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Clinical Profile of Non Variceal Upper GI Bleed

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ABSTRACT

Introduction: *Acute gastrointestinal bleeding is a potentially life threatening abdominal emergency that remains a common cause of hospitalisation. Upper GI Bleeding (UGIB) is defined as bleeding derived from a source proximal to the ligament of Treitz. The incidence of UGIB is approximately100 cases per 100000 population per year. Bleeding from the upper GI tract is approximately 4 times as common as bleeding from the lower GI tract and is a major cause of morbidity and mortality. Mortality rates from UGIB are 6-10 % overall .H .pylori infections is the most common cause of major bleeding.*

Objectives: *To study the clinical profile and etiology of non variceal upper GI bleed*

Materials and Methods: *158 patients with non variceal upper GI bleeding were studied. Their clinical profile including etiology was studied*

Results: *The mean age of the patient admitted was 52.06±15.31 years,67.7% were males,70.9%(n=112) had a history of chronic NSAID usage.64.6%(n=102) of the patients were smokers,53.8% of the patients (n=85)were known cases of peptic ulcer disease.54.4% (n=86)were alcoholics. 58.2% of patients needed blood transfusion. Only 2 patients (1.3%) died during hospital stay. Based on OGD 30.4% had duodenal ulcers, 70.9% (n=112) were high risk. Among the 102 patients who smoked 76.5% were in the high risk group. In the 86 patients who consumed alcohol 81.4% were in the high risk group*

Conclusions: *Chronic NSAID usage is a common cause of non variceal upper GI bleed. Duodenal ulcers was the most common OGD finding. Thus the most common etiology of non variceal UGIB was an active duodenal ulcer. Most of the chronic NSAID users were in the high risk group ($p<.05$).Patients who smoked or those who consumed alcohol were in the high risk group ($P<.05$). The risk of rebleeding is found to increase with age.*

INTRODUCTION

Acute gastrointestinal bleeding is a potentially life threatening abdominal emergency that remains a common cause of hospitalisation. Upper gastroi-ntestinal bleeding is defined as bleeding derived from a source proximal to ligament of Treitz.[1] The incidence of UGIB is approximately 100 cases per 100000 population per year.[2] Mortality rates from UGIB are 6-10% overall.

The diagnosis and therapy for non variceal upper gastrointestinal bleeding (UGIB) has evolved since the late 20th century from passive diagnostic

esophagogastro duodenoscopy and medical therapy until surgical intervention was needed for active intervention to endoscopic techniques followed by angiographic and surgical approaches if endoscopic therapy fails. (3) (4)

Various etiologies of non-variceal upper gastro intestinal bleeding have been described.

Peptic ulcer related UGIB (Upper GI Bleed) is strongly associated with H.pylori infection[5].The organism causes disruption of the mucosal barrier and has direct inflammatory effect on the gastric and duodenal mucosa[6].In cases of ulcer associated UGIB, as the ulcer burrows deeper into the gastroduodenal mucosa, the process causes weakening and necrosis of the arterial wall, leading to development of a pseudoaneurysm. The weakened wall ruptures, producing hemorrhage[7]. Visible vessels usually range from 0.3-1.8mm.

Vomiting-related UGIB can result from esophageal rupture (Boerhaave syndrome) leading to bleeding, mediastinal air entry, left pleural effusion (salivary amylase can be present) or left pulmonary infiltrate, and subcutaneous emphysema.[8]

Mallory-Weiss tears account for 15% of acute upper GI hemorrhage. Kenneth Mallory and Soma Wiess first described the syndrome in 1929[8].The massive UGIB results from a tear in the mucosa of the gastric cardia. It occurs as a result of the forceful vomiting, retching, coughing, or straining which creates a rapid increase in the gradient between intragastric and intrathoracic pressures. In 80-90% of cases, this is a single, 1.75-2.5cm mucosal tear along the lesser curve of the stomach just distal to the gastroesophageal junction.[9]

Acute gastritis results from predisposing clinical conditions that have a potential to alter local mucosal protective barriers such as mucus, bicarbonate, blood flow, and prostaglandin synthesis. It is most commonly observed in patients who have undergone episodes of shock, multiple trauma, acute respiratory distress syndrome, systemic respiratory distress syndrome, acute renal failure and sepsis.[10]

NSAIDs cause UGIB due to gastric and duodenal ulcers by inhibiting cyclooxygenases, which causes decreased mucosal prostaglandin synthesis and results in impaired mucosal defences. Daily NSAID use causes an estimated 40-fold increase in gastric ulcer creation and an 8-fold increase in duodenal ulcer creation[11].

