Original Article

Short-term outcomes of upper gastrointestinal bleeding in emergency department Single-center study

Sattar Jabar Saadi[1], Mohammed Jamal Azeez[2], Nusrat Shakir M. Al Attar[3]

[1]Consultant physician, Warith Al-Anbiaa College of medicine, Specialist in family medicine, Authority of health and medical education. Karbala, Iraq

[2]Specialist emergency medicine, Medical city teaching hospital. Baghdad

[3]Consultant emergency medicine, Medical city teaching hospital. Baghdad

Email: Sattar.j@uowa.edu.iq

DOI: 10.47750/pnr.2022.13.S01.17

Abstract

Background: Upper gastrointestinal bleeding (UGIB) is a common emergency gastrointestinal problem which has substantial mortality and need health care resources use with multiple causes.

Aims: evaluating the short-term outcomes of upper gastrointestinal bleeding in emergency department of Baghdad teaching hospital.

Patients and Methods: This descriptive cross-sectional study was done at emergency department of Baghdad teaching hospital and data collected over 3 months interval including 100 adult patients with UGIB during the period from 1st September to 30st November of 2021 were enrolled in the study.

Results: The majority of patients were males 63 (63.0 %) while the rest were females (37.0 %). Aspirin was the major drug used by 23 patients followed by other types of NSAIDs by 17 patients. The main sign among patients was Melina among 83 (83.0%) of the patients, followed by hematemesis in 67 (67.0%) patients and hematochezia in 16 (16.0%) of the patients.

Conclusion: The incidence of UGIB in this study is approximately 2-fold greater in males than in females. Aspirin is the major drug used by patients followed by other types of NSAIDs and associated with medical ward admission for one-third of the patients and surgical intervention for 25% of them.

Keywords: gastrointestinal bleeding, emergency department, Melina.

INTRODUCTION

DEFENITION AND EPIDEMIOLOGY:

Upper GI bleeding is any GI bleeding that originat proximal to the liga¬ment of Treitz. The overall annual incidence of upper GI bleeding ranges from 39 to 172 per 100,000 in Western countries.1-3 Difference in preva¬lence between countries is attributed to variations in Helicobacter pylori rates, socioeconomic conditions, and prescription patterns of ulcer-healing and ulcer-promoting medications.2

Risk factors that associated with increased morbidity and mortality are Increasing age, coexistent organ system disease, and recurrent hemorrhage.3

Upper GIB (UGIB) mortality rates have remained constant at about 15% over the past 2 decades despite advances in medical therapy, intensive care unit (ICU) management, endoscopy, and surgery. This is most likely due to the increasing proportion of older patients, who may die due to comorbid conditions, and increases in cirrhotic and variceal patients.4

DIFFERENTIAL CONSIDERATIONS:

Peptic Ulcer Disease

Despite a downward trend in prevalence over the past 20 years, peptic ulcer disease, which includes gastric, duodenal, esophageal, and stomal ulcers, is still considered the most common cause of upper GI bleeding.5,6 However, ACORI found gastric and duodenal ulcers in only 20.6% of 7822 endoscopies per¬formed for suspected upper GI bleeding.6 This number is much lower than previous estimates of up to 50%.7,8 Awareness that aspirin, NSAIDs, and smoking cause bleeding and

increased recognition and treatment of H. pylori infection may be responsible for decreased incidence.9-12

Erosive Gastritis And Esophagitis

Erosive gastritis, esophagitis, and duodenitis are also common causes of GI hemorrhage.13 Common predisposing factors include alcohol, salicy¬lates, and NSAIDs. Other causes include Infection, toxic ingestion, radiation, and stress from severe illness. Overwhelming sepsis, trauma, or respiratory failure requiring mechanical ventilation that induce Stress-related mucosal dis¬ease. Others that are potential sources of esophageal bleeding from infection include candida, herpes simplex virus, cytomegalovirus, and human immunodeficiency virus.14

