Study of Factors Associated with Outcome of Non-Variceal Ugi Bleed

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***Abstract*- Backround:** Nonvariceal UGIB remains a common emergency for Gastroenterologists with an annual incidence of 50 to150 per 100,000 of the population. Mortality from UGIB is around 10% and may reach 35% in patients with another medical condition. Comorbidity remains an independent risk factor for UGIB mortality, which is often attributable to increasing age and associated illness. The risk of death following admission to hospital for gastrointestinal bleeding has been quantified by Rockall et al. We studied here factors associated with outcome of patients.

OBJECTIVES: To study of factors associated with outcome of non variceal upper gastrointestinal bleed.

METHODS: The study was carried out over a period of 18 months. The total number of patients screened were 372, out of which 280 patients were endoscopically proven to have variceal bleeding and were excluded. The remaining102 cases were initially included in the study. All these 92 patients were subjected to detailed clinical history and examination. After initial resuscitation, the patients were subjected to endoscopic examination. Within 24 hours of admission, the clinical, biochemical, hematological, endoscopic and radiological parameters were recorded

RESULTS: All these 92 patients were subjected to detailed clinical history and examination. Within 24 hours of admission, the clinical, demographic, biochemical, hematological, endoscopic and radiological parameters were recorded. Sixty seven (72.8%) patients were male while 25(27.2%) were females. The male female ratio of the patients was 2.681. The mean age of the Patients was 48.97 years and the range was 18-82 years.. Erosive mucosal disease was the commonest cause of nonvariceal upper GI bleed in our patient group. It constituted 34.8% ,32 patients) of the total.

CONCLUSION: On univariate analysis, the various parameters that were found to increase the adverse outcome were age more than 60 years, hematemesis, epigastric pain for less than 48 hours, shock (systolic BP < 100 mmHg), postural drop in blood pressure and comorbid conditions like ischemic heart disease, Chronic obstructive lung disease and Chronic liver disease.The factors that did not correlate with an increased risk of adverse outcome were short hospital stay (<3 days), malena, pre-endoscopic Rockall score <4 and a post-endoscopic Rockall score <8.

I. INTRODUCTION

Nonvariceal upper gastrointestinal bleeding remains a common emergency for gastroenterologists with an annual incidence of 50 to150 per 100,000 of the population. Mortality from UGIB is around 10% and may reach 35% in patients with another medical condition. Comorbidity remains an independent risk factor for UGIB mortality, which is often attributable to increasing age and associated illness. The risk of death following admission to hospital for gastrointestinal bleeding has been quantified by Rockall et al. Independent factors with a poor outcome were identified from data derived from a large no. of patients whose clinical course was observed following hospital admission.

Peptic ulcer is the cornmonest cause of acute non-variceal upper bleeding accounting for approximately half of the case. Other of non-variceal GI bleeding include MW tear, erosive gastritis or duodenitis, esophagitis, of upper gastrointestinal tract, angiodysplasia, vascular malformation.

There is controversy regarding the relative contribution of peptic ulcer bleeding to overall UGIB rates, recent data from the Clinical Outcome Research Initiative suggest that the frequency of peptic ulcer as a cause of UGIB may have been overestimated. In 7822 endoscopic performed for UGIB, peptic ulcer was the likely cause in only 1610 patients (20.6%).

Data from the Canadian Registry on Nonvariceal Upper Gastrointestinal Bleeding and Endoscopy, however, identified peptic ulcers in 50% of patients presenting to community and tertiary care institutions between 199 and 2U2. Regardless of the historical frequency of peptic ulcer bleeding, the incidence of peptic ulcer disease should decline with more, widespread Helicobacter pylori eradication. In addition, widespread cycloxygenase-2 specific non-steroidal anti-inflammatory' drugs may also affect peptic ulcer risk.

Over the past 10 years the treatment of choice for appropriate bleeding patient has been endoscopic therapy, and surgical intervention has been reserved for the failure of therapeutic endoscopy. Nevertheless, optimum management still relies very much on a team approach with appropriate use of drug therapy, endoscopic intervention, and surgery. Management may be best undertaken in a specialized unit in which patient is treated using agreed protocols and guidelines with endoscopy undertaken once appropriate resuscitation has been achieved and with management decisions based upon endoscopic and surgical opinions. Relatively weak evidence derived from comparison of results in case series with historical controls suggests that this

approach may achieve lower hospital mortality and more efficient use of resources than management by generalists working in conventional medical or surgical units.Data is scarce regarding factors associated with poor outcome of patients with UGI bleed especially non variceal bleed from this part of the county. The principal objectives of this study are:

(i) To study the etiology of non variceal UGI bleed in our tertiary care center.

(ii) Thorough clinical, biochemical and endoscopic evaluation of all patients with non variceal UGI bleed

(iii) To study various factors that affect outcome of non variceal UGI bleed

(iv) To look for any significant relation of H. pylori with bleeding peptic ulcer.

II. METHODS

Patient Selection: An attempt to prospectively analyze patients admitted to Department of Gastroenterology of Sir Sunderlal Hospital, Varanasi with nonvariceal UGI bleeding is made. The study was carried out over a period of 18 months (between December 2015 and June 2017). The total number of patients screened were 372, out of which 280 patients were endoscopically proven to have variceal bleeding and were excluded. The remaining102 cases were initially included in the study. In another 10 cases, an endoscopic diagnosis could not be reached and hence they were excluded from the study.

All these 92 patients were subjected to detailed clinical history and examination. After initial resuscitation, the patients were subjected to endoscopic examination. Within 24 hours of admission, the clinical, biochemical, hematological, endoscopic and radiological parameters were recorded. The study protocol was approved by the Ethics Committee of the Institute and written consent was obtained from each patient.

Patient Assessment:

When a patient is found to have one of the manifestations of upper gastrointestinal bleeding, the first step in management was to assess the severity of bleeding. Assessment of patient's hemodynamics was emphasized.

Hemodynamics, vital signs, and blood loss

Ryles tube was introduced in all patients to assess active bleeding and Perform gastric lavage. Presence of blood stained nasogastric aspirate was used to predict presence of high risk lesions. Endoscopy was performed within 24 hours of hospital admission after resuscitation.