Various factors affect the prognosis of patients presenting with upper gastrointestinal bleeding. Age older than 60 years is an independent marker for a poor outcome in upper gastrointestinal bleeding (UGIB), with the mortality rate ranging from 12-25% in this group of patients.[12]

According to the American Society for Gastrointestinal Endoscopy (ASGE), the following risk factors were associated with increased mortality, recurrent bleeding, the need for endoscopic hemostasis or surgery: Age older than 60 years; severe comorbidity; active bleeding (eg: witnessed hematemesis,red blood per nasogastric tube,fresh blood per rectum); hypotension ; red blood cell transfusion greater than or equal to 6 units ; inpatient at the time of bleed and severe coagulopathy. Patients who present with hemorrhagic shock had a mortality rate upto 30%. [13,14,15]

MATERIALS AND METHODS

This was a hospital based cross-sectional study done on all consecutive patients admitted to medical wards with upper gastrointestinal bleed presenting as hematemesis in medical wards in Medical College Hospital, Trivandrum. A detailed history was taken regarding alcohol intake, chronic NSAID use (more than 1 month), intake of spicy foods, symptoms of GERD, any other bleeding manifestations etc from each patient according to a written proforma. A thorough clinical examination was done to find out any stigmata of chronic liver disease, features of portal hypertension etc. Patients with previous USG Abdomen report and previous OGDscopy report suggestive of CLD and varices were excluded. All other systems were also examined in detail in each patient.

All routine investigations, RFT,LFT,ECG etc and specific investigations PT-INR (if indicated) , Ultrasound Abdomen, OGDscopy were also done. The various etiologies of upper gastrointestinal bleed were determined according to endoscopic findings.

158 patients were studied in 6 months from the time of ethical clearance which also included 1 month of follow up (every 2 weeks) after hospital discharge. High risk group was defined according to the study if one of the following events occurred (1) patients needing clinical intervention (2)Patients who rebleed. After the patients were discharged, both the high risk and low risk group patients were followed up every 2 weeks upto 1 month and assessed the risk of rebleed.[16]

The number of units of blood transfusion given, the type of treatment and the medications and management being given at the time of admission were also reviewed.

STUDY PERIOD

The study was done for a period of 6 months from the date of getting ethical clearance which also included 1 month of follow up.

SAMPLE SIZE

158 patients with non-variceal upper gastrointestinal bleeding were studied. Sample size was calculated using the statistical formula.

$$N=Z_{\alpha}^{2}\ xPxQ/(S+C-1)^{2}xd^{2}$$

Where

Z_{α}= 1.96 if α error =0.05

P =Percentage of high risk among study subjects according to study

Q = 100-P

S =Sensitivity of the diagnostic tool

C =Specificity of the diagnostic tool

d =20% of P

N =Sample size

INCLUSION CRITERIA

1. All patients above 18 years of age with upper gastrointestinal bleeding who presented as hematemesis admitted in medical wards.

EXCLUSION CRITERIA

1. Patients with a known history of chronic liver disease.
2. Patients with USG abdomen evidence of chronic liver disease with portal hypertension.
3. Patients with OGD scopy evidence of bleeding varices.
4. Patients with clinical stigmata of chronic liver disease.
5. Patients with clinical evidence of portal hypertension.
6. Patients with laboratory evidence of chronic liver disease.
7. Patients not giving consent.

