Basrah Journal Of Surgery

Original Article

Bas J Surg, December, 24, 2018

THE PROFILE OF PATIENTS WITH NON-VARICEAL UPPER GASTROINTESTINAL TRACT BLEEDING IN BASRAH TEACHING HOSPITAL

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Abstract

Upper gastrointestinal tract bleeding is a common emergency and life threatening condition. During the last three decades, many factors have been evolved that might change the incidence, age of presentation, site of bleeding and the outcome of patients with non variceal upper gastrointestinal tract bleeding.

This study aimed to assess the profile and the mode of presentation of the patients with non-variceal upper gastrointestinal tract bleeding and to assess the etiology and the effect of different factors (demographic, mode of presentation and the treatment options) on the patient's outcome.

This observational prospective study was carried out from May 2008 to October 2014 in Basrah Teaching Hospital. All adult patients who were presented with non-variceal upper gastrointestinal tract bleeding were included. All the demographic, clinical and treatment modalities in addition to the mortality rate and complications data were collected and analyzed.

A total of 238 patients with non-variceal upper gastrointestinal tract bleeding were included in this study, 161 (67.6 %) patients were males and 77 (32.3 %) were females. The mean age was 50.62±17.06. Hematemesis was the commonest presentation in 125 (52.5%) followed by melena in 81 (34.03%). Duodenal ulcer was the commonest cause in 99 (41.59%) patients followed by erosive gastritis in 37 (15.5%) patients. The most common treatment modality was the medical treatment used in 186 (78.15%) patients which was successful in 179 (96.23%) with relatively low complications and rebleeding rates. Interventional endoscopy was used for 40 (16.8%) and was successful in 38 (95%) with 2 (5%) patients developed rebleeding. Surgery was done for 12 (5.04%) patients and was successful in 8(66.6%) and it was associated with highest rate of mortality (33.3%). Concerning the factors that might affect the outcome, there was a statistically significant effect of mode of treatment (odd ratio 6.42, p=0.03) and smoking (odd ratio 5.86, p=0.047) on the rate of development of complications. The mode of treatment had a statistically significant effect on mortality rate (odd ratio 20.24 p=0.001). The use of aspirin and/or NSAID affects significantly the rebleeding rate (odd ratio 7.4 p=0.025).

In conclusion, the profile of our patients with non-variceal upper gastrointestinal tract bleeding was not greatly different from that of surrounding Middle East countries. We found that peptic ulcer disease was the commonest cause for which medical treatment was the most successful mode of treatment. Among many known risk factors, the mode of treatment and smoking were the factors that increase the complication rate. The mode of treatment was the only factor that affects the mortality rate. Use of aspirin or non-steroidal anti-inflammatory drugs influenced the rebleeding rate.

Introduction

Upper gastrointestinal tract bleeding (UGIB) is defined as hemorrhage that emanates at a level above to the ligament of Treitz. It is a common life threatening situation that required an energetic action. A wide range of reported incidence of acute UGIB reaching up to 160/100000 population in a year[1,2]. Most of cases of bleeding respond well successfully to supportive treatment, significant mortality still encountered especially in old patients[3]. Significant number of patients needed additional interventional efforts of the

gastroenterologists, surgeons and radiologists[4,5].

The diagnostic and therapeutic strategies for non variceal acute UGIB has noticeably changed over the past decades with the advances of interventional endoscopic and angiographic techniques[5,6].

In one hand, the increased life expectancy associated with increase in co morbidity and the use of low dose of aspirin in primary and secondary prevention of cardiovascular diseases, in addition to the use of non-steroidal anti-inflammatory drugs (NSAID) for degenerative joint diseases and on the other hand, different factors affecting the rate of Helicobacter pylori infection in addition to many factors influencing its eradication, all these factors might change the incidence, age of presentation, site of bleeding and the outcome of patients with non variceal UGIB[7].

The aims of the study:

Demonstrate the demographic profile and the mode of presentation of the patients with non variceal UGIB.

Identify the causes of non variceal UGIB according to the endoscopic findings.

To assess the effect of different factors (demographic, mode of presentation and the treatment option) on the outcome in form of complication, rebleeding and mortality.

Patients and methods

This is a prospective study carried out from May 2008 to October 2014 in Basrah Teaching Hospital, Basrah, Iraq. All adult patients (age>16 years) presented with non-variceal UGIB of were included. The patients were either admitted to the emergency department or referred from the medical or surgical wards of the same hospital.

