ENDOSCOPIC FINDINGS IN ACUTE UPPER GASTROINTESTINAL HEMORRHAGE AT KING HUSSEIN MEDICAL CENTER

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ABSTRACT

Objective: To find out the diagnosis in patients presenting with acute upper gastrointestinal hemorrhage at King Hussein Medical Center.

Methods: A total of 1118 cases of acute upper gastrointestinal hemorrhage patients aged over 16 years who underwent upper endoscopy over a six year-period at King Hussein Medical Center were studied. Most endoscopies were done within 24 hours from the occurrence of the gastrointestinal bleeding. Patients were divided into different age groups to compare the frequency of upper gastrointestinal hemorrhage between males and females in each group. The total number of patients was also divided into 2 subgroups; those below 50 years, and above 50 years to compare the distribution of the endoscopic findings between young and older age groups.

Results: Upper gastrointestinal bleeding was more common in men at all age groups than that in women, except in older patients (more than 70 years). Eighty seven percent of the endoscopies were done for patients admitted to hospital through the emergency department, and 13% for patients who were already in hospital for some other reason. Sixty two percent of patients were aged over 50. The most common finding over all was duodenal ulcer (32%). Normal endoscopy was reported in 21% of the cases. Other frequent sources of bleeding were stomach ulcers (18.5%), esophageal varices (5.2%), portal hypertensive gastropathy (0.6%), Mallory-Weiss tears (3.3%), and gastric tumors (4.7%). Gastric ulcers and malignancies were more common in older compared with younger age group (21.5%, 6.6% vs. 14%, 1.4% respectively). Therapeutic endoscopic interventions were done in 17% of the patients; adrenaline injection for bleeding peptic ulcer in 16%, sclerotherapy for esophageal varices in 0.9% and banding in 0.1% patients.

Conclusions: The frequency of acute upper gastrointestinal hemorrhage increases considerably with age. The most common finding for all age groups was duodenal ulcer. Malignancy was the most important finding in the older (> 50 years) age group.

Key word: Bleeding, Gastrointestinal hemorrhage, Peptic ulcer

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Introduction

Acute upper gastrointestinal hemorrhage remains a common reason for admission into hospital.[1,2] Early endoscopic intervention has been shown to improve outcome in the management of patients with upper gastrointestinal (GI) hemorrhage.[3,4]

The most common causes of upper gastrointestinal bleeding are chronic duodenal ulcers, chronic gastric

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ulcers, esophageal varices, gastric varices, Mallory-Weiss tears, acute hemorrhagic gastritis, and gastric neoplasms. Less common causes include various other gastrointestinal conditions and certain hepatobiliary and pancreatic disorders.[5]

Upper gastrointestinal hemorrhage may present as severe bleeding with hematemesis, hematochezia, and hypotension; as gradual bleeding with melena; or as occult bleeding, detected by positive tests for blood in the stool.[6] The initial steps in the evaluation of patients with upper GI bleeding are based on the perceived rate of bleeding and the degree of hemodynamic stability. Hemodynamically stable patients who show no evidence of active bleeding or co-morbidities and in whom endoscopic findings are favorable may be treated on an outpatient basis, whereas patients who show evidence of serious bleeding should be managed aggressively and hospitalized.[7]

Esophagogastroduodenoscopy (EGD) usually reveals the source of upper GI bleeding. It requires considerable skill: identification of bleeding sites in a blood-filled stomach is far from easy.[8,9] In case of hematemesis, emergency EGD is indicated, usually within 6 hours of presentation. If the rate of bleeding is high, saline lavage may be performed to clear the stomach of blood and clots.[4]

EGD is not only an excellent diagnostic tool but also a valuable therapeutic modality. The choice of therapy depends on the cause, the site, and the rate of bleeding.[10-13]

We report the results of a retrospective study of the outcome of an 1118 patients which presented with upper gastrointestinal bleeding and underwent upper endoscopy with or without therapeutic endoscopic interventions.

Methods

Data were collected from the records of the gastrointestinal unit over six years for all patients presenting with acute upper gastrointestinal hemorrhage. The study was conducted at King Hussein Medical Center (KHMC) which is a military hospital related to the Royal medical services in Amman. KHMC is a tertiary hospital receiving referrals from all medical sectors in Jordan. It serves the armed forces and their dependents. All major specialties and subspecialties are represented.