Every consecutive patient fulfilling the inclusion criteria and exclusion criteria were included in the sample, after obtaining an informed consent either from the patient or from the nearest kin if the patient was not in a condition to give consent.

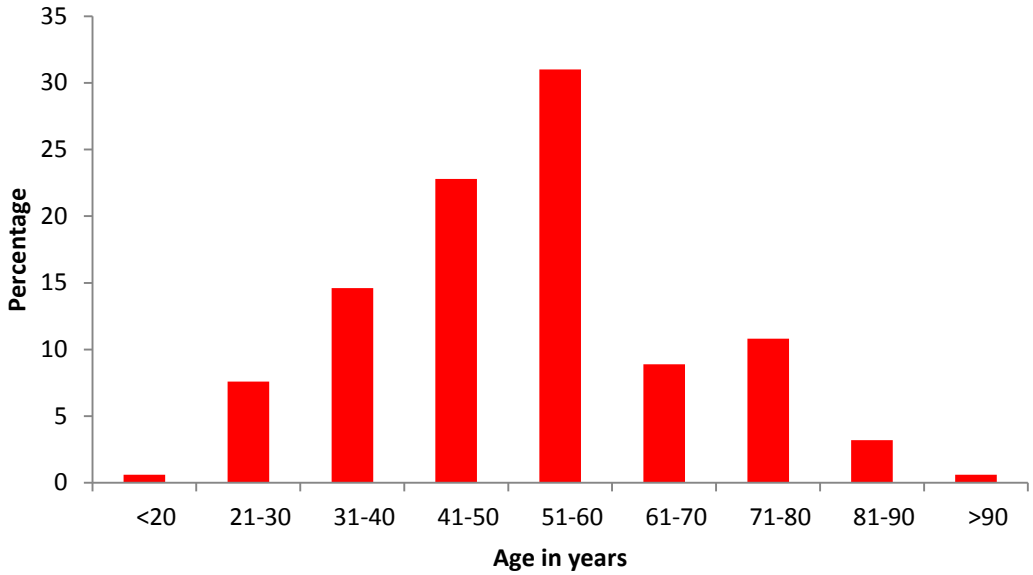
The data needed for the study was collected with the help of a semistructured questionnaire. The data collection of the study was started only after getting the clearance from the ethical committee. The privacy of the patient and confidentiality of the clinical data was maintained throughout the study. The information collected was used only for the purpose of this study.

The statistical software used was SPSS version 17.0 (for Windows). For all statistical evaluation a P value <0.05 was considered significant.

OBSERVATIONS AND RESULTS

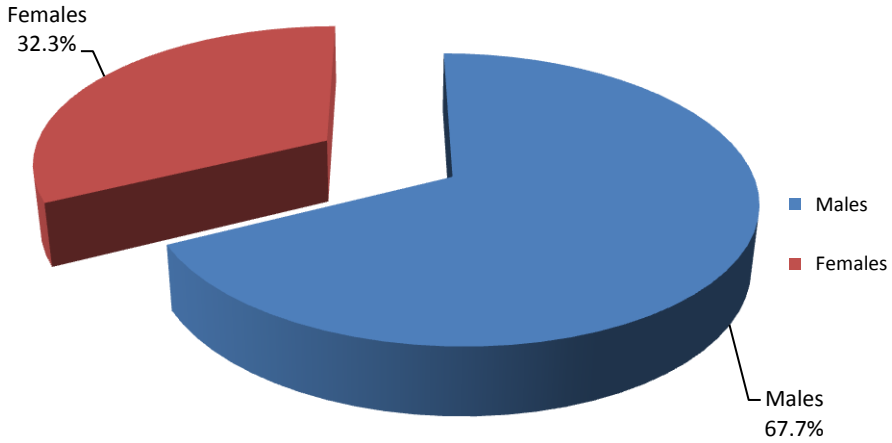
Among the patients studied, 31% were in the 51-60year age group(n=49) ollowed by 41-50 years - 22.8% (n=36) as shown in Fig 1.

