article

Upper Gastrointestinal Bleeding : an age Based Comparative Study

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Summary

One hundred cases presenting with upper gastrointestinal bleeding were assessed in this age-related study, in which patients were divided into two groups, one below the age of sixty and the other above the age of sixty, to study the difference in these two age groups as regards sex, residence, tobacco use, alcohol abuse, past history of upper gastrointestinal bleeding, previous history of disease related to upper gastrointestinal bleeding, concomitant diseases, hospital course and out come.

There was no statistical difference between the two age groups apart from a high percentage of erosive gastritis (27.5%) in the older age group versus (13.3%) in the younger age group and gastric ulcer (22.5%) in the older age groups versus (5%) in the younger age group. This study also showed that the older age group required more units of blood (6.1±5.3) versus (3.8 ±3.2) and had more concomitant diseases (55%) versus (23.3%), and had a higher mortality rate (17.5%) versus (1.6%).

Key words:

Upper gastro intestinal bleeding. Age. Blood transfusion. Mortality.

Introduction

Upper gastrointestinal bleeding (UGIB) is a common medical emergency associated with significant morbidity and mortality (1,2).

Population based studies from USA & UK confirms that over all incidence of upper-gastrointestinal bleeding is approximately 100 hospitalization per 100000 adults per year (3,4). In Iraq it accounted for 7.5% of hospital admissions to a medical unit (5).

In spite of modem methods of diagnosis, care and treatment, mortality has remained unchanged in the past 50 years ranging from 5- 20 % (6,7,8,9). On the other hand, the patient population over the same time period is also getting older, thus implying that mortality in younger age groups may be decreasing (10), or that mortality in the older age group is increasing (11).

Factors thought to influence the outcome of UGIB include patients age (10,12.13), the Underlying-cause (12) the rate and quantity of Bleeding, illnesses (14), presence of concomitant illnesses (12,13.14). coagulapathy (12) and drugs such as Non Steroidal Anti Inflammatory Drugs (NSAIDs) particularly in elderly people (15.16).

This is a prospective age based study in which the causes, sex distribution, previous history of UGIB. previous diseases related to UGIB, drug history, concomitant diseases and outcome, in two patient populations who presented with UGIB are assessed. Patients are compared in two age groups below sixty years and above sixty years old. The age of sixty years was chosen as a cutoff between the two groups, because it has been proven to be a determining cut off age to study outcome of UGIB in previous studies (10.13,14.17,18).

PATIENTS AND METHODS

One hundred patients who presented with UGIB in the medical and surgical units of Baghdad Teaching Hospital and G.I.T center at AL-Shaheed Adnan Hospital between August 1999 to August 2000 were studied.

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Patients who developed bleeding during admission whether they had a primary gastrointestinal disease or not, were not included in this study because it has been found that including such variable will cause bias in the final analysis (19).

A full history and clinical examination were done with a special emphasis on age. residence, smoking, alcohol abuse, drugs specially NSAIDs, previous history of UGIB, previous history of ulcer and liver disease, and other concomitant illnesses.

The clinical course of patients was followed from admission till discharge or death by clinical examination, number of pints of blood and plasma expanders transfused, intervention whether endoscopic or surgical.

The duration of hospital stay and fate of patient were noted. Endoscopic examination is now the procedure of choice with which to establish the cause of bleeding (20,21,22) that is why endoscopy was done to all patients and any patients in which endoscopy was not done was excluded from the study; and when repeat endoscopy was deemed necessary, this was noted. Endoscopy was done after variable period of time, ranging from on admission to several days after admission depending on the unit in which the patient was admitted, as there still is no single policy on timing of endoscopy.

Laboratory tests including packed cell volume (PCV), prothrombin time (PT) (INR), and serum albumin particularly to patients known to have Chronic Liver Disease, or discover to have Liver disease.

For the purpose of this study we divided the patients into two groups, patients age group less than 60 years (<60 years) and patients age group 60 years or more (> 60 years).

Chi-square test (X2). Fisher exact test, and student -1 - test were used in the statistical analysis for comparison between the two groups.

$P < 0.05$ considered the level of significance.

RESULTS AND TABLES

Table 1. shows the demographic characteristics of patients groups, the mean age for patients less than 60 years was (34.45 ± 13.1), and that of patients > 60 years were (67.15 ± 8.1).

Table 2. Shows the modes of presentation in-patients with UGIB and shows no statistical difference regarding percentage of patients presenting with haematemsis, or with malaena between the two age groups. Dyspeptic symptoms were present in the majority of patients but its presence was in no way discriminatory.

Table 3. shows the associated illnesses in patients presented with UGIB and there was no statistical difference between the two patients age groups regarding history of UGIB, history of peptic ulcer disease ,or history of liver disease.

A 23.3% of patients < 60 years and 55% of patients >. 60 years had concomitant diseases in addition to UGIB, which is statistically very highly significant ($P < 0.005$).