Acute upper gastrointestinal hemorrhage was defined as hematemesis or passage of melena or other firm clinical or laboratory evidence of blood loss from the upper gastrointestinal tract. Hematemesis was defined as vomiting of blood or blood clots. Melena was defined as passage of dark, tarry stools witnessed by nursing or medical staff or discovered on rectal examination.

Data collected included age, sex, endoscopic findings, and histopathological results when biopsies were taken. Patients were included in the study if they were aged 16 years or older and had clinical evidence of acute upper gastrointestinal bleeding on admission through emergency department, or had clinical evidence of acute upper gastrointestinal bleeding while the were an established inpatient for any other reason. Most endoscopies were done within 24 hours of admission to Hospital or referral from the wards. Gastric biopsies for Helicobacter pylori in case of peptic ulcer were not routinely taken and rapid urease test is not available in King Hussein Medical Center.

Patients were divided into different age groups to compare the frequency of upper gastrointestinal hemorrhage between males and females. Again, the total numbers of patients were divided into two subgroups; those < 50 years, and > 50 to compare the distribution of the endoscopic findings between younger and older age groups.

Results

A total of 1118 adults underwent upper endoscopy at the gastroenterology unit in King Hussein Medical Center over six years. Their mean age was 54 years (range 16 to 100). Six hundred eighty two (61%) patients were males. Nine hundred seventy three (87%) of cases were emergency admissions, and 13% were hemorrhages in inpatients who already were in hospital for some other reason. The frequency of upper gastrointestinal bleeding was more in men in all age groups compared with women except in those aged 70 or over as shown in Table I.

When comparing inpatients and those admitted through emergency department, the distribution of diagnoses was similar except that Mallory-Weiss lesions were more common in those admitted urgently.

Table I. Number of cases of acute upper gastrointestinal hemorrhage by gender

Age (years)	Male n=682	Female n=436	Total n=1118
16-29	120	34	154 (14%)
30-39	101	36	137 (12%)
40-49	97	48	145 (13%)
50-59	77	36	113 (10%)
60-69	138	95	233 (22%)
70 and more	149	198	347 (31%)

Table II. Main endoscopic findings explaining the cause of bleeding by age

Diagnosis	Age <50 (%) n= 425	Age >50 (%) n=693	All patients (%) n= 1118
Duodenal ulcer	141 (33)	217(31)	358(32)
No lesion found	114 (27)	121(17.5)	235(21)
Gastric ulcer	58 (14)	149(21.5)	207(18.5)
Gastric erosion	31(7.3)	38(5.5)	69(6.2)
Esophagitis	19 (4.5)	43(6.2)	62(5.5)
Esophageal varices	17 (4)	41(5.9)	58(5.2)
Tumours	6 (1.4)	46(6.6)	52(4.7)
Mallory-Weiss tear	24 (5.6)	13(1.9)	37(3.3)
Doudenitis	12 (2.8)	17(2.5)	29(2.6)
Portal hypertensive gastropathy	2 (0.47)	5(0.7)	7(0.6)
Angiodysplasia	1 (0.2)	3(0.4)	4(0.4)
More than one finding	27(6.2)	62(8.9)	89 (8)

Table III. Therapeutic endoscopic interventions for the study population

Therapeutic intervention	Patients (%)
Total therapeutic interventions	190 (17)
Adrenaline injection	179 (16)
Sclerotherapy for esophageal varices	10 (0.9)
Banding for esophageal varices	2 (0.1)

Underlying causes for the upper Gastrointestinal bleeding were found in 883 (79%) patients and no source of bleeding was found in 235 (21%) patients as shown in Table II.

The most common finding over all was duodenal ulcer. Eight percent of the patients had more than one abnormal endoscopic finding. Gastric ulcer and malignancy were more common in older age group. Mallory-Weiss tears were more common in the younger age group (5.6%) compared with older age group patients (1.9%). Therapeutic endoscopic interventions were done for 190 (17%) patients, as shown in Table III.

We compared our results with different international studies conducted elsewhere.