Emergency Resuscitation:

In more severe bleeding (i.e. unstable vital signs and evidence of ongoing bleeding), the more vigorous resuscitation efforts were made. In Patients who have any evidence of hemodynamic instability, two large bore intravenous catheters was placed immediately. Colloid (normal saline or ringer lactate solution) was infused as rapidly as the patients cardiovascular system allows to restore the vital signs toward normal. ICU monitoring was done in hemodynamically unstable patients. Supplemental oxygen by nasal canula or facemask was given liberally. Vital signs and urine output was monitored closely, and in selected situations for patients with underlying cardiopulmonaw disease, central venous monitoring was done.

Virtually all patients with unstable vital signs had significant blood loss and required blood transfusion. If the patient had subnormal tissue oxygenation, transfusion was done aggressively. Patients with continued instability in vital signs, continued bleeding, symptoms of poor tissue oxygenation or persistently low hematocrit values (20%-25%) were transfused continuously.

Biochemical Investigations:

Hemoglobin concentration, blood urea, serum creatinine, glucose, serum sodium and potassium concentrations were done as emergency investigations immediately after admission. Other biochemical examinations were performed on the following day.

Upper Gastrointestinal Endoscopy:

Endoscopic examination was carried out using forward viewing video endoscopes (Olympus GIF-V-70). Endoscopy was performed after resuscitation of patients. In case of PUD, biopsy sample were taken from antrum and corpus for each test i.e. for rapid urease test and histology.

Rapid Urease Test:

Rapid urease reagent was prepared by adding 2 gm urea in 10 ml phenol red, 20 mg sodium azide and sodium phosphate buffer. The pH was adjusted to 6.5 before use. 1 ml of reagent was added to test tube. The specimen was then placed in test tube and kept at 37^{o}c for 1 hour. A change Of color to pink was considered as positive and yellow color as negative.

Histology:

Paraffin sections were stained with haematoxylin and eosin stains (H&E). Each biopsy specimen was assessed for the presence, type of density of inflammatory infiltrate and the presence of H. pylori. Sydney classification was used to grade the gastritis (mild, moderate and severe).

Endoscopic findings of gastric and duodenal ulcer were recorded using Forrest classification: class IA: active ulcer bleeding presenting as arterial spurting or pulsatile bleeding from the ulcer base; class 1B: milder forms present as continuous oozing either from a visible vessel or from underneath an adherent clot; class 2A: in the absence of active bleeding, the stigmata of recent hemorrhage including a non-bleeding visible vessel seen as a red or whitish-gray elevated lesion at the base of the ulcer; class 2B: an adherent clot covering the base of an ulcer; class 2C: a flat pigmented spot or a black membrane covering the ulcer base; class 3: a clean ulcer bottom (i.e, without vessel nor clot).

Endoscopic therapy was standardized as follows: initial injection of adrenaline around the bleeding lesion (up to a maximum of 20 mL) to achieve a tamponade effect, followed by application of a 3.2-rnm heater probe at settings of 30 J per goal until the achievement of a coaptive effect. This method was used whenever endoscopic stigmata of hemorrhage such as acute spurting, oozing, visible vessel or adherent clots were present. The success of endoscopic hemostasis was defined as the cessation of bleeding together with the achievement of cavitation over the lesion after the application of the heater probe. After endoscopy, the endoscopist filled in a specific form with all the details

concerning the procedure with specific reference to the appearance of bleeding lesions (according to the Forrest's classification) and the hemostatic maneuvers that were undertaken. Epinephrine solution injected and the numbers of pulses with the heater probe whenever employed were recorded. All patients received high dose intravenous PPIs: omeprazole or pantoprazole, 80 mg bolus within 12 hours of endoscopy followed by 8 mg/h for 3 days and then an oral PPI, 40 mg once daily for the remainder of their hospital stay. Patients were closely monitored and underwent clinical reviews with their blood pressure, pulse, respiratory rate, and urine output measured hourly for the first 24 hours followed by close observation for symptoms and signs of recurrent bleeding throughout their stay in the hospital.

Evaluation of Treatment and Prognosis:

Effort was made to follow all patients' data regarding age group, sex Of the Patient, hemoglobin level, blood pressure, duration of hospital stay, hematemesis, melena, hematochezia, RT aspirate, epigastric pain, past history of upper gastrointestinal bleed, investigative work up, blood transfusion requirement, management instituted and outcome. Adverse outcome in the form of rebleed, death and surgery were noted.

The major outcome parameters were rebleeding, surgical intervention, and mortality. Rebleeding was defined as repeated melena, hematemesis or a drop in hemoglobin concentration (>2 g/dL in 24 hours) after a period of stabilization and unexplained by fluid replacement within 28 days of the initial bleeding episode. We performed a second endoscopy to confirm clinical recurrent bleeding which was defined as persistent endoscopic stigmata of acute spurting or oozing, visible vessels or adherent clots with the appearance of blood clots or coffee ground material in the stomach or duodenum. Surgery was performed in those patients whose bleeding could not be stopped by primary endoscopic hemostasis or by a second or third endoscopic therapy. Interventional radiology was not available for patients who did not respond to endoscopic therapy when the study started. The choice of surgery was left to the individual surgeon though gastrectomy was the most preferred operation for the control of ulcer bleeding. The mortality was defined as death within 28 days of the bleeding episode.

III. STATISTICAL ANALYSIS

Data were double entered into a MS Excel database and analysed using SPSS version 13.0 for Windows. Statistical tests were applied so as to ascertain the statistical significance between .the

Variables. Though the correct procedure to identify the responsible factors for adverse outcome can be obtained by logistic regression model, due to the small sample size the results may be invalid. Because of small number of adverse outcomes, Fishers exact probability test has been applied. Only univariate logistic regression model was applied and Odd's ratios with 95% confidence limit are kept.