Those patients, who were hemodynamically unstable according to the vital signs, were resuscitated and stabilized according to "ABCD" protocol then they underwent endoscopic examination as soon as possible, while stable patients were scheduled for endoscopy within 24 hours.

The patients with documented stopped bleeding at time of endoscopic examination were sent to their wards to complete their medical treatment. Those patients with endoscopic stigmata of recent bleeding (adherent clot, spurting vessel, visible non bleeding vessel) were managed by endoscopic intervention using Injection of diluted adrenalin (1:100 000), in normal saline to stop the bleeding and they were sent after successful treatment to the surgical wards or to the intensive care unit, according to the hemodynamic status, for further management.

Surgery might be needed when endoscopic therapy failed to control the bleeding or rebleeding (within 24-48hr) occurs after successful primary endoscopic therapy. All the patients were assessed and followed up for 1 month.

All the demographic, clinical, interventional endoscopy and surgical data were collected and analyzed using Statistical Package for the Social Sciences (SPSS) version 16. For the statistical analysis, multivariate logistic regression analysis was used and a P value <0.05 was considered as statistically significant.

Results

A total of 238 patients who were presented with history and examination of UGIB that proved by endoscopy to be non variceal, were included in this study which carried out from May 2008-October 2014. They were 161 (67.6 %) males and 77 (32.3%) females, giving a male to female ratio of 2.09:1. The mean age was 50.62. Fifty six (23.52%) patients were above age of 60 years and 182 (76.47%) patients were less than 60 years.

The other demographic parameters including medications used (Aspirin, NSAID), smoking, and associated medical diseases are shown in Table I.

Table I: The demographic profile of the patients

Parameters	No. (%)
Age (Year)	
Mean ±SD (50.62±17.06)	
< 60	173(72.68)
> 60	65 (27.31)
Male	161 (67.6)
Female	77 (32.3)
Aspirin and/or NSAID	57 (23.94)
Smoking	43 (18.06)
Medical diseases (single or combination)	
Diabetes	40 (16.8)
Cardiovascular disease	32 (13.4)
Renal disease	8 (3.36)
Liver disease	3 (1.26)

Hematemesis alone (or coffee-ground vomiting) was the commonest presentation in 125 (52.5%) of the cases followed by melena in 81 (34.03%), 178 (74.8%) patients were hemodynamically stable at time of presentation. The majority of patients, 140 (58.8%) were referred from the emergency department as demonstrated in Table II.

Table II: The mode of presentation and the way of referral

Presentation	No. (%)
Hematemesis	125 (52.5)
Melena	81 (34.03)
Hematemesis and melena	22 (9.24)
Hematochezia	10(4.2)
Hemodynamically stable	178(74.8%)
Referral:	
Emergency Department	140 (58.8)
Medical ward	68 (28.57)
Surgical ward	30 (12.6)

The etiology of UGUB according to the endoscopic findings clearly demonstrate that duodenal ulcer was the commonest cause in 99 (41.59%) patients followed by erosive gastritis in 37 (15.5%), gastric ulcer in 26 (10.9%) and oesophagitis in 18(7.76%). In 47 (19.7) patients no cause could be identified during endoscopy examination (Table III).

Table III: Etiology of acute non-variceal UGIB according to endoscopic findings

Etiology	No. (%)
Duodenal ulcer	99 (41.59)
Erosive gastritis	37 (15.5)
Gastric ulcer	26 (10.9)
Oesophagitis	18 (7.56)
Gastric growth	8(3.36)
Vascular lesion	2 (0.84)
Mallory Weiss	1 (0.42)
No cause identified	47 (19.7)
Total	238

Regarding the modalities of treatment that used, the medical treatment in form of infusion proton pump inhibitors (80mg bolus dose, then 8mg/kg/hour maintenance dose) of either omeprazole or esmoprazole was used for 186 patients and it was successful in 179 (96.23)of the patients with low rate of complications that developed in 6 (3.22) patients. Four (2.15%) patients developed another attack of bleeding during same admission or within the one month follow up period, all of them(the complication an bleeding patients) respond well to conservative treatment. Three (1.61%) patients died from other associated morbidities during 30 days of the study. Endoscopic treated was used for 40 patients and was successful in 38 (95%) patients. Four (10%) patients were developed complications in endoscopically treated patients, pulmonary complications developed in two of them. One patient developed stroke and one patient developed non-fatal cardiac ischemia. Two patients out of 40 (5%) developed rebleeding in endoscopically treated group and managed successfully by surgery within 24 hours after the endoscopy. Twelve patients were managed primarily by surgery, gastric cancer was the cause of bleeding in 8 of them, and 6 (50%) of them developed perioperative complications and 4 (33.3%) of them died. The overall mortality of all patients was 7 (2.9%), 3 in medically treated and 4 in surgically treated group as demonstrated in Table IV.

