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ENDOSCOPIC DIAGNOSES IN PATIENTS WITH UPPER GASTROINTESTINAL BLEEDING

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ABSTRACT

OBJECTIVE: *To determine the causes and risk factors in patients presenting with upper gastrointestinal bleeding at civil hospital Karachi.*
PLACE AND DURATION OF STUDY: *This study was conducted at Medical Unit-I Civil Hospital Karachi, for Six months duration; from 15 March 2007 to 30 Sep 2007.*
STUDY DESIGN: *Descriptive Case Series*
MATERIAL AND METHOD: *This study was conducted on 200 hundred patients of upper gastrointestinal bleeding of either sex admitted in medical department civil hospital Karachi. The patients were first stabilized hemodynamically and were kept on empty stomach for at least 6-12 hours before procedure. Esophagogastroduodenoscopy was performed and Endoscopic findings were recorded.*
RESULTS: *Out of 200 patients included in the study, One hundred ten (110) were male and ninety (90) were female with mean age of these patients were 40.5±15 years. Esophageal varices were present in 119 (59.9%) patients, peptic ulcer bleed in 48 (24%), reflux esophagitis in 15 (7.5%), growth in 4 (2%) and in 14 (7%) found no lesion was found. Regarding risk factors of Esophageal varices 65 (54.6%) patients were +ve for HCV, 31(26.1%) patients were +ve for HBV, 7(5.9%) were positive for both and 16 (13.4%) patients were –ve for both. Regarding risk factors for peptic ulcer disease, 30(62.5%) patients had a history of NSAIDS use, 16 (33.3%) patients were H.Pylori +ve and 2 (4.2%) patient were on antiplatelets.*
CONCLUSION: *From this study it was concluded that, Esophageal Varices was the leading cause of upper gastrointestinal bleeding followed by peptic ulcer disease in our setup.*

KEY WORDS: Endoscopic- Diagnosios-Upper-Gastrointestinal-Bleeding

INTRODUCTION

Acute upper gastrointestinal bleeding is the most medical emergencies and remains a major cause of morbidity and mortality[1],accounting for up to 8% hospital admissions.[2] Upper gastrointestinal bleeding refers to Gastrointestinal blood loss whose origin is proximal to the ligament of Treitz [3].

The prevalence of upper gastrointestinal bleeding is 170 cases per 100,000per year, where as incidence of upper gastrointestinal hemorrhage varies from 50-150 per year in USA and 100-107 per 100,000 per year in UK. [4-6]

The common causes of upper gastrointestinal bleeding in our country according to locally published studies are esophageal varices, duodenal ulcer, gastric ulcers, gastric erosion ,reflux esophagitis, superficial mucosal ulcer, Mallory Weiss tears, Weber rendu syndrome, arteriovenous malformation and neoplasm respectively & in some patients no cause was found. [6-8] The most common cause of upper gastrointestinal bleeding in our setting is esophageal varices as compared to peptic ulcer in western countries.[9-10] The common risk factor of upper GI bleeding are cirrhosis of liver due to hepatitis B & C, while helicobacter pylori infection, non steroidal anti inflammatory drugs in peptic ulcer[11].

In different studies overall mortality ranges from 5-14 %, increasing to 40% or higher in patients with liver disease and this value may raise in patients with advanced age and other co morbidities[7]. Inspite of various studies in Pakistan no such epidemiological data has been formulated.

Endoscopy is the primary diagnostic modality for determining the cause of bleeding. Other uses of endoscopy in patient in the setting of UGIB are for prognostic information and therapeutic intervention to stop bleeding[12] that is associated with a reduction in

blood transfusion requirement and length of intensive care unit and total hospital stay.[8]

In 90% of cases upper gastrointestinal endoscopy is the relatively safe procedure as several large surveys suggest a risk of serious complication of approximately 1 in 500 & risk of death approximately one in 10,000.[2]

The purpose of this study was to determine the causes and risk factors of upper gastrointestinal bleeding in patients presenting at civil hospital Karachi.