Figure 1 Age wise distribution of cases



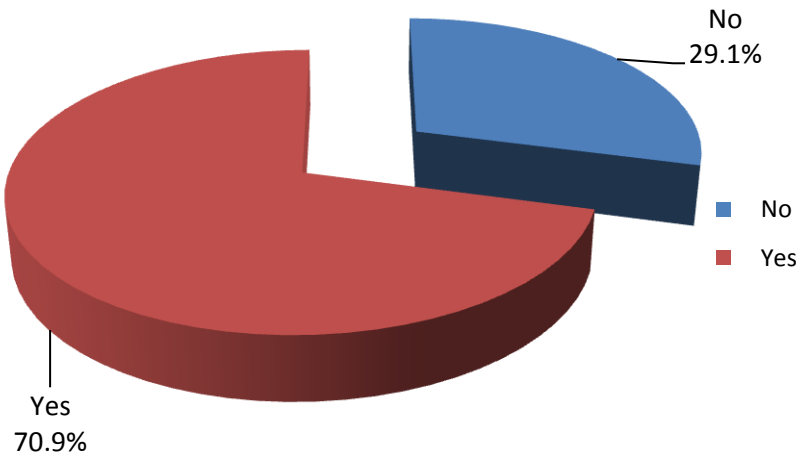
Of the 158 patients admitted with non-variceal upper gastrointestinal bleeding, 107 (67.7%) were males and 51 (32.3%) were females.(Fig 2)

Fig: 2 Sex distribution of cases



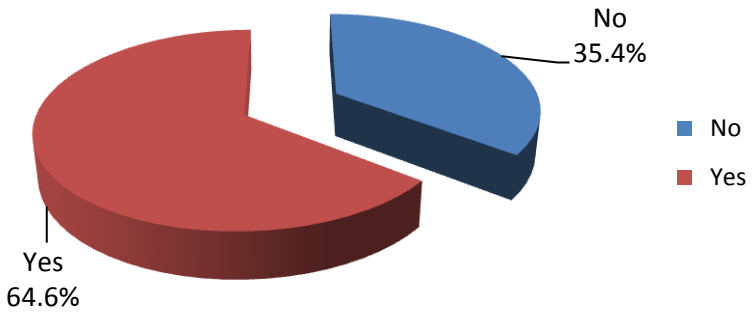
As shown in fig.(3) 70..9% of patients had a history of chronic NSAID usage

Fig 3 History of NSAID usage



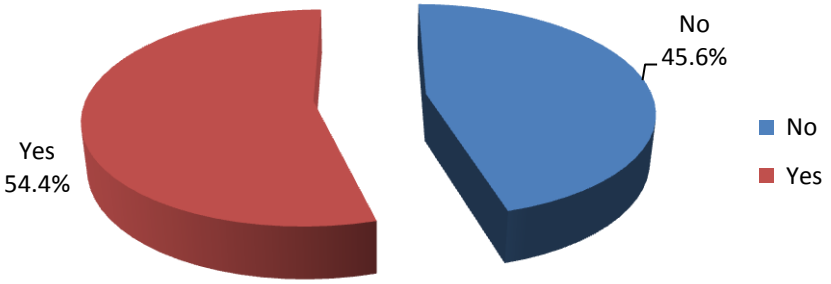
As shown in fig(4) out of the 158 patients 64.6% (n=102) were smokers.

Fig.4 Smoking Habit



53.8% were known cases of peptic ulcer disease proven by previous OGD scopy and 90.5% of patients were having reflux symptoms.

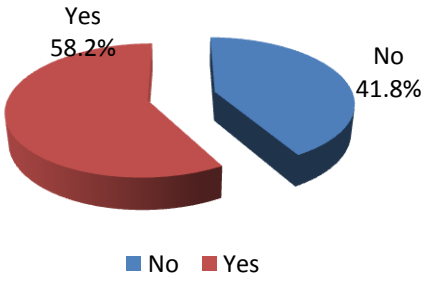
Fig 5 Alcoholism



As shown in fig (5) 54.4% of patients with non variceal UGIB were alcoholics.

