hospital stay.

**Conclusion:** According to this study due to high prevalence of infectious disease like hepatitis C and B, esophageal varices is the most common cause of upper gastrointestinal bleeding in this area followed by peptic ulcer and NSAID induced gastritis.

**Key words:** Upper gastrointestinal bleeding (UGIB), variceal, non-variceal, NSAID, Peptic ulcer, Hepatitis C, Hepatitis B, Gastric ulcer, Duodenal ulcer.

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**INTRODUCTION:**

Upper gastrointestinal bleeding (UGIB) is one of the life threatening conditions that present in medical emergency. According to some studies it has 6-14% morbidity and mortality rate worldwide [1-4]. The rate of mortality due to upper gastrointestinal bleeding in US is 102/100,000 persons per year [5,6]. UGIB is defined as a bleeding derived from a source proximal to ligament of treitz e.g. esophagus, stomach and duodenum. It can present as bloody vomitus (hematemesis), black/tarry colored stool (melena) or both. Different parts of world have different etiologies; two most common of them are esophageal varices and peptic ulcer [7].

UGIB etiology can be divided into two main categories i.e. Variceal and non-variceal bleeding. Esophageal varices defined as dilated sub-mucosal veins in lower one third of esophagus most often as a consequence of portal hypertension, commonly due to liver cirrhosis.

Non-variceal bleeding causes includes; gastric ulcer, duodenal ulcer, erosive esophagitis, NSAID induced gastritis, gastric neoplasm and coagulation disorders etc [8-10]. Variceal cause has high mortality, morbidity and reoccurrence rate as compared to non-variceal bleeding causes on every episode of bleeding 10-15% and 3-5% respectively [11,12]. In Pakistan most common cause of UGIB is esophageal varices caused by liver cirrhosis due to hepatitis B and C [13]. According to a survey Pakistan has the second highest number of hepatitis C infection in the world after Egypt.

Management of upper gastrointestinal bleeding is a challenge for physician due to hemodynamic instability, old age, prevalence of liver cirrhosis, chronic hepatitis, lack of emergency endoscopy procedures and gastroenterologists. Aim of this study to access the common etiologies of UGIB on the basis of history, clinical examination and endoscopic findings. This would help the physician to sensitize etiology of bleeding and standardize the treatment plan for patient presenting with UGI bleeding in emergency department of our hospital.

**METHODOLOGY:****STUDY METHOD, PATIENT SELECTION, DATA COLLECTION**

It is descriptive (observational) cross sectional study conducted at emergency department and medical ward of B.V Hospital, Bahawalpur from August 2017 to January 2018. Ethical review letter was approved from ethical review committee of Quaid-e-Azam Medical College. Patients aged from 20 to 65 years presented in emergency department with history of hematemesis, melena or both were enrolled in the study. Total 120 patients were selected after taking informed consent for study. Out of 120, 81 were male and 39 were female patients they were followed throughout the hospital admission of  $8.3 \pm 4.5$  days and called for follow up after 2 weeks. Patient having co-morbidities, advance liver failure, in shock, having signs of lower GI bleeding, less chances of survival and patients who refused hospital admission were excluded from the study.

Provisional diagnosis was made on history of melena, hematemesis, NSAID intake, family history etc. General physical, systemic, and per rectal examination and signs of chronic liver disease were accessed. Endoscopy was done after stabilizing the patient and getting all the necessary investigations like complete blood count, liver function tests, renal parameters, PT/INR, stool examination, complete urine examination, ECG, X-ray chest and ultrasound abdomen. Protocols of endoscopy like hemoglobin level  $> 8\text{mg/dl}$ , normal PT/aPTT and ECG opinion were fulfilled before performing the procedure. In our hospital due to overburden of patients and unavailability of emergency endoscopic facilities, endoscopy is usually done in 3 to 5 days of admission until then patient is managed conservatively with continues infusion of octreotide in case of variceal bleeding and continues infusion of proton pump inhibitor in non-variceal bleeding and antibiotics. Blood transfusions and fresh frozen plasma is given if needed.