IV. RESULTS

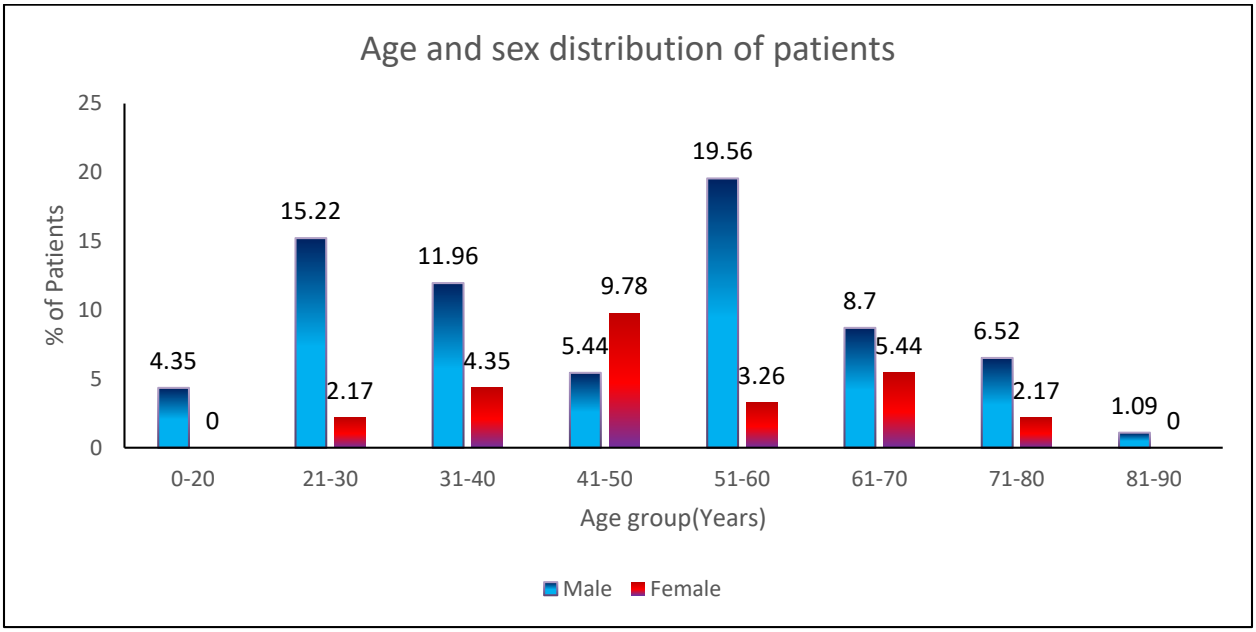
An attempt to prospectively analyze patients admitted to Department of Gastroenterology of Sir Sunderlal Hospital, Varanasi, India with nonvariceal UGI bleeding was made. The study was carried out over a period of 18 months (between December 2015 and June 2017). The total number of patients screened were 372, out of which 280 patients were endoscopically proven to have variceal bleeding and were excluded. The remaining 102 cases were initially included in the study. In another 10 cases, an endoscopic diagnosis could not be reached and hence they were excluded from the study. All these 92 patients were subjected to detailed clinical history and examination. After initial resuscitation, the patients were subjected to endoscopic examination. Within 24 hours of admission, the clinical, demographic, biochemical, hematological, endoscopic and radiological parameters were recorded. The outcome in terms of need for surgery, morbidity and mortality was recorded.

Demographic Profile

Sixty seven (72.8%) patients were male while 25(27.2%) were females. The male female ratio of the patients was 2.681. The mean age of the Patients was 48.97 years and the range was 18-82 years. Majority of the patients (22.82%) belonged to sixth decade. The patient profile is as outlined in Table 1.

Table 1:Age and Sex distribution of patients

Age	Male		Female		Total	
	No.	%	No.	%	No.	%
11-20	4	4.35	0	0	4	4.35
21-30	14	15.22	2	2.17	16	17.39
31-40	11	11.96	4	4.35	15	16.30
41-50	5	5.44	9	9.78	14	15.21
51-60	15	19.56	3	3.26	21	22.82
61-70	8	8.70	5	5.44	13	14.13
71-80	6	6.52	2	2.17	8	8.69
81-90	1	1.09	0	0	1	1.08
Total (%)	67	72.8	25	27.2	92	100
Mean Age	48.97 years					



Clinical Profile:

Fifteen patients (16.30%) had a past history of upper GI bleed. Forty patients (43.48%) gave history of NSAID ingestion with 27 of them consuming the drug within the previous 48 hours. Epigastric pain was present in 18 (19.5%) patients.

The most common presentation of patients was with melena (47.83%) followed by hemetemesis (38.04%). Both hematemesis and melena was Present in 20 patients (21.74%). Twenty one patients (23.1%) presented with shock. Nasogastric aspirate revealed fresh blood in 10 patients (10.9%).

Table 2:Clinical parameters of patients at the time of hospitalizations

Parameter	Number	%
Clinical History		
Past history of UGI bleed	15	16.30
History of NSAID ingestion <48 hours	27	29.35
History of NSAID ingestion <48 hours	13	14.13
Clinical presentation		
Melena	44	47.83
Hemetemesis	35	38.04
Hemetemesis+Melena	20	21.74
Hematochezia	8	8.70
Epigastric pain	18	19.50
Blood in Ryles tube aspirate	10	10.90

Note: More than one feature was present in each patient.

Diclofenac was the commonest NSAID implicated in upper GI bleed in our patients. It constituted 25% of the various NSAID associated bleeds. Naproxen associated upper GI bleed was seen in 15% of patients. Ibuprofen- Paracetamol combination and ibuprofen alone was associated with upper GI bleed in 5 patients each as depicted in Table 3.

Nature of NSAID	Number of patient	%
Diclofenac	10	25
Naproxen	6	15
Ibuprofen+Paracetamol	5	12.5
Ibuprofen	5	12.5
Aspirin	4	10
Etoricoxib	3	7.5
Indomethacin	3	7.5
Clopidogrel	2	5.0
Mefenamic acid	1	2.5
Ketorolac	1	2.5
Total	40	100

A total of 21(23.1%) patients with upper GI bleed presented with shock. Majority of patients (56%) who presented with shock belonged to the duodenal ulcer group. Esophagitis, vascular ectasia and erosive mucosal disease was less frequently associated with shock.