Setting & Duration Of Study

The study was conducted at Medical Unit -I Civil Hospital Karachi from 15th March 2007 to 30th September 2007.

MATERIAL AND METHOD:

The study was conducted in 200 patients of upper gastrointestinal bleeding, admitted or referred to Medical unit-1 Civil Hospital Karachi from emergency, other medical units or outpatient department. Risk benefit ratio for endoscopy was discussed with patients and their relatives. Informed as well as written consent was taken. Detailed history was taken, general physical examination like pulse, blood pressure, anemia, jaundice, clubbing, edema, palmer erythema, spider nevi, gynaecomastia, kayser-fleischer ring and examination of oral cavity, abdominal examination was performed. Routine investigations including hemoglobin, hematocrit, platelets, prothrombin time, serology for hepatitis B and C virus and ultrasound abdomen was carried out.

After stabilizing patient hemodynamically, the patient was prepared for endoscopy. Throat was anesthetized with local anesthetic spray/liquid. The endoscopy was performed by trained senior registrar with the help of Olympus GIF-V 160 series to identify the cause of bleeding. Biopsy was taken to look for Helicobacter Pylori infection and malignancy, if necessary.

Data Analysis Procedure:

Statistical packages for social science (SPSS-10) was used to analyze data, Frequency and percentage were computed for categorical variables like age groups, gender, cause of bleed and risk factors for upper gastrointestinal bleeding. Mean, standard deviation and 95% CI were computed for categorical variables like age.

RESULTS

A total of 200 patients were included in the study who presented with upper gastrointestinal bleeding. Mean age of the patients was 40.56 ±15.4 years (95%CI; 38.41 to 42.7). The youngest patient included was 15 years and the oldest being 85 years old man. Out of them one hundred ten (55%) were males and ninety (45%) females, with 1.2: 1 male to female ratio.

Out of 200 patients, in one hundred eighty six (93%) patients different bleeding point were found while 14 (7%) patients no lesion could be seen in the upper gastrointestinal tract on endoscopy and detail of different bleeding lesion (cause) are given in table no 1. Risk factors for upper GI lesion are given in table no. 2 and 3. Regarding risk factors of esophageal varices, 65(54.62%) patients were positive for Anti HCV disease, 31(26.05%) were HBsAg positive, whereas 7(5.9%) were those who had both hepatitis C and B virus disease. Sixteen had negative hepatic virology.

TABLE NO.1

PATTERN/LESION/CAUSE OF UPPER GASTROINTESTINAL BLEEDING

PATTERN / CAUSES		No. of patients with PERCENTAGE
GASTRO-ESOPHAGEAL VARICEAL BLEEDING	Esophageal varices	110 (59.1%)
	Gastro esophageal varices	7 (3.7%)
	Gastric varices	2 (1. 8%)
PEPTIC ULCER DISEASE	Duodenal ulcer	6 (3. 2%)
	Gastric ulcer	5 (2. 6%)
	Gastritis	14 (7. 5%)
	Gastro duodenitis	4 (2.1%)
	Gastritis + gastric erosions	19 (10.2%)
Reflux esophagitis		15 (8.0%)
Growth		4 (2.1%)
Esophageal tumor + Stomach tumor		2 + 2
TOTAL		186 (100%)

TABLE 2

RISK FACTORS OF ESOPHAGEAL VARICES

n=119

Risk Factors	Esophageal Varices	Percentage
Anti HCV	65	54.6%
HBsAg	31	26.1%
Both Negative	16	13.4%
Both Positive	07	5.9%

TABLE 3

RISK FACTORS OF PEPTIC ULCER DISEASE

n=48

Risk Factors	no: of patients	Percent
NSAIDS	30	62.5%
Helicobacter Pylori	16	33.3%
Anti platelets	2	4.2%

DISCUSSION

Acute gastrointestinal bleeding is one of the serious gastrointestinal/medical emergencies. Acute upper gastrointestinal tract bleeding is associated with considerable morbidity and mortality rates (13%), as well as the enormous financial burden on health services[13].