Table IV: The mode of treatment and the outcome

Treatment	Patients No. (%)	Successful treatment No. (%)	Complications No. (%)	Re bleeding No. (%)	Mortality No. (%)
Medical	186 (78.15)	179 (96.23)	6 (3.22)*	4 (2.15)*	3 (1.61)
Endoscopic	40 (16.8)	38 (95)	4 (10)*	2 (5)**	0
Surgical	12 (5.04)	8 (66.6)	6 (50)*	0	4 (33.3)

*controlled on conservative treatment. ** controlled by surgery.

Multivariate logistic regression analysis was used to assess different factors that might influence the outcome in form of complication, rebleeding and mortality. We found that there was a statistically significant effect of the mode of treatment (odd ratio 6.42, p=0.03) and smoking (odd ratio 5.86, p= 0.047) on the development of complications. The other factors show no statistically significant effect on complication rate. The surgical mode of treatment was the only factor that had a statistically significant effect on mortality rate (odd ratio 20.24 p=0.001). The use of aspirin and/or NSAID was the only factor that had a statistically significant effect on rebleeding rate (odd ratio 7.4 p=0.025)as shown in Table V.

Table V: The multivariate logistic regression analysis of different factors that might influence the outcome in form of complication, rebleeding and mortality

Risk Factors	Complications	Mortality	Rebleeding
Mode of treatment:			
Surgery	6.42 (0.03)	20.24 (0.001)	NS
Endoscopy	NS	NS	NS
Medical	NS	NS	NS
Hemodynamic Stability	NS	NS	NS
Aspirin and NSAIDs	NS	NS	7.4 (0.025)
Smoking	5.86 (0.047)	NS	NS
Medical Diseases	NS	NS	NS
Age >60	NS	NS	NS
Gender	NS	NS	NS

The numbers represented by OR: Odd ratio and (p value).
NS : no statistically significant effect.

Discussion

Worldwide, UGIB is a condition of a clinical significance with essential implication on health care expenses[3,7,8]. Many studies were carried out in developed countries discussing the profile and the incidence of UGIB[9], and some studies were carried out in countries surrounding Iraq[3]. In this study we aimed to assess the current picture or the profile of patients presented with UGIB at Basrah Teaching Hospital, Basrah, Iraq.

A total of 238 patients who were presented with non variceal UGIB were included in this study. The mean age of the patients was 50.62 years which is consistent with the study of Mohammad[3] (54.9 years). On the other hand the mean age was less than that in study of Paspatis[1] (66.2),the deference in the mean age probably due to the differences in life expectancy of the population in Greece and other European countries comparing with that of our community. The study of Gurung[7] shows a mean age of (45.3), which is obviously less than that of our study and this could be explained by the inclusion of the esophageal varices, which was not included in this study, as a cause of UGIB, which is common in younger age group in his study.

The male to female ratio in this study was 2.09:1 which is similar to the study of Maurice[6], but it was little bit different from study that carried out by Paspatis[1] and Silvano[10] that showed a ratio of 1.7: 1 and 2.7:1 respectively. In this study, the male to female ratio was closer to the international ratio (2:1)[5].

Hematemesis was the most common presentation in this study followed by melena then hematemesis with melena and lastly hematochezia, which demonstrate same results as that of Gurung[7] and Mohammad[3].

Most of the patients (58.8%) were admitted from the emergency department the finding that was consistent with studies of Gurung[8] and Mohammad[3].