Regarding Laboratory data, there was no statistical difference between the two ages groups regarding, PCV, I.N.R, and serum albumin.

Table 4. shows the endoscopic sites of bleeding and shows no statistical difference regarding duodenal ulcer, oesophageal varices, oesophagitis between the two groups.

There was significant difference regarding the incidence of erosive gastritis between the two groups, which was more in patients > 60 years and also there was statistical difference regarding the incidence of gastric ulcer, which was also more in patients age group > 60 years. As regards stomal ulcer, Mallory Weiss syndrome, arterio-venous malformation, the -statistical analysis was not done because of the small sample size.

Eleven patients had more than one lesion, which could have been responsible for the bleeding.

Table 5. shows the hospital course and show that there was no statistical difference between the two groups regarding endoscopic therapy, surgery, rebleeding, nor length of hospital stay.

There was a statistical difference regarding the units of blood transfused 3.8 ± 3.2 in patients < 60 years, versus 6.1 ± 5.3 in patients > 60 years ($p < 0.05$).

Also there was a statistical difference regarding mortality as 1.6% in patients < 60 years and 17.5% in patients < 60 years ($p < 0.05$).

Table 6. shows the factors associated with mortality, the one mortality in patients < 60 years

had chronic liver disease and died from liver failure and on endoscopy he had grade IV oesophageal varice. Seven patients > 60 years died, four of them died because of hypovolemia, one had multiple gastric ulcers, two of them had gastric neoplasia with duodenal ulcers, the last had grade III oesophageal varices, two died as a result of UGIB and liver failure, the last one died because of pulmonary embolism. There was a statistical difference regarding the units of blood transfused 3.8 ± 3.2 in patients < 60 years, versus 6.1 ± 5.3 in patients >60 years ($p < 0.05$).

Also there was a statistical difference regarding mortality as 1.6% in patients < 60 years and 17.5% in patients < 60 years ($p < 0.05$).

Table 6. shows the factors associated with mortality, the one mortality in patients < 60 years had chronic liver disease and died from liver failure and on endoscopy he had grade IV oesophageal varices.

Table I : Demographic characteristics of patients.

Demographic characteristic	Patients age < 60 years	Patients age > 60 years	Notes
Mean age ± S. D.+	34.45 ± 13.1	67.15 ± 8.1	—
Sex			
Male	38 (63 %)	33 (82 %)	NS*
Female	22 (37 %)	7 (17.5 %)	NS*
Tobacco Use	12 (20 %)	6 (15 %)	NS*
Alcohol abuse	5(8.3 %)	4(10 %)	NS*
Drug (NSAIDs)	17(28.3 %)	10(25 %)	NS*
Residence			
Urban	50(83.3 %)	37 (92.5 %)	NS*
Rural	10(16.7 %)	3(7.5 %)	NS*

+ S.D Standard Deviation

* NS Not Significant

Table 2 : Modes of presantation of patients with upper gastrointestinal bleeding.

Parameter	Patients age < 60years	Patients age ⩾ 60 years	Notes
Dyspeptic Symptoms (pain, vomiting, acidity, dyspepsia, bloating).	51 (85 %)	35 (87.5 %)	NS*
Haematemesis.	41 (68.3 %)	28 (70 %)	NS*
Malaena	52 (86.6 %)	33 (82.5 %)	NS*

* NS Not Significant

Table 3 : Associated illness in - patients with UGIB.

Illnesses	Patients Age <60 years	Patients age ⩾ 60 years	Notes
History of UGIB	25(41.6 %)	14 (35 %)	NS*
History of Peptic Uicer disease	7 (11.6 %)	10 (25 %)	NS*
History of Liver disease	17 (28.3 %)	11 (27 %)	NS*
Concomitant illnesses+ (hypertension , ischaemic heart disease , diabetes mellitus , chronic renal failure , atrial fibrillation , epilepsy , cerebro vascular accident , chronic obstructive pulmonay disease , gout , valvular heart disease , Von Wilebrand disease) .	14 (23.3 %)	22 (55 %)	NS*

+Very highly significant P value < 0.005 .
* Not Significant

Table 4 . Endoscopic site of bleeding.

Bleeding site	Total Number	Patients age < 60 years	Patients age ≥ 60 years	Notes
Doudenal Ulcer	36 %	23 (38.33 %)	13 (32 %)	NS*
Oesophageal Varices	36 %	25 (41.66 %)	11 (27.5 %)	NS*
Erosive Gastritis	19 %	8 (13.3%)	11 (27.5 %)	P<0.05
Gastric Ulcer	12 %	3 (5 %)	9 (22.5 %)*	P<0.05
Oesophagitis	3 %	2 (3.3 %)	1(2.5 %)	NS*
A. V malformation	2%	2 (3.3 %)	—	—
Mallory Weiss Syndrome	2 %	2 (3.3 %)	—	
Stomal Ulcer	1 %	—	1 (2.5 %)	—
More than one lesion.	11 %	5 (15 %)	6 (15 %)	NS*