Patients with severe acute gastrointestinal

bleeding are seriously ill and require proper assessment and intensive monitoring of their vitals and clinical progress[14]. Urgent endoscopy in gastrointestinal tract bleeding is an essential part of a complex medical care. It is not only reliable in identifying the cause of bleeding, but it enables to start therapeutic intervention immediately and assessing the prognosis of a patient[15]
The study was conducted in 200 patients who presented with acute upper gastrointestinal bleeding at Civil Hospital Karachi.
In our study 110 (55%) were male and 90 (45%) were female (male to female ratio being (1.2: 1). This male preponderance was also noted in most of the local studies. This male predominance correlates with various studies conducted in Pakistan as in a study carried out by Masood-ur-Rehman and associate[16] in Peshawar showed that out of 432 patient 61.5% were male and 38.5% female.
In another study conducted by Nasir Khokhar et al[17] and Muhammad Atif Qureshi et al[18] also concluded that number of male patients were greater than that of females in Pakistan.
Mean age of the patients was 40.56 ±15.4 years. 65% of patients were between 20-50 years of age, this was similar to local study by Sabir et al[19]. Peak incidence in western countries is at 5th and 6th decade as mentioned by Fabrizio Parente et al[5] and Golanova J et al[15]. This difference could be due to higher average life span in western population.
An alarming aspect of my study is relatively younger age of presentation. Majority of patient with esophageal varices were in age group 20-30 years (22%). This early age presentation was not found in any local or international study as far as literature was searched, the reason may be the more prevalence of cirrhosis of liver at younger age.
In our study, bleeding varices was the commonest cause of acute upper gastrointestinal hemorrhage (59.9%) in our region. This is similar to majority of studies carried out in Pakistan by AW Chaudhary study in 892 subjects at Rahim yar khan[8], Liaquat Ali et al [20], Abbas Khan et al [11] at Peshawar all concluded that esophageal Varices is the commonest cause of upper gastrointestinal bleeding.
This can be explained by the much higher incidence of cirrhosis liver due to Hepatitis B and C viruses in our country compared to that in Western countries.
Other local studies showed the peptic ulcer and gastritis as the leading cause of acute upper gastrointestinal bleeding[16, 21].
In most of the international data the commonest cause of upper gastrointestinal bleeding in western literature being the peptic ulcer disease as described by Boonpongmanee et al[22] and Ertekin C et al[23].
Although few international studies, showed esophageal varices as the leading cause of acute upper gastrointestinal haemorrhage like Misra SP et al[24] in Allahabad, Lule GN et al [25]in Kenya and Ahmed et al[26] in Saudi Arabia.
In our study peptic ulcer disease was the second commonest cause of upper GI bleeding.
Peptic ulcer was the commonest cause in a study done in 2097 patient by Silverstein FE et al[27] in USA. Another study by Rockall TA et al [28] in UK, also Wilcox CM et al [29] showed peptic ulcer is the most frequent causes of upper GI haemorrhage.
Similarly other studies done in Spain [30], Malaysia [31] and France [32] showed same result.
Gastro esophageal reflux disease was the third most common cause of bleeding in this study which is relatively less common cause in the USA[33]. Growth in esophagus and stomach presenting with bleed was in 4 cases in this study, similar result found in study in USA[34] by Sampliner RE. But in Japan and Far East this was the most frequent cause of upper gastrointestinal bleeding[35].
Studies conducted by Iqbal Hussain[36] and Qureshi[21] gastric carcinoma caused 8% and 6% of total cases of upper gastrointestinal haemorrhage, as compared to 1% found in our study. Interestingly a good proportion of patients with cancer (four patients of gastric carcinoma and one patient of carcinoma esophagus) belonged to Afghanistan.
Cirrhosis is fairly common problem in Pakistan and cirrhotic patient take a good proportion of hospital beds in any acute medical units[11].
All the patient with variceal bleeding were screened for viral serology. Among 119 with cirrhosis and portal hypertension 65(54.6%) were HCV +ve and 31 patients (26.1%) were positive for hepatitis B virus. 8 patient (5.8%) were positive for both HBV and HCV. 16 patients (13.4%) were negative for hepatitis B & C serology. This increased prevalence of HCV and HBV is because of lack of awareness on part of patient and also no proper immunization program on part of government.
Similar viral pattern was observed in other studies by Abbas Khan and associates[11], Jafri WMS[37] and Nasir Khokhar et al[17].
Transfusion of unscreened blood, reuse of disposable syringes, sharing of needles with drug addicts, sharing of razors, tooth brushes and nail cutters ear piercing tattooing, acupuncture, kissing and sexual contact, dental treatment and major surgical procedures were the main risk factors for HBV & HCV infection transmission as described by Muhammad Sheraz et al[38].
Use of non-steroid anti-inflammatory drugs (NSAIDs) and Helicobacter pylori (Hp) infection are two most important independent risk factors involved in the pathogenesis in peptic ulcer disease. It is estimated that up to 90% of all peptic ulcers result from the effect of one or both of these factors. Alcoholic beverages also increase the risk the incidence of acute UGIB among NSAID users[39].
Regarding the risk factors of Peptic ulcer disease out of 48 patients, 32 (62.5%) had history of use of non-steroidal anti inflammatory drug (NSAIDs) like ibuprofen, aspirin and mefenamic acid for headache, fever and various painful condition of the body and Helicobacter pylori infection in 16 (33.3%) in our study as most of patient belong to poor social class. History of alcohol abuse was not present in any patient; this finding may be due to religious prohibitions.
With the introduction of upper gastrointestinal endoscopy, source of bleeding can be detected in more than 90% of cases[40].
Endoscopy was helpful in identifying the bleeding in 186 (93%) similar yield on endoscopy was reported by others [41,42].
Factors such as delay in referral for endoscopy and pre endoscopic treatment with potent anti ulcer therapy may be responsible for it [43].
Bias and limitations of my study are that This study was conducted in a single hospital. Sample size was small and majority of patient in our study belongs to low socioeconomic group so the findings cannot be generalized in all groups.