Esophageal And Gastric Varices

Esophageal and gastric varices result from portal hypertension and are most often a result of alcoholic liver disease in the United States.15 Although varices account for a small percentage of all cases of upper GI hemorrhage, they carry a high mortality rate and can rebleed. However, many patients with end-stage cirrhosis never develop varices; many patients with documented varices never bleed; and many patients with a documented history of varices presenting with upper GI bleeding will actually bleed from nonvariceal sites. Variceal bleeding is the cause of upper GI bleeding in cirrhotics 59% of the time, followed by peptic ulcer disease in 16% of cases.16 In-hospital mortality rates are essentially double for any type of GI bleed in cirrhotics from those of noncirrhotic patients.17

PATIENTS AND METHODS

This descriptive cross-sectional study was done at the emergency department of Baghdad teaching hospital and data collected over 3 months interval including 120 adult patients with gastrointestinal bleeding (haematemesis or coffee-ground substance (melaenemesis) and/or melaena or hematochezia) during the period from 1st September to 30st November of 2021 were enrolled in the study.

Criteria for inclusion in this study were the following: All adult patients with UGIB undergoing endoscopy (100 cases), while exclusion criteria include: patients unfit for endoscopy (13 cases), and patients that refused endoscopy (7 cases).

After initial stabilization of all patients with IV fluids and PPI and blood products if needed , octreotide and antibiotics for suspected variceal bleeding in cases with history of liver disease, a consent was taken from them and they were assured that data will be used for research purpose only, we recorded the demographic data- age, sex, presenting symptoms (hematemesis, melena, hematochezia), history of upper GI bleeding, comorbidities, drugs history, social history, vital signs, and basic lab. results in a predesigned proforma.

After initial stabilization and taking a consent to do OGD, all included patients were transported to GIT teaching hospital by ambulance to do OGD and then return them to our hospital after completing OGD with a descriptive report for the desilts that were done for them.

According to the policy of our GIT center, the patient should be conscious, hemodynamically stable, and Hb more than 7 g/l to do OGD.

The role of endoscopy was diagnostic and therapeutic in cases of active bleeding. Adrenalin injection for active bleeding ulcers, banding and clipping for esophageal, and gastric varices used to achieve hemostasis.

The outcomes were measured in terms of need for medical ward, need for surgery, mortality, ICU, and home management with outpatient follow up.

RESULTS

The current study was performed on 100 patients, the majority of them were males 63 (63.0 %) while the rest were females (37.0 %). The mean age was 47.85 years old with ± SD 19.68 and the distribution of age was 15 - 40 years old (40.0%), 41 – 60 years old (31.0%) and older than 60 years old were (29.0%) (Table 1).

About comorbidity factors, 44% of the patients were hypertensive, 30% of them were diabetic, 15% had liver disease and 14% had ischemic heart diseases. 18% smokers and 6% alcohol intake. Only 6 patients (6.0%) had surgery before (Table 1).

Table 1 Demographic characteristics of patients (N=100)

Demographic characteristics		(N = 100)	%
Age	Young (15-40) years old	40	40.0
	Middle (41-60) years old	31	31.0
	Old > 60 years old	29	29.0

Age (Mean ± SD)	47.85±19.68 years		
Sex	Female	37	37.0
	Male	63	63.0
Comorbidity	Diabets meleitus	30	30.0
	Hypertension	44	44.0
	Ischemic heart disease	14	14.0
	Heart failure	5	5.0
	Renal disease	6	6.0
	Liver disease	15	15.0
	Others	23	23.0
Smoking	No	82	82.0
	Yes	18	18.0
Alcohol intake	ex-alcoholic	4	4.0
	No	90	90.0
	Yes	6	6.0
Past surgical history	No	94	94.0
	Yes	6	6.0
Other	A known drug ingestion (suicide)	1	1.0
	Diabetic foot	1	1.0

Fig 1 reveals the history of the drug taken by patients, Aspirin was the major drug used by 23 patients followed by other types of NSAIDs by 17 patients.

Heparin was used by 7 patients while warfarin and steroid were used by only one participant (Fig 1).