Discussion

All patients who developed acute gastrointestinal bleeding (Hematemesis tend to have more severe bleeding than those who present with melena alone) are usually admitted as an emergency to hospital. Only a small minority of young, fit patients who have self-limiting bleeding can be managed as outpatients, but even those need urgent investigations.[9,14]

Only 62% of our patients were aged over 50, which is different from that in Western countries. We found increasing age of the population presenting with acute upper gastrointestinal bleeding same as in other studies,[4,5,6,8] which firstly may be a reflection of the increasing age of the whole population in Jordan as 31% (n=347) of all patients were aged over 70 years. Secondly it may be due to the increasing prevalence of Helicobacter Pylori with age or due to the increasing use of Aspirin, or non-steroidal anti-inflammatory drugs in elderly patients, however these could not be defined in our retrospective study.

Upper gastrointestinal bleeding was more common in men at all age groups than that in women except in older patients (more than 70 years). This may be explained by excessive use of NSAID by old women or the longer life expectancy for women in Jordan.

We compared our results with different international studies conducted elsewhere.[15-21] Table IV showed a literature review of causes of upper Gastrointestinal bleeding in different parts of the world. In our study, where the underlying cause was found, duodenal ulcer (32%) was the most common diagnosis, furthermore, the diagnosis of duodenal ulcer was more common than gastric ulcer, which is consistent with other studies.

Variceal hemorrhage is still uncommon in Jordan, being the cause of 5.2% of hemorrhages in this study, while in other studies,[15-20] it ranged between

Table VI. Literature review of common causes of upper Gastrointestinal bleeding

Diagnosis	Phillip *et al* 1980[15]	Silverstein *et al* 1981[16]	Kohler *et al* 1989 [17]	Stollman 1997[18]	Wilcox 1999 [19]	Golanova 2004[20]	Thomopoulos *et al* 2004[21]	Our study
Duodenal ulcer	52.4	22.8	9	8	28	20	48.7	32%
Gastric ulcer	28.3	21.9	24	20	32	18.2	19.2	18.5%
Gastric erosion		29.6	11		8.2			6.2
Mallory-Weiss tear	1	8	5	8	6			3.3
Duodenitis		9.1	4	5.3	7		18.4	2.6
Esophageal varices	11.2	15.4	14	47	9	10.3	13.2	5.2
Esophagitis		12.8	5	6.8	7.5			5.5
Tumors	9.8	3.7	4	6.1	5.7			4.7

9-15.4%, which may explained by low prevalence of hepatitis C, and other diseases which may cause portal hypertension, as Schistosomiasis[21] in Jordan. The prevalence of hepatitis C antibody in healthy blood donors in Jordan is 1.7%.[22] Hepatitis C virus prevalence rates are estimated to range from 5.5% in Africa, 4.6% in the Eastern Mediterranean region, and 4% in the Western Pacific region.[23]

No source of bleeding was found in 21% of patients, which is a high percentage. This can be explained by the following: (1) Lesion may be missed on endoscopy in most endoscopies done in more than six hours of admission, (2) Mucosal lesion may have healed before patient was endoscoped such as in cases of erosions, Mallory-Weiss tear, or Dieulafoy's lesion, (3) Bleeding may have been from the third part of the duodenum or beyond (Jejunum, Meckel's diverticulum, or colon).[5-7]

There were several limitations in the study. Firstly, the number of patients taking NSAID and steroid was not reported in the records, and the state of Helicobacter Pylori was not known as we were not routinely testing for Helicobacter Pylori in cases of acute upper gastrointestinal bleeding. Secondly, the rate of re-bleeding after therapeutic interventions, repeated endoscopies, and percentage of patients who underwent surgery were not reported. Finally, analysis of the findings were limited to descriptive statistics in the form of frequencies and percentages.

Conclusions

The frequency of acute upper gastrointestinal hemorrhage increases considerably with age. Upper gastrointestinal bleeding was more common in men at all age groups than that in women except in older patients (more than 70 years). The most common finding for all age groups was duodenal ulcer. Malignancy was the most important finding in the older (> 50 years) age group. In the younger age group, duodenal ulcer, 'no lesion found', or Mallory-Weiss tears were the most common findings.

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