CONCLUSIONS:

From all of this, the following conclusions have been reached:
Esophageal varices were found to be the commonest cause of acute upper gastrointestinal haemorrhage in cirrhotic patients followed by Peptic ulcer disease and Gastroesophageal reflux disease in our region.
The most common risk factors of Esophageal Varices were Cirrhosis of the Liver due to Viral Hepatitis C followed by Viral Hepatitis B.
Most of patients were Males and belonging to Younger age group.
So community should be educated about mode of transmission of viral hepatitis and

preventive measures like use of new, sterile and good quality syringes, safe blood transfusion, and safe sex should be carried out.

Acute upper gastrointestinal bleeding due to peptic ulcer disease can be prevented through strict and judicious use of aspirin and NSAIDs, eradication of H.pylori infection and antiulcer therapy should be given in high risk patients who need chronic NSAIDs and/or aspirin therapy.

RECOMMENDATION:

Upper gastrointestinal endoscopy is an effective and safe procedure; it is the only method by which we can detect the cause of upper gastrointestinal bleeding, so it should be performed in each patient presenting with upper gastrointestinal bleeding.

The message for my colleague, working in the medical units is that when they receive the patient with upper gastrointestinal bleeding, keep in mind the top possibility of esophageal varices, the patients should be managed aggressively with pharmacological therapy and intravenous volume expanders. As soon as patient becomes stable Esophagogastroduodenoscopy should be performed.

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