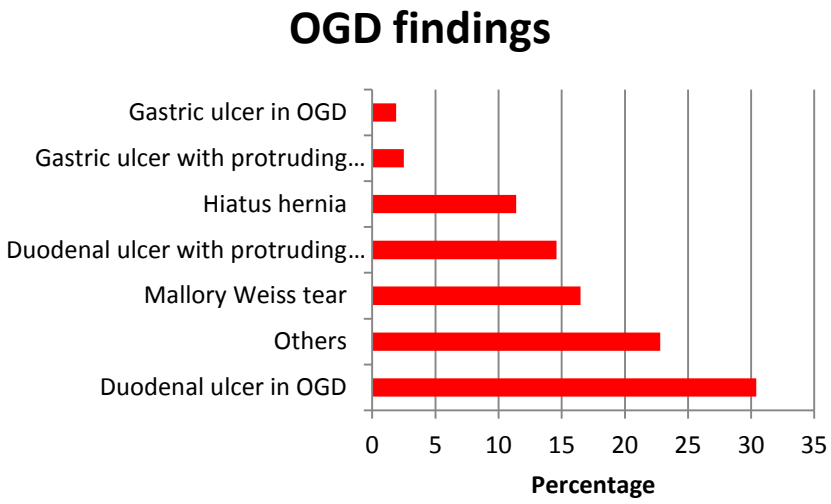
Among the co morbidities, Ischemic heart disease was present in 28.5% of patients and renal failure in 4.4% of patients. Other comorbidities (COPD, Tuberculosis, Hypothyroidism, Diabetes, and Hypertension) was present in 18.4% 58.2% of patients needed blood transfusion (Fig.6)

Fig 6 Blood transfusion



Regarding mortality, only 2 patients (1.3%) died during hospital stay

Fig 7 Lesions in OGD scopy



As shown in fig (7) duodenal ulcer was the commonest cause of non variceal UGIB by endoscopy. Regarding re-bleeding 13 patients (8.2%) had rebleeding and 70.9 % of patients were in high risk group