The main cause of non variceal UGIB in this study was duodenal ulcer 99 patients (41.59%), followed by erosive gastritis 37 (15.5%), gastric ulcer 26 (10.9%) and oesophagitis 18 (7.56%), these findings were similar to that mentioned by Maurice[6], in which duodenal ulcer was the most common cause (25%). Paspatis1 reported that erosive gastritis disease was the most common cause followed by duodenal ulcer and then gastric ulcer. Gurung[7] mentioned that the most common cause is gastric ulcer followed by acute erosion and then duodenal ulcer. These differences in the etiologies that takes the precedence could be explained by proper

compliance for eradication treatment of duodenal ulcer for their patients in addition to the increase in the age of the population in their countries which possibly associated with excessive use of low dose of aspirin and/or NSAID for prevention of cardiovascular accidents and also in treatment of degenerative joint diseases.

In 186 (78.15%) of patients the endoscopic examination revealed that no active bleeding was encountered during the endoscopic examination and the patients continue on standard medical treatment of infusion proton pump inhibitors and it was successful in 179 (96.23%) patients. Bleeding was stopped by interventional endoscopy in 40 (16.8%) patients using injection of diluted adrenaline and it was successful in 38 (95%). The two patients (5%) who developed rebleeding after initial successful endoscopic control underwent surgery within 24 hours and they survive uneventfully. Surgery was the mode of treatment to stop the bleeding in 12 (5.04)% with a success in 8 patients (66.6%) and 4 (33.3%) patients died during postoperative period from irreversible shock state. These findings were nearly the same in the studies that were carried out by Gurng[7] and Fallah[11].

In 23.9% of patients there was a history of low dose aspirin and NSAID consumption. Muhammad[3] demonstrated that 75% of the patients were taking aspirin or NSAID, on the other hand Paspatis1 reported that NSAID was used in 49% of the cases of UGIB. This higher rate of aspirin and NSAID compared with our study group could be explained by advanced age in their study group[12]. Medical diseases were found in 18% of the cases compared with 50.9% of the patients that was demonstrated by Maurice[6].

In order to evaluate the possibility of influence of different factors on the outcome in form of complications, rebleeding rate and the mortality, we analyses the effect of these factors using multivariate logistic regression analysis. The mode of treatment (odd ratio 6.42 p value 0.03) and smoking (odd ratio 5.86 p value 0.047) had a statistically significant effect on increase number of complications when the other confounding factors were adjusted. Other factors showed no statistically significant effect on development of complications. The influence of mode of treatment (surgery) on the number of complications was so clear in other studies that showed more complications in surgically treated patients in comparison to endoscopic treatment (Jawad[13] and Lee[14]). Consumption of aspirin and NSAID had statistically significant effect on rebleeding rate (odd ratio 7.4 p value 0.025), this could be explained by their effect on cyclo-oxygenase 1 with its effect on impairment of mucosal defense to acid[5,15,16].

The overall mortality rate in the study was 2.9 % (7 out of 238). The mode treatment was the only factor that had a statistically significant effect on the mortality rate (odd ratio 20.24 p value 0.001). Surgically treated patients carry mortality of 33.3 % (4 out of 12) which was 1.6% of the overall mortality and this was expected because 8 of those treated surgically were suffering gastric tumor (3 of them died). Mortality rate in surgically treated group mostly related to nature of disease that cause the bleeding and to the post-operative complications of surgery and not necessarily related to the bleeding itself[6,15,16].

According to the American Society of Gastrointestinal Endoscopy the following risk factors affect the mortality: recurrent bleeding, the need for endoscopic hemostasis or surgery, age over 60, severe comorbidity, and hypotension[6,17]. In this study the age, sex, comorbidity and hypotension at admission showed no statistically significant effect on mortality rate. Although endoscopy is the initial procedure of choice for evaluation of

acute upper gastrointestinal bleeding[18], in this study endoscopic findings were demonstrated an evidence of blood in the stomach, but no definitive cause could be identified in 47 (19.7 %) patients and this finding was consistent with Mohammad[3], Manish[5], Lee[14] Kethu[19], Da Silveria[20] and Spiegel[21] studies that showed non diagnostic endoscopic findings in 10- 24% of their patients.

We conclude that the profile of the patients with non variceal UGIB in this study was not greatly different from that of surrounding Middle East countries. We found that peptic ulcer disease was the commonest cause of UGIB for which medical treatment was the most successful mode of treatment. Among all the risk factors, the mode of treatment and smoking were the factors that increases the complication rate. The mode of treatment was the factor that affects the mortality rate. Use of aspirin or NSAID was associated with increase in rebleeding rate.

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