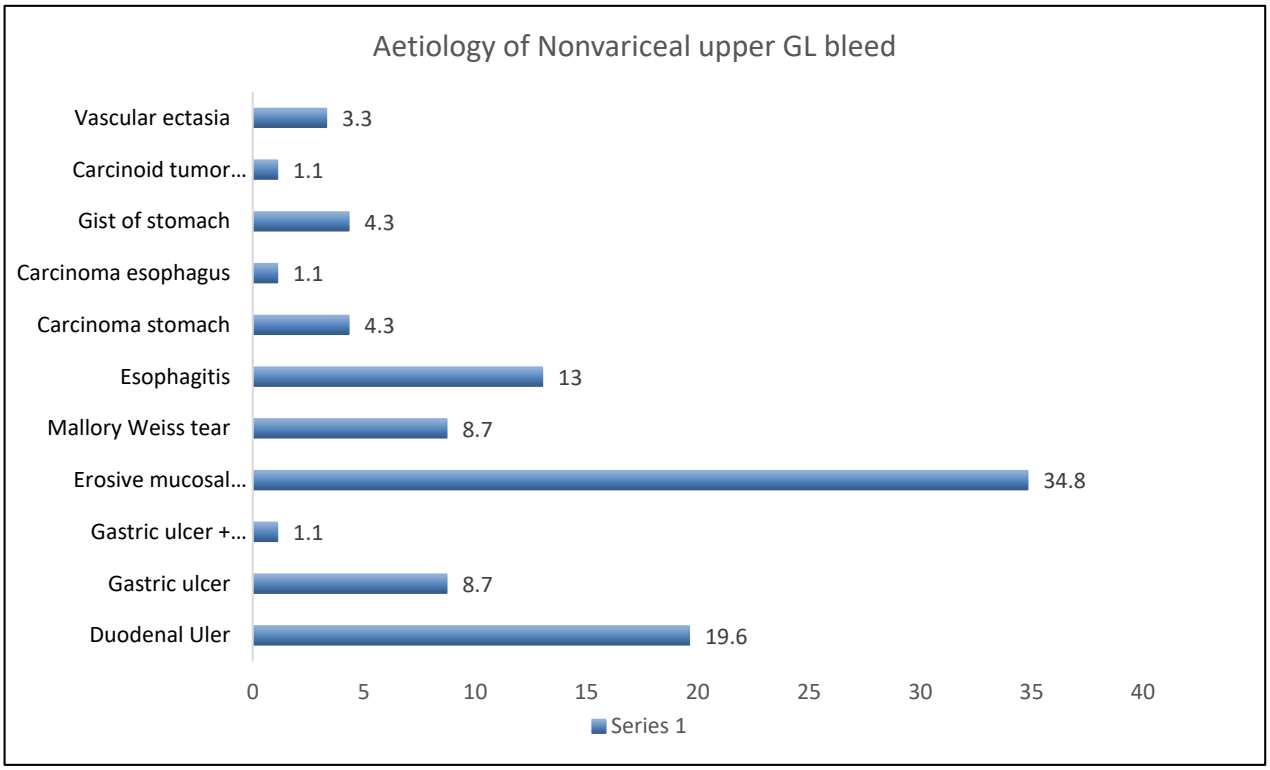
Aetiological Profile:

Erosive mucosal disease was the commonest cause of nonvariceal upper GI bleed in our patient group. It constituted 34.8% 32 patients) of the total. It was followed by duodenal ulcer bleed 19.6%) and esophagitis 13.0%) respectively. Male predominance was noted in both erosive mucosal disease and duodenal ulcer. Malignancies of upper GI tract constituted only 5.4% of the total causes of nonvariceal bleed. Carcinoid tumor of stomach was the cause of upper GI bleed in 1 patient. The detailed distribution is shown in Table 5.

Table 5: Aetiology of Nonvariceal upper GI bleed

Etiology	Male	Female	Total	%
Duodenal ulcer	14	4	18	19.6
Gastric ulcer	5	3	8	8.7
Gastric ulcer + Duodenal ulcer	1	0	1	1.1
Erosive mucosal disease	26	6	32	34.8
Mallory Weiss tear	5	3	8	8.7
Esophagitis	9	3	12	13.0
Carcinoma stomach	3	1	4	4.3
Carcinoma esophagus	0	1	1	1.1
GIST of stomach	2	2	4	4.3
Carcinoid tumor stomach	1	0	1	1.1
Vascular ectasia	1	2	3	3.3
Total	67	25	92	100

ENDOSCOPIC STIGMA



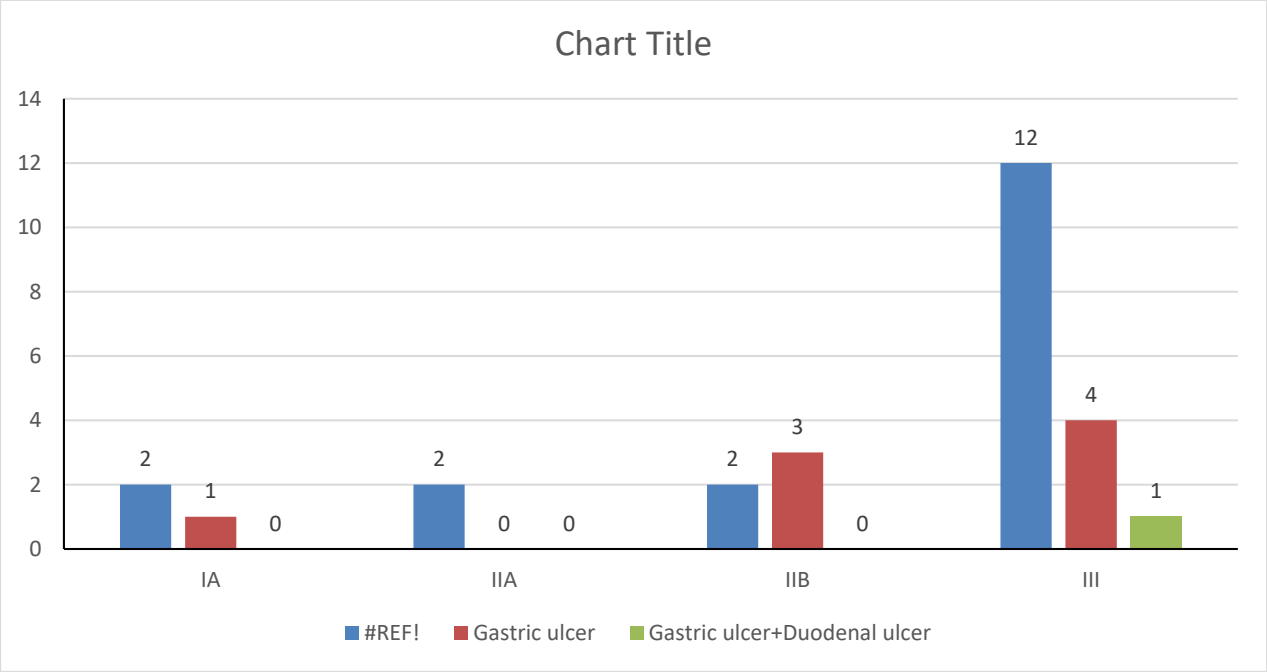
Forrest Classification:

Of the 18 patients with bleeding duodenal ulcer, 12 could be classified into Forrest Ill based on endoscopic stigmata. Of the 27 patients with peptic ulcer bleed, 17 patients were categorized into Forrest Ill. Three patients presented with active bleed (ie.Forrest class IA) and shock leading to death as shown in Table 7.

Table 7: Forrest classification of peptic Ulcer disease based on endoscopic stigmata

Endoscopic feature	Forest classification				
	IA	IIA	IIB	III	Total
Duodenal ulcer	2	2	2	12	18
Gastric ulcer	1	0	3	4	8
Gastric ulcer+ Duodenal ulcer	0	0	0	1	1
Total	3	2	5	17	27

Helicobacter pylori Association:



All the patients were assessed for association of H. pylori and peptic ulcer disease. It was detected in 89% of duodenal ulcer patients and 75% Of gastric ulcer patients respectively by using rapid urease test. Histology was positive in 77.8% of duodenal ulcer patients and 87.5% of gastric ulcer patients. Both RUT and histology were positive in 72.2% of duodenal ulcer and 75% of gastric ulcer patients respectively, thereby confirming the association of helicobacter pylori with the disease as depicted in Table 8.

Etioloy	RUT (%)	Histology (%)	RUT+Histology (%)
Duodenal ulcer	16(88.89)	14(77.8)	13(72.2)
Gastric ulcer	6(75)	7(87.5)	6(75)
Gastric ulcer+Duodenal Ulcer	0	0	0
Total	22	21	19

Hematological and biochemical profile

The mean hemoglobin value of the patients who presented with nonvariceal upper GI bleed was 7.77±1.26 g/dl. Erosive mucosal disease and esophagitis had mean hemoglobin values approximating 8.30 g/dl. Malignancies of upper GI tract presented with severe anemia. Thirteen patients (14.13%) presented with elevated blood urea and serum creatinine levels. However all other parameters including liver function tests were normal in the patients.

Outcome of the Patients:

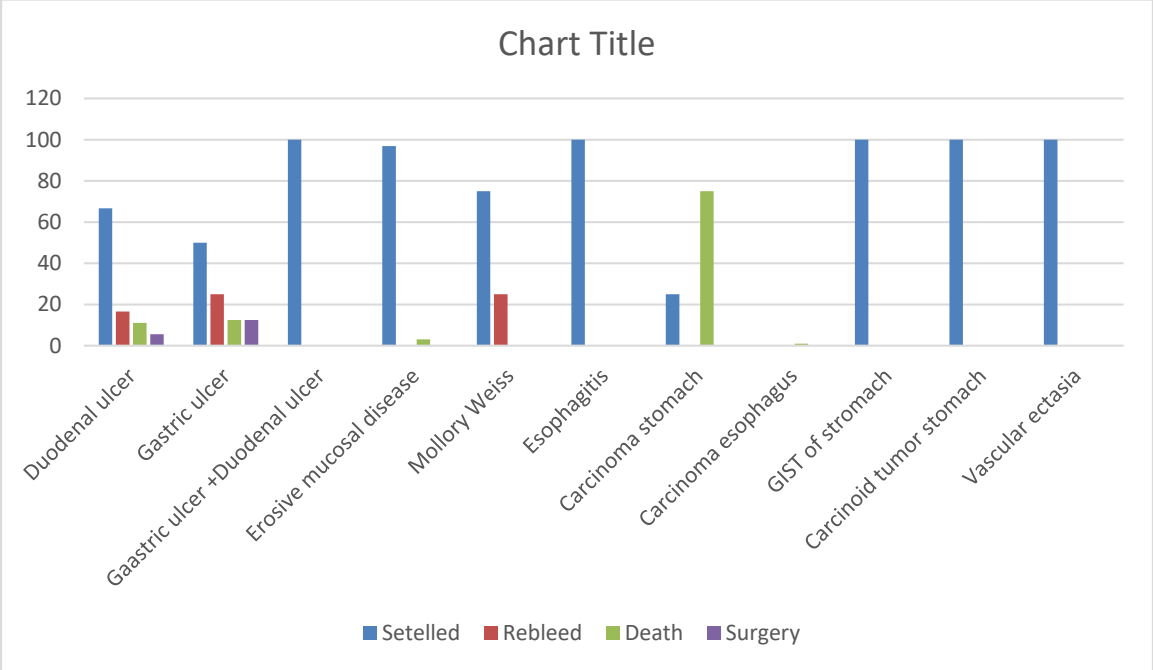
Seventy five patients (81.5%) who presented with nonvariceal upper Gl bleed settled without any adverse outcome. Seven patients (7.6%) rebled out of which 3 had duodenal ulcer, 2 had gastric ulcer and 2 had Mallory Weiss tear. Of the eight patients (8.7%) who died 2 had duodenal ulcer, 1 had gastric ulcer, 3 had carcinoma stomach,l had carcinoma esophagus and 1 had erosive mucosal disease respectively. Two patients (22%) underwent surgery to control the bleed. The patient with gastric ulcer bleed underwent partial gastrectomy while the one with duodenal ulcer bleed underwent underrunning of vessel. Of the 32 patients with erosive mucosal disease, one patient (3.1%) died.