Fig 8 Age distribution among high risk and low risk patients

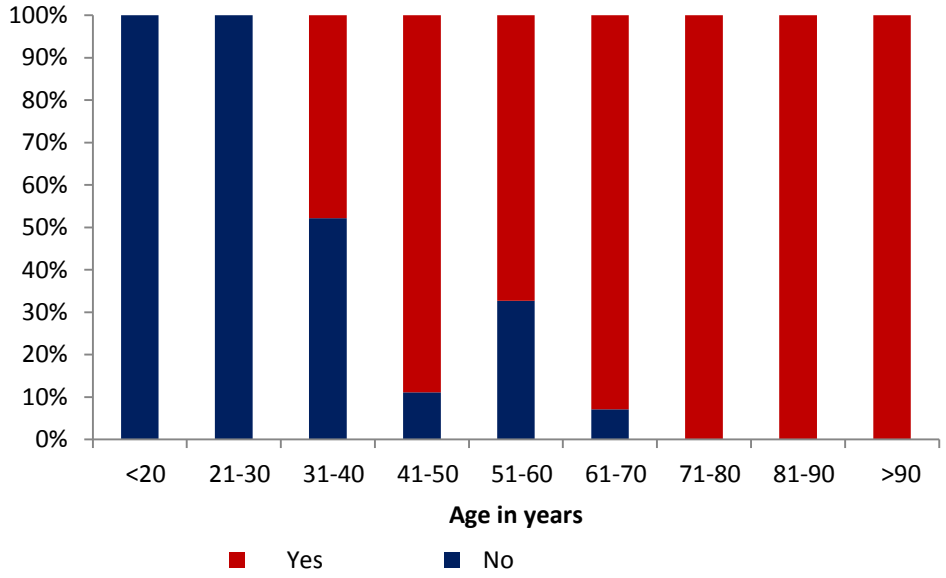


Table 1

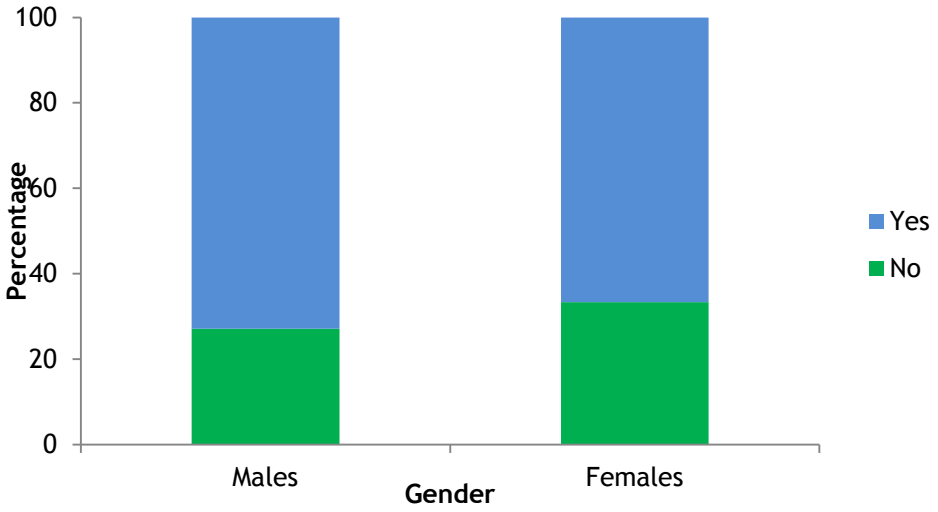
Age in years	High risk				Total	
	No		Yes			
	N		N		N	%
>40	21	17.2	101	82.8	122	100
<40	25	69.4	11	30.6	36	100
Total	46	29.1	112	70.9	158	100

x^2 =36.746 df =1 p< 0.001

As shown in the fig 8, 88.9% of patients in the 41-50yrs age were in the high risk group. Thus as age advances, the risk also increases. As shown in the table 1, 82.8% of the high risk patients were above 40 years.(p<.05)

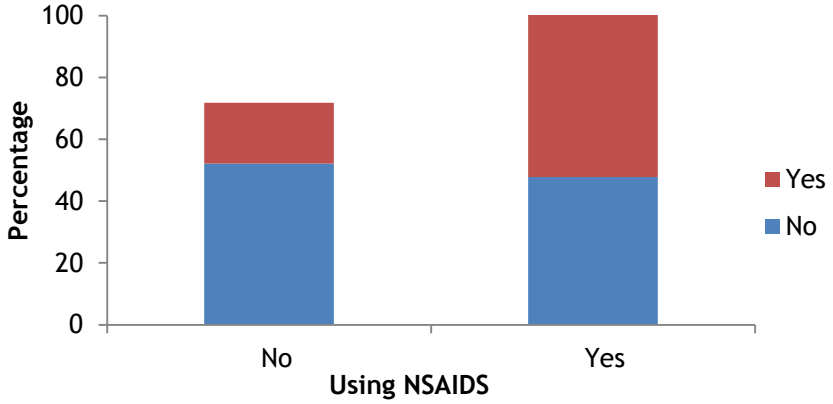
Among the107 male patients,72.9 % were in the high risk group where as only 66.7% of the 51 female patients were in the high risk group(Fig 9)