A patient's detail form regarding personnel information, presenting complaints, history, clinical findings, and endoscopic findings was maintained. Sample of form is given below:

**Patient's Record Form**

serial no. \_\_\_\_\_

AGE:  
SEX:  
MARITAL STATUS:  
REGISTRATION NO:  
ADDRESS:  
MOBILE NO:  
ADMISSION DATE:  
DISCHARGE DATE:  
SIGNATURE:

PROVISIONAL DIAGNOSIS:

Endoscopic finding:

Biopsy Report:

Presenting complaints:  
Melena  
Hematemesis  
Or Both  
Heartburn/regurgitation  
Weight loss  
Dysphagia  
Altered bowel habit

Any other significant thing  
in history and examination:

Co-morbid illness:

NSAID use:

Anticoagulant use:

Viral marker status by ELISA:

HB level at presentation:

Data was analyzed by using statistical package for social sciences (SPSS) version 18.0. Data was calculated as frequency, percentage and mean standard deviation. Level of significance was not calculated. Non probability sampling technique was used in the study.

**RESULTS:**

Total 120 patients were enrolled and followed for the study, out of them 39/120 (46.8%) were female and 81/120 (67.5) were male. About 59/120 (49%) patients were in 36-50 years of age group, 21 patients were in 20-35 years of age group and remaining 40 were in 51-65 years of age group. Old patient with multi-organ failure and less chances of survival were excluded from the study. The mean duration of hospital stay was  $8.5 \pm 4.6$ . Mean blood transfusion was  $2.3 \pm 1.1$  and on follow up of 1 month the mortality rate was 4/120 (3.33%).

In 57/120 patients the source of bleeding was confirmed was due to esophageal varices after endoscopy. Out of 57, 42 patients were male and 15 were female. 29 patients belong to age group 36-50 years. 19 patients were Hepatitis B positive by ELISA and 32 patients were Hepatitis C positive by ELISA. 62% patients presented with anemia having hemoglobin level below  $6.9 \pm 1.2$  (SD) ml/dL. 40% of patients were having tachycardia, hypotension. 45% of patients were having features of chronic liver disease like ascites, impotence, palmar erythema, spider nevi, easy bruising, flapping tremors, gynecomastia and jaundice. Not every feature of chronic liver disease was present in every patient. Two patients were diagnosed hepatocellular carcinoma (HCC) on further work up.

In 28/120 patients, upper GI bleeding was due to peptic ulcer. On endoscopic findings 15/120 (12.5%) patients were having gastric ulcer and 13/120 (10.83%) were having duodenal ulcer. Biopsy confirmed that duodenal ulcers are mostly due to *H.pylori* infection. Most common site of gastric ulcer was antrum and lesser curvature and in duodenal ulcer was first part of duodenum. 45% of patient presented with hypotension and tachycardia. Most of the patients were having history of loss of appetite and pain epigastrium which usually got worsens with food intake in patients with gastric ulcer. About 53% of patient developed first Melena only. Male to female ratio was 1.54:1. NSAID intake history was positive in 5 patients.

On endoscopy of 8 patients there was finding of esophagitis, esophageal ulcers or mixed picture of both. Out of 8 patients 6 were male 2 were female. 4 patients were from age group 36-50 years. History of heartburn, nausea and dysphagia was common. One HIV positive patient presented with blood in vomitus on his endoscopy there were white patches and ulceration. Biopsy confirmed candida infection. One diagnosed case of multiple myeloma was using alendronate for hypercalcemia. 1 patient presented with history of GERD from last 10 years and was taking on and off medication for that. One female

patient presented with upper gastrointestinal bleeding due to hyperemesis gravidarum, endoscopy confirmed tears in esophagus most probably due to repeated episodes of forceful vomiting.

Sixteen patients were having positive history of NSAID (non-steroidal anti-inflammatory drugs) use for different reasons. On endoscopy there sign of inflammation, mucosal damage and ulceration. 3 of them were chronic user of NSAID or Aspirin due to headache and migraine. 4/16 patients were taking naproxen, piroxicam and other NSAID for body aches and osteoarthritis. These were mostly female and above 50 years of age. One young patient having Rheumatoid arthritis was taking NSAID. 50% of the patients were above 50 years of age most of them have positive history of heartburn, body aches, and use of over the counter drugs from quacks.