Etiology	Settled (%)	Rebleed (%)	Death (%)	Surgery (%)
Duodenal ulcer	12(66.7)	3(16.6)	2(11.1)	1(5.6)
Gastric ulcer	4(50.0)	2(25.0)	1(12.5)	1(12.5)

Gastric ulcer+Duodenal ulcer	1(100)	0	0	0
Erosive mucosal disease	31(96.9)	0	1(3.1)	0
Mallory Weiss tear	6(75.0)	2(25.0)	0	0
Esophagitis	12(100)	0	0	0
Carcinoma stomach	1(25.0)	0	3(75.0)	0
Carcinoma esophagus	0	0	1(100)	0
GIST of stomach	4(100)	0	0	0
Carcinoid tumor stomach	1(100)	0	0	0
Vascular ectasia	3(100)	0	0	0
Total	75(81.5)	7(7.6)	8(8.7)	2(2.2)

Univariate Analysis of Various Parameters:

The various parameters that were found to increase the risk of adverse outcome were age more than 60 years, hematemesis, epigastric pain for less than 48 hours, shock (systolic BP < 100 mm Hg), postural drop in BP and comorbid conditions like ischemic heart disease, chronic obstructive lung disease and chronic liver disease. Among the factors that did not show a significant correlation with adverse outcome were were short hospital stay(<3 days),Diastolic P <70 mmhg ,a pre endoscopic Rockall score <4 and a post endoscopic Rockall score less than 8.



We have applied univariate logistic regression model in patient with non variceal upper GI bleed and results are shown in Table 10 and 11.

Table 10: Univariate logistic regression model

si no	Variable at presentation	Odds ratio	95%CL
1	Age>60 yrs.	3.865	2.289-5.594
2	Hemetemesis	12.00	3.127-46.057
3	Melena	0.047	0.006-0.369
4	Hemetemesis+Melena	1.667	0.509-5.461
5	Epigastric pain for <48 hrs.	3.563	1.198-10.594
6	Systolic BP<100 mm Hg	11.917	3.6-39.445
7	Diastolic BP<70 mm Hg	11.897	2.533-55.875

8	Hospital stay for < 3 days	0.039	0.006-0.313
9	Pre endoscopic Rockall<4	0.050	0.009-0.281
10	Post endoscopic Rockall<8	0.044	0.006-0.425
11	bchemic heart disease	32.444	5.944-177.096
12	chronic liver disease	7.444	22.38-24.763
13		20.00	5.315-75.257
14		24.50	6.094-98.501
15		44.00	5.474-353.643

Table 11:Significant univariate correlates of adverse outcome

SI NO	Variable at presentation	Advance outcome present (n=17)	Advance outcome absent (n=75)	p value
1	Hemetemesis	14(82.4%)	21(28%)	<0.001
2	Epigastric pain for <48 hrs.	9(52.9%)	18(24%)	<0.001
3	Systolic BP<100 mm Hg	11(64%)	10(13.3%)	<0.001
4	Ischemic heart disease	8(47.1%)	2(2.27%)	<0.001
5	COPD	8(47.1%)	8(10.7%)	0.001
6	Chronic liver disease	10(58.8%)	5(6.7%)	<0.001
7	Comorbid conditions	14(82.4%)	12(16%)	<0.001
8	Postural drop in BP	16(94.1%)	20(26.7%)	<0.001

The various parameters that were found to significantly increased the risk of adverse outcome were age>60 years,hematemesis,epigastric pain for <48 hours,systolic BP<100 mmhg,postural drop in BP and comorbid condition like ischemic heart disease,chronic obstructive lung disease and chronic liver disease.among the factors that did not show a significant correlation with asdverse outcome were melena,hospital stay of less than 3 days,diastolic P<70 mmhg,a pre endoscopic Rockall score<4 and a post endoscopic Rockall score <8.

V. DISCUSSION:

Bleeding from upper GI tract is a common medical emergency; but despite advances in techniques for diagnosis, resuscitation, endoscopic and surgical management, the overall mortality has remained at around 10% and may reach 35% in patients hospitalized with other medical conditions. Serious comorbidity remains an independent risk factor for upper GI bleed mortality, which is often attributable to increasing age and associated illness (Rockall et al,1995). In this study, clinical, endoscopic and biochemical features of the patients with upper GI bleed and its adverse outcome with regards to mortality was analysed.

The study was carried out over a period of 18 months (between December 2004 and June 2006) in Department of Gastroenterology of Sir Sunderlal Hospital, Varanasi, India. The total number of patients screened was 372, out of which 280 patients were endoscopically proven to have variceal bleeding and were excluded. The remaining 102 cases were initially included in the study. In another 10 cases, an endoscopic diagnosis could not be reached and hence they were excluded from the study. All these 92 Patients were subjected to detailed clinical history and examination. After initial resuscitation, the patients were subjected to endoscopic examination. Within 24 hours of admission, the clinical, demographic, biochemical, hematological, endoscopic and radiological parameters were recorded. The OUtcome in terms of need for surgery, morbidity and mortality was recorded.

Sixty seven (72.8%) patients were male while 25(27%) were females. The male female ratio of the patients was 2.68:1. Similar overall sex distribution was also reported by other Indian workers (Misra et al, 1984; Tandon et al, 1977; Champakam et al 1982). The age range was 18-82 years with a mean age of 48.97 years. Twenty one (22.82%) patients belonged to sixth decade. A study of 1869 patients with nonvariceal bleed by Barkun et al in 2004 (RUGBE), had a mean age of 66 years with a male predominance. Patients over 80 years of age accounted for about 25% of all nonvariceal upper GI bleeds and 33% of upper GI bleeds in hospitalized patients (Rockall et al, 1995). A study by Gabriel Rodrigues et al in south India in 2001 found that most of their patients belonged to a mean age of 48.5 years. Our study showed results that were consistent with those of the study from south India.Erosive mucosal disease was the commonest cause of nonvariceal upper GI bleed in our patient group with 32 patients (34.8%), followed by duodenal ulcer bleed (19.6%) and esophagitis (13.0%). Male predominance was noted in both

erosive mucosal disease and duodenal ulcer. Malignancies of upper GI tract constituted 5.4% of the total causes of nonvariceal bleed. Advanced patient age increases the likelihood of a gastrointestinal neoplasm as a possible etiology (Lieberman D et al, 2004; Schmidt et al, 2005). In an analysis of CORI database between December 1999 and July 2001, endoscopy Performed for acute upper GI bleed found a duodenal or gastric ulcer in only 1610 (20.6%) of 7822 patients. This study repofted mucosal abnormality as being the most common endoscopic finding (40%) in persons with acute nonvariceal upper GI bleed. Mishra et al in 1984 reported a high incidence Of nonvariceal bleed due to superficial mucosal lesions (40%). Our results were similar to those obtained by CORI database and Mishra et al.