Fig 9 High risk and gender



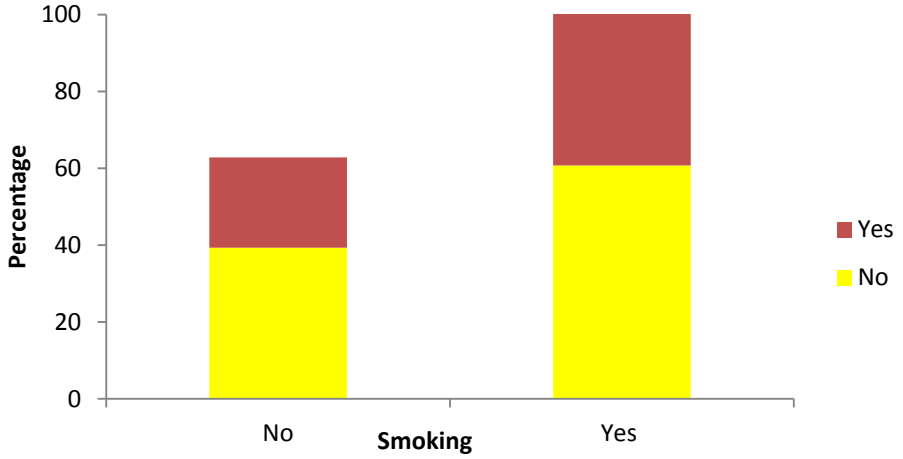
Among the 112 patients chronically using NSAIDS 80.4% were in the high risk group where as only 47.8% of the 46 patient not using NSAIDS were in the high risk group. This difference was statistically significant.(p<,05)(Fig 10)

Fig 10 High risk and NSAIDs usage



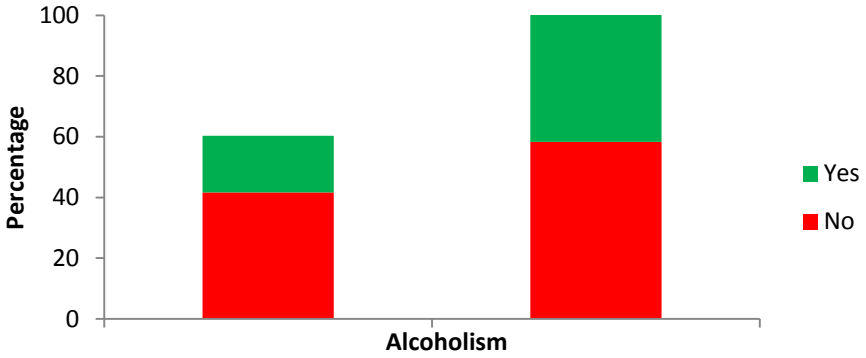
Among the 102 patients who smoked 76.5 % were in high risk where as only 60.7 of the 56 patients who did not smoke were in the high risk group. The observed difference was statistically significant (Fig 11)

Fig 11 High risk and smoking



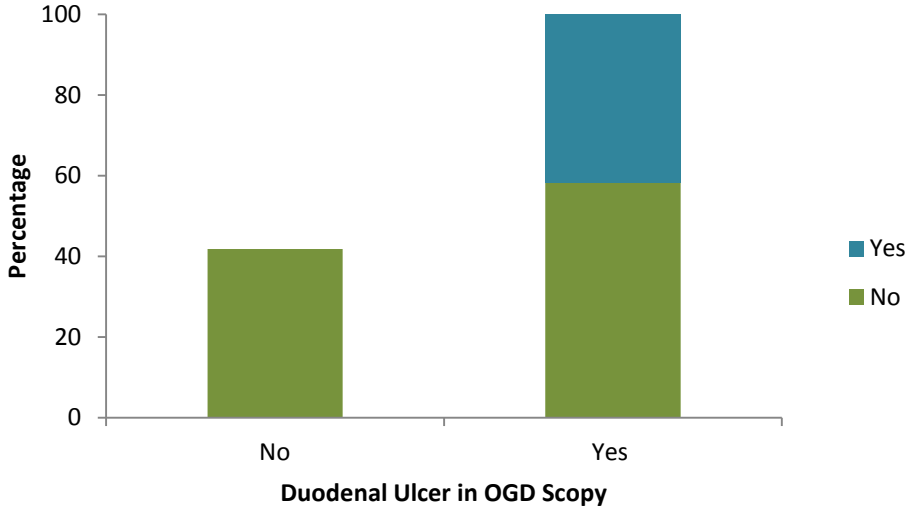
Among the 86 patients who were alcoholics, 81.4% of them were in the high risk group where as only 58.3%of non alcoholics were in the high risk group. The observed difference was statistically significant. (p<.05).(Fig 12)