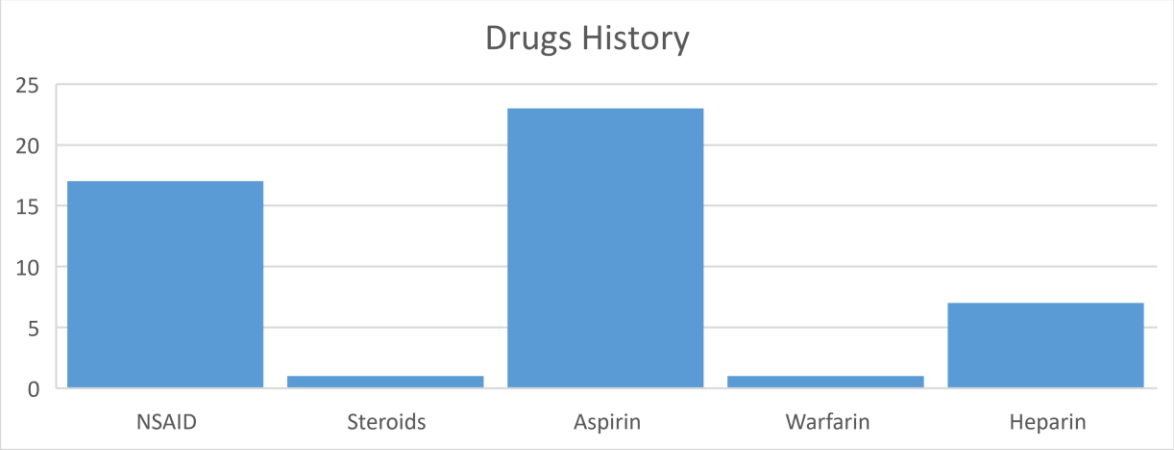


Fig 1 histogram showing the distribution of drugs used by patients.

Table 2 shows that the main sign among patients was Melena among 83 (83.0%) of the patients, followed by hematemesis in 67 (67.0%) patients and hematochezia in 16 (16.0%) of the patients (Table 2).

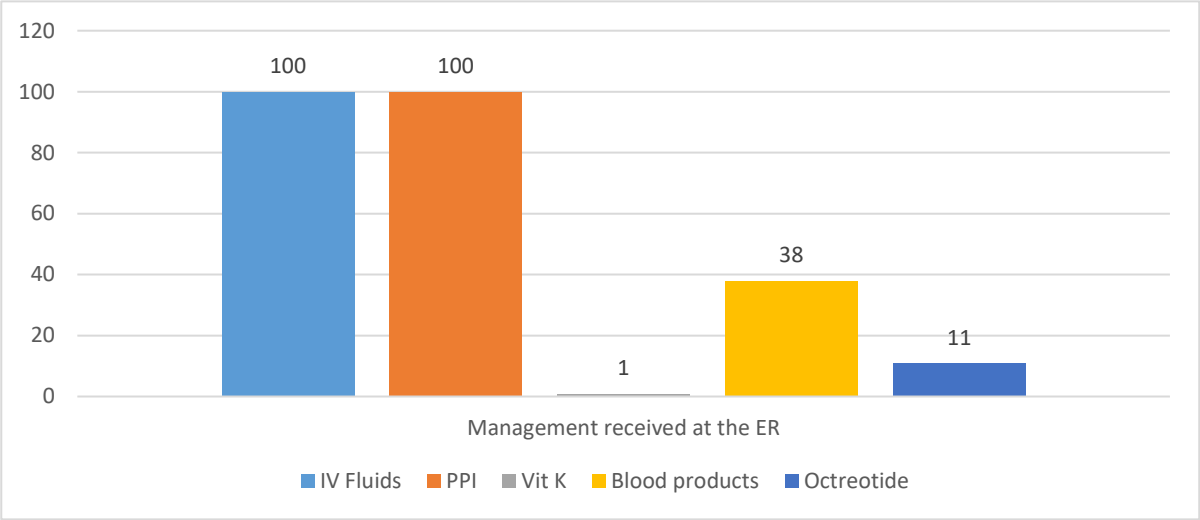
67% of the patients had normal blood pressure and good urine output (67.0% and 78.0%) respectively, while pulse rate was tachycardia was found in 57% of the patients. 96% of the patients were conscious apart of 4% of them had altered mental status (Table 2).