Two patients were using warfarin, one of them for mitral stenosis and another due to coronary artery stenting presented with INR >3. Gastric carcinoma was diagnosed in 3 patients after endoscopy and biopsy report and 1 known case of gastric carcinoma already on chemotherapy presented with history of anorexia, weight loss, recurrent history of vomiting containing food particles blood, and history of constipation. One of them was smoker and alcohol drinker for past 15 years and 1 having positive family history of gastric carcinoma. Endoscopy showed that most common site was pylorus in 3/4 patients and lesser curvature of stomach in remaining 1 patient. In 5 patients the etiology of upper GI bleeding remained unknown.

**Table 1:** Gender and age distribution among 120 patients.

	Age 20-35 years	Age 36-50 years	Age 51-65 years
Male	15	39	27
Female	6	20	13

**Table 2:** Viral marker positive by ELISA among 120 patients.

	Male	Female	Total
Hepatitis B	13	6	19
Hepatitis C	19	13	32

**Table 3:** Etiologies of UGIB in different age groups.

	20-35 years	36-50 years	51-65 years
Gastro-esophageal varices	7	29	21
Gastric ulcer	1	8	6
Duodenal ulcer	5	7	1
Esophagitis /Esophageal erosion/ulcer	2	4	2
NSAID induced gastritis	2	6	8
Gastric neoplasms	1	2	1
Coagulopathy	----	2	----
Unknown cause	3	1	1
<b>Total</b>	<b>21</b>	<b>59</b>	<b>40</b>

**DISCUSSION:**

Upper gastrointestinal bleeding (UGIB) is a medical emergency with considerable mortality and morbidity rate. In our study we found that variceal cause of upper gastrointestinal bleeding is more common than non-variceal causes. This study showed different results from the studies done in other part of the world as well as from some studies done in Pakistan. In Western countries the most common etiology of upper gastrointestinal bleeding is peptic ulcer due to high prevalence of *Helicobacter pylori* infection and second most common is gastritis [14-17]. This difference is due to less prevalence of Hepatitis C and Hepatitis B which is found to be the most common underlying cause of chronic liver disease in Pakistan leading to upper gastrointestinal bleeding<sup>18</sup>. In our hospital mostly patients are referred from Lodhran, Yazman, Hasilpur and some other parts of South Punjab. In these areas prevalence of hepatitis infection is more as compared to other regions of Pakistan. Some studies done in Pakistan showed different results, like a study of DHQ hospital Rawalpindi found Erosive gastritis to be the most common cause of upper gastrointestinal bleeding. But some studies in Pakistan showed similar results with esophageal varices to be the most common cause in 44% of the patient and peptic ulcer in 19% [19]. A study conducted in Kenya depicted similar result i.e. esophageal varices was the most common cause of upper gastrointestinal bleeding [20].

Use of over the counter NSAID, smoking, eating junk food and habit of ignoring early symptoms among young, also result in increased incidence of upper gastrointestinal bleeding. To overcome this cause proton pump inhibitors (PPI) and H<sub>2</sub> receptor blockers should be prescribed along with NSAID. The mortality rate among all causes was 4/120 (3.33%) in 30 days. The high morbidity and mortality in patients with upper GI bleeding is due to unavailability of facilities like emergency endoscopic procedure, late intervention due to over-burden of patients, lack of specialized gastroenterologist, financial issues, and prevalence of infectious diseases. In this study of 6 month duration the male cases of upper GI bleeding were more common than female patient with 2:1. The variation in our study from others regarding gender, etiology and outcome could be due to reputation of our hospital as mostly complicated cases are referred to B.V.H for management from most areas of South Punjab. Common age group was found to be 36-50 years. In 5 patients, endoscopy results were normal, as there was no source of bleeding could be identified. This may be due to poorly taken history, missing epistaxis and hemoptysis. Therefore detailed history, gastric lavage

finding, and proper examination can decrease the negative endoscopy results.

**CONCLUSION:**

Esophageal varices is the most common etiology of upper gastrointestinal bleeding due to high prevalence of Hepatitis C and Hepatitis B induced chronic liver disease. Another common cause is gastritis and gastric ulcer induced by use of over-the-counter NSAID. Lack of health facilities, gastroenterologist, overburden of patients, habit of ignoring early symptoms, late referral to specialized health center and financial issues, all these factors play important role in increasing morbidity and mortality rate.

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