Fig 12 High risk and Alcoholism



Among the 48 patients having Duodenal ulcer on OGD scopy 100% were in the high risk group where as only 58.2%of the 110 patients without ulcer were in the high risk group. The observed difference was statistically significant (p<.05).(Fig 13)

Fig .13 High Risk and Duodenal Ulcer in OGD Scopy



DISCUSSION

In our study of 158 patients with non-variceal UGIB, the mean age of the patients was 52.06. This is similar to the study by Mohammed. J.Kaviani et.al were the mean age was 54.9 [17].In the study by T.C.K Tham et.al on 102 consecutive patients with non-variceal UGIB, the mean age was 59 years[18]. Gisbert et.al, in their study of 341 patients with UGIB, the mean age of patients was 62 years[19]. In the study by Cheng. D.W et.al of 199 patients, mean age of the patients was 56 [20].

Males constituted the majority with 67.7%. 70.9% had a history of chronic NSAID intake. This is similar to the observations by Mohammed. J.Kaviani et.al where 75% of the patients gave a history of low dose aspirin or NSAID use for more than 1 month. In the study by Gisbert et.al, 45% of the patients were taking gastroerosive drugs.

53.8% of the patients were known cases of peptic ulcer disease proven by previous OGD scopy studies.

OGD findings in our study revealed active duodenal ulcer as the most common cause of non-variceal UGIB – 30.4% followed by 22.8% other lesions (antral gastritis, oesophageal candidiasis, Ca stomach). This is similar to the observations made by the study of Gisbert et.al where 48% patients had duodenal ulcer. Mohammed. J.Kaviani et.al, in their study of 572 patients has observed that duodenal ulcers were the most common cause of UGIB. In his study 33 out of the 36 patients who died had an active duodenal ulcer in OGDscopy. There was a significant relation between mortality and OGD finding of a duodenal ulcer. Similar observations were also made in the study by Maromo.R et.al in their study of 1360 patients with non-variceal UGIB. In that study duodenal ulcer was found in 60.7% of the patients [21].

1 or more comorbidites was present in 28.5% of our patients (IHD, renal failure, diabetes). In the study by Maromo.R et.al 66% of the patients had 1 or more comorbidities.

58.2% of the patients needed blood transfusion. In the study by Stanley.A.J et.al 23.3% of the patients needed transfusion.[22] Similar observations were also made by Cheng. D.W et.al. In his study, observed that 32% patients required blood transfusion

In our study the risk increased with age. Of the 122 patients in the study above the age of 40 years, 82.8% patients were in the high risk group, whereas only 30.6% of the patients in the age group less than 40 years were in the high risk group. The observed difference was statistically significant. Thus the risk increased significantly with age more than 40 years. This is similar to the observations by A.J.Stanley et.al where low risk patients were predominantly of the younger age group.

In this study, 80.4% of the 112 patients who were chronic NSAID users were in the high risk group, whereas only 47.8% of the 46 patients not taking NSAIDs were in the high risk group. Thus the risk was more among patients with chronic NSAID use.

76.5% of the 102 smokers in our study were in the high risk group, whereas only 60.7% of the 56 patients who were non-smokers were in the high risk group. Thus the risk was more among patients who were smokers. This is similar to the observations by K.V.K.Pillai et.al. He observed that smoking increased the incidence of H.pylori infection which in turn might have increased the risk of peptic ulcer disease.

The risk of rebleeding or intervention was more in alcoholics. Again the finding of duodenal ulcer in OGDscopy increased the risk of rebleeding or intervention. All the 48 patients having duodenal ulcer in our study were in the high risk group (100%).The observed difference was statistically significant.

CONCLUSIONS

In our study an active duodenal ulcer was the most common etiology of non-variceal upper gastrointestinal bleeding. Majority of the patients had a history of chronic NSAID usage. The risk of rebleeding or need for intervention increased with age, smoking, alcoholism and most importantly chronic NSAID use. The finding of an active duodenal ulcer on OGD scopy also increased the risk of rebleeding or need for intervention.

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