Esophagitis was present on endoscopy in 12 patients with 9 of them being males. Eight cases were of Grade D esophagitis. Two cases were of Grade C and one case each had Grade A and B esophagitis. The literature is scanty on grading of GERD and UGI bleed in our country.

Most of the patients with Mallory Weiss tear had spontaneous hernostasis. One patient presented with shock and two patients rebled. The patient who presented with shock was successfully resuscitated. Most bleeding episodes caused by Mallory Weiss tear are self-limited and do not require endoscopic hemostasis (Morales P et al, 2003). Our results are consistent with that obtained in other studies where Mallory Weiss tear is considered to be self-limited. Nevertheless, some cases are severe enough to require blood transfusions, endoscopic hemostasis, interventional radiology or surgery. In our patients of Mallory Weiss tear, none required surgery.

Malignancies of the upper GI tract were present in 5.4% of our patients. Out of the 4 patients with carcinoma stomach, 3 died. The patient with carcinoma esophagus had severe bleeding and anemia which led to death. Neoplasms, both malignant and benign are infrequent causes of nonvariceal upper GI bleed and comprise less than 5% of all upper Gl bleed cases (Savides et al, 1996). Our study showed similar results.

Gastrointestinal stromal tumors constituted 4.3% of the patients with nonvariceal bleed. GIST rarely present with upper GI bleed. They are encountered in well under 1% of routine endoscopic examinations (Hedenbro JL et al, 1991). Endoscopic examination of GIST revealed firm, bland protrusion into the lumen of stomach situated in greater curvature with central ulceration in two cases. The lesion was umbilicated and situated in the antrum of the stomach in the rest. Histology revealed features suggestive of gastrointestinal stromal tumor.

Carcinoid tumor of stomach was the cause of upper GI bleed in one patient. There have been five case reports of gastric carcinoid presenting as upper gastrointestinal bleeding worldwide (Roncoroni L et al, 1997; Honig U et al, 1974; Purcell R et al, 1988; The CH et al, 1994; Dallal HJ et al, 2003). But, there have been no such reports from Indian subcontinent. Krishnamurthy et al in 1996 did a clinicopathological study of gastric carcinoids. Four of his patients presented with abdominal pain and none had presented with upper gastrointestinal bleed.

Vascular ectasias were present in 3 patients in our study group with two of them being women. One patient had chronic renal failure. Vascular ectasias are the underlying etiology of upper GI bleed in approximately 510% of cases and severity of bleeding can also range from trivial to severe. Vascular ectasias are commonly associated with chronic renal insufficiency or failure (Zuckerman et al, 1985).

The most common presentation of patients was with melena (47.83%) followed by hemetemesis (38.04%). Both hemetemesis and melena was present in 20 patients (21.74%). Fifteen patients (16.30%) had a past history of upper GI bleed. Nasogastric aspirate revealed fresh blood in 10 patients (10.9%). Forty patients gave history of NSAID ingestion with 27 ofthem consuming the drug within the previous 48 hours. A study by Barkun et al (2004) in 1869 patients found that melena was present in 69%, hemetemesis in 30% and hematochezia in 15% of the patients.

Diclofenac was the commonest NSAID implicated in upper GI bleed in our patients. It constituted 25% of the various NSAID associated bleeds. Naproxen associated upper GI bleed was seen in 15% of patients. Ibuprofenparacetamol combination and ibuprofen alone was associated with upper GI bleed in 5 patients each. Armstrong et al in 1987 found that 60% of 235 consecutive patients presenting with a significant peptic ulcer complication were taking NSAIDs and nearly 80% of all ulcer related deaths occurred in NSAID users. Misra et al in 1984 found that 57% of patients with erosive mucosal disease had consumed some form of NSAID prior to bleed. Holman et al in 1990 reported 34% incidence of drug intake in all their upper GI bleed patients and only 17% incidence of drug ingestion in peptic ulcer patients. Aspirin, alcohol and other NSAIDs have long been implicated as a cause of upper GI bleed (Ivey and Roth in 1985). Langman et al (1970) in a cumulative analysis found that aspirin ingestion in controls ranged from 11-26% whereas in patients with bleeding, the range was 51-56%. Salter in 1978 emphasized the need to ask whether the patient has taken any medications in last 48-72 hours of the onset of hemorrhage.

A total of 23.1% of patients with upper GI bleed presented with shock (systolic blood pressure less than 100 mm of Hg). Fifty six percent of the patients with duodenal ulcer presented with shock. Esophagitis, vascular ectasia and erosive mucosal disease rarely presented with shock.

Of the 18 patients with bleeding duodenal ulcer, 12(66.67%) could be classified into Forrest Ill based on endoscopic stigmata. Of the 27 patients with peptic ulcer bleed, 17 patients (63%) were categorized into Forrest Ill.Three patients (11.1%) presented with active bleed (i.e. Forrest class IA) and shock leading to death. In a study by Laine et al in 1994 it was found that Forrest Ill and Forrest IA had a prevalence of 42% and 18% respectively.

We also studied the association of helicobacter pylori with bleeding peptic ulcer. In duodenal ulcer patients, rapid urease test and histology was positive in 89% and 77.8% respectively. In gastric ulcer group, rapid urease test and histology was positive in 75% and 87.5% respectively. Both RUT and histology were concomitantly positive in 72.2% of duodenal ulcer and 75% of gastric ulcer patients, thereby confirming the association of disease with helicobacter pylori. Kuipers et al in 1995 reported that infection with H. pylori was present in 94.9% of 1695 duodenal ulcer patients. Borody et al in 1991 found H. pylori in 94% of 302 duodenal ulcer patients in Australia. Our study had a similar prevalence rate (89%) of H. pylori in duodenal ulcer patients. A study by Hosking et al in 1992 and another by Lai et al in 2000 found a lower prevalence of H.pylori infection in bleeding

duodenal ulcers. For bleeding gastric ulcers, 10% of patients were neither infected with H.pylori nor were taking NSAIDs (Laine et al, 1996).