Table 2 the vital signs and the symptoms developed among the patients (N=100)

		N = 100	%
Hematemesis	No	33	33.0
	Yes	67	67.0
Melena	No	17	17.0
	Yes	83	83.0
Hematochezia	No	84	84.0
	Yes	16	16.0
Previous attack	No	79	79.0
	Yes	21	21.0
Blood pressure	hypertensive	11	11.0
	Hypotensive	22	22.0

	Normal	67	67.0
Pulse rates	Normal	43	43.0
	Tachycardia	57	57.0
Urin Output	Decreased	22	22.0
	Good	78	78.0
Consciousness level	Altered mental status	4	4.0
	conscious	96	96.0

Fig 2 shows the management of the patients that received in the emergency rooms, as shown that all of the patients received intravenous fluids and proton pump inhibitor, 38 patients need blood or blood products, 11 patients received octreotide and only one patient need Vit K (Fig 2).



According to table 3, the main Hb of the patients was 9.07±2.6, platelets count 255.6±105.9 (Table 3).

The mean time from admission to the ER until doing OGD was 13.74 hours with a standard deviation of ±7.3 hours (Table 3).

Table 3 the investigations were done on the patients in addition to the time needed from admission ER until OGD is done (N=100).

	N = 100 %
Hb	9.07±2.6
Platelet count	255.6±105.9
Time from admission to OGD	13.74±7.323

DISCUSSION

The current study was performed on 100 patients, the majority of them were males 63 (63.0 %) while the rest were females (37.0 %). These results are similar to a previous study on 168 cases of upper gastrointestinal bleeding titled "Endoscopic Findings in Patients With Upper Gastrointestinal Bleeding in Ogun State, Nigeria" conclude: (67.3%) were males, giving a male-to-female ratio of 2:1.18

Another study titled "Spectrum of Endoscopic Findings in Patients of Upper Gastrointestinal Bleeding at a Tertiary Care Hospital" which concluded: UGIB was more likely to occur in male gender.19

Also, in this study, there was a statistically significant association between male gender and the medical and surgical ward admission. This is considered rational according to the above-mentioned conclusion; male geznder is approximately 2-fold greater than female, so the number of medical and surgical ward admission for male is higher than female.

Aspirin was the major drug used by 23 patients followed by other types of NSAIDs by 17 patients. Heparin was used by 7 patients while warfarin and steroid were used by only one participant. This is similar to two studies; first, a study on risk factors for upper gastrointestinal bleeding among aspirin users found that aspirin use increased the risk of first-time occurrence of UGIB (hazard ratio [HR]: 1.48; 95% confidence interval [CI]: 1.28-1.72).20

Another study low-dose aspirin and risk of upper/lower gastrointestinal bleeding using primary care electronic health records of 199,049 patients from the United Kingdom conclude that Low-dose aspirin was associated with an increased risks of non-

fatal UGIB/LGIB.21

In the current study, Aspirin was found to be associated with medical admission for one-third of the patients and surgical intervention for 25% of them the p-value was 0.008. This is considered to be rational according to the above conclusion; Aspirin is the major drug used among the patients.

In this study, we have concluded the multiple risk factors for mortality:

Regarding age, there was a significant association between the age of the patients with the outcome as the majority of the young age patients managed at home, while the middle age had the highest death rate (66.7%) and the old age had the highest surgical intervention, the P-value was 0.009

Another risk factor is the liver disease, there was an association between liver disease and mortality as 50% of the liver disease patients was died and the p-value was less than 0.05. As a result, the mortality rate was 50% of patients due to esophageal varices with p-value was 0.01

Also, steroids was another risk factor for mortality as there was a statistical association between steroids used by patients with the mortality outcome as p-value was 0.001

There was also a significant association between shocked state (hypotension, tachycardia, decreased urine output, and altered mental status) with mortality as the p-value was less than 0.05

CONCLUSION

The incidence of UGIB in this study is approximately 2-fold greater in males than in females.

Aspirin is the major drug used by patients followed by other types of NSAIDs and associated with medical ward admission for one-third of the patients and surgical intervention for 25% of them.

Significant mortality risk factors in UGIB include age, liver disease and it's sequel of esophageal varices, steroids use, shocked state, blood products transfused, low hemoglobin value.

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