The mean hemoglobin value of the patients who presented with nonvariceal upper GI bleed was 7.77±1.26 g/dl. Erosive mucosal disease and esophagitis had mean hemoglobin values approximating 8.30 g/dl. Malignancies of upper GI tract presented with severe anemia. Supe et al in 1989 reported hemoglobin less than 8 g/dl in 5()% of patients with upper GI bleed patients. Mortality was significantly related to hemoglobin level at presentation (Holman et al, 1990; Clason et al, 1986).

Majority of patients (81.5%) who presented with nonvariceal upper GI bleed settled without any adverse outcome. They achieved spontaneous hemostasis with conservative management. Seven patients (7.6%) rebleed out of which 3 had duodenal ulcer, 2 had gastric ulcer and 2 had Mallory Weiss tear. Of the eight patients (8.7%) who died 2 had duodenal ulcer, 1 had gastric ulcer, 3 had carcinoma stomach, I had carcinoma esophagus and 1 had erosive mucosal disease. Two patients (2.2%) underwent surgery to control the bleed. The patient with gastric ulcer bleed underwent partial gastrectomy while the one with duodenal ulcer bleed underwent underrunning of vessel. Of the 32 patients with erosive mucosal disease, one patient (3.1 %) died. He had ischemic heart disease which might have accounted for the death.

Holman et al in 1990 and Johnston et al in 1973 reported that systolic BP of less than 90 mm of Hg at presentation and admission hemoglobin of 10 g/dl or less was significantly associated with mortality. Supe et al in 1989 found that clinical evidence of shock and a low hemoglobin on admission were predictive of further hemorrhage but not of mortality.

Mortality rates associated with acute nonvariceal upper GI bleed also vary depending on the study and the risk for an individual patient depends on specific factors such as severity of bleeding episodes, comorbidities and the underlying bleeding etiology. Mortality as high as 36% in cases of nonvariceal upper GI bleed has been reported (Guglielmi et al 2002). Most studies have reported mortality rates of approximately 10%, however, and these figures have not dramatically changed over the past two decades avaroski et al 1995, Lewis et al 2002). An aging population with increased comorbidities may be one contributing factor. A recent study of nearly 2000 Canadian patients documented a mortality rate of 5.4% (Barkun et al 2()()4). Our study has a mortality rate of approximately 8.7%.

On univariate analysis, the various parameters that were found to significantly increase the risk of adverse outcome were age more than 60 years, hematemesis, epigastric pain for less than 48 hours, systolic BP < 100 mm Hg, postural drop in BP and comorbid conditions like ischemic heart disease, chronic obstructive lung disease and chronic liver disease. Among the factors that did not show a significant correlation with adverse outcome were melena, hospital stay of less than 3 days, diastolic BP < 70 mm Hg, a pre endoscopic Rockall score less than 4 and a post endoscopic Rockall score less than 8.

Rasoul Sotoudehmanesh et al in their work on peptic ulcer bleed in 2005 showed that patients with peptic ulcer bleed were more often male, older in age, used NSAID, had history of peptic ulcer bleed in the past, had ulcer located in the stomach and not in the duodenum, and more often had large ulcer (>1 cm).

A study by Morgan AG et al in 1977 found that age more than or equal to 60 years, presence of cardiac, renal and hepatic comorbid conditions were associated with a significant increase in adverse outcome in their study population of upper GI bleeds. Another study by Douglas et al in 1998 found that presence of hematemesis, bright blood per rectum, blood in nasogastric aspirate,an initial systolic BP < 100 mm Hg and an initial hematocrit <30% were associated with a significant risk of adverse outcome.

VI. CONCLUSION

Ninety two patients of endoscopically proven nonvariceal upper gastrointestinal bleed were included in the study.

1. Male preponderance was seen in all age groups. The mean age of the patients was 48.97 years and the range was 18-82 years.
2. Nonvariceal upper GI bleed was more common in the 51-60 years age group which constituted 22.82% of patients.
3. Commonest cause of nonvariceal upper GI bleed was erosive mucosal disease (34.8%) followed by peptic ulcer (29.4%) and esophagitis (13%).
4. The commonest mode of presentation was melena (47.83%) followed by hematemesis (38.04%).
5. Epigastric pain was present in 19.5% of patients.
6. History of NSAID ingestion 48 hours prior to bleed was noted in 29.35% of patients.
7. Diclofenac was the most common NSAID associated with upper GI bleed (25%) followed by naproxen (15%) and ibuprofen and paracetamol combination (12.5%) respectively.
8. Majority of the duodenal ulcer (55.6%) patients presented with shock (systolic BP < 100 mmHg).
9. Among the 27 patients with peptic ulcer bleed, 17 patients had Forrest Ill endoscopic stigmata. Three patients presented with active bleed (Forrest IA) and shock leading to death.
10. Seventy five patients (81.5%) who presented with nonvariceal upper GI bleed settled with conservative management. Seven (7.6%) patients rebled out of which 5 had peptic ulcer and 2 had MW tear. Of the 8 (8.7%) patients who died, 3 had peptic ulcer, 4 had malignancies of upper GI tract and 1 had erosive mucosal disease respectively. Two (2.2%) patients both with peptic ulcer underwent surgery to control the bleed.
11. RUT and histology were concomitantly positive in 72.2% of duodenal ulcer and 75% of gastric ulcer patients.

12 a. On univariate analysis, the various parameters that were found to increase the adverse outcome were age more than 60 years, hematemesis, epigastric pain for less than 48 hours, shock (systolic BP < 100 mmHg), postural drop in blood pressure and comorbid conditions like ischemic heart disease, chronic obstructive lung disease and chronic liver disease.

12 b. The factors that did not correlate with an increased risk of adverse outcome were short hospital stay (<3 days), melena, pre-endoscopic Rockall score <4 and a post-endoscopic Rockall score <8.

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