* NS Not Significant
+ Statistically significant P - Value < 0.05+
* Two of them proved to be malignant

Table 5 :Hospital Course of patients admitted with UGIB

Parameter	Patients age < 60 years	Patients age ≥ 60 years	Notes
Endoscopic therapy			
Variceal bleeding	23 (38.3 %)	3 (22.5)	NS*
Non Variceal bleeding .	3 (5 %)	3 (7.5 %)	NS*
Rebleeding required repeated Endoscopy	7 (11.6 %)	8 (20 %)	NS*
Units of blood transfused ✳ (Mean ± S. D. +)	3.8 ± 3.2	6.1 ± 5.3	P< 0.05
Surgery			
Variceal	1 (1.6 %)	—	—
Non Variceal	1 (1.6 %)	2 (5 %)	—
Mortality	1 (1.6 %)	7 (17.5 %)	P< 0.05
Hospital stay (days) (Mean ± S. D. +)	5.6 ± 5.2	5.8 ± 5.1	NS*

* NS Significant
✳ Statistically significant P- Value < 0.05
\+ Standard Deviation

Table 6. Factors associated with Mortality

Concomitant disease	Patients Age<60 years Cause of death	Endoscopic finding	Concomitant disease	Patients Age<60 years Cause of death	Endoscopic finding
Chronic liver disease	Liver failure	Grade IV oesophageal Varices	Hypertension	Hypovolemic Shock	Multiple gastric Ulcers
			Chronic liver disease	Hypovolemic Shock	Grade III Oesophageal Varices
			Ischemic Heart disease	Hypovolemic Shock	Gastric Ulcer Doudenal Ulcer
			Hypertension, diabetes mellitus	Hypovolemic Shock	Gastric Ulcer Doudenal Ulcer
			Epilepsy	Liver Failure	Grade III Oesophageal Varices
			Chronic liver disease	Liver Failure	Grade III Oesophageal Varices
			Diabetes mellitus	Pulmonary Embolism	Doudenal Ulcer

Discussion

Little has been written comparing UGIB between different age groups in Iraq, where as most attention has been focused on UGIB in general (5).

In this prospective study of 100 patients, 40 of them were above the age of sixty and 60 of them were below the age of sixty. It would probably have been more representative if the patients were further subdivided into specific age strata, however this would have diluted the number in each age category and would render statistical analysis meaningless.

There was no difference as regard sex, tobacco use, alcohol abuse, NSAIDs use and residence between the two age groups These results were similar to a study done in the USA by Segal. and Cello (17), except for alcohol abuse which was more in patients below the age of sixty in the American study. This difference may be related to the conservative and religious nature of our society. Dyspeptic symptoms were more in the younger age group , the American study(17) probably reflecting the higher alcohol abuse in this patient population.

Patients above the age of sixty in our study tended to have more concomitant diseases (55%) than that below the age of sixty (23.3%) which is statistically significant, this is similar to a study done by Ciopala, Kalacinski and Nowak (23).

This study showed that the major cause of UGIB as a whole in both age groups to be peptic ulcer disease (duodenal ulcer or gastric ulcer)

Which accounted for (48%) of patients and this is similar to a study done by Z. Kassir and A. Rashed (24). The second most common cause is oesophageal varices, which accounted for(36%) and this percentage is higher than the study done by Z. Kassir and A. Rashed (24). This difference may be related to the higher referral of cases of oesophageal varices to tertiary centers particularly the G.I.T. center. A similarly high incidence of varices as a cause of -UGIB was found in study done in Saudi Arabia by Ahmed et al, but this was not age related (25).

Erosive gastritis in this study was more in patients above the age of sixty and accounted for (27.5%) and that below the age of sixty was (13.3%). But in the study done by Segal and Cello (17) and another study done by Antler (26) there was higher incidence of erosive gastritis in the younger age group, this may be related to the higher incidence of alcohol abuse in the younger age group in the two previous studies done abroad.

Gastric ulcer in this study accounted for (5%) of lesions in patients below the age of sixty and (2.5%) for patients above the age of sixty and this is similar to the study done by Antler (26). Two of these gastric ulcers in the older age group proved to be malignant, both of these patients had concomitant duodenal ulcer, which is extremely uncommon in gastric malignancies, however the fact hat both patients used NSAIDs may explain this concurrence (5).

Although there was no difference between the two groups as regards NSAIDs intake, the higher incidence of erosive gastritis and gastric ulcer in the older age group may be related to the increased liability to the harmful effect of NSAIDs in elderly people (15,27).

The higher incidence of Mallory Weiss Syndrome in the previous two studies done by Segal and Cello (17), and that done by Antler (26) in the younger age group may be related to the higher incidence of alcohol abuse in this age group. In our study there were only two cases of Mallory Weiss Syndrome and both of them were alcoholic and were below the age of sixty.

Our study showed no statistical difference in the incidence of doudenal ulcer between the two age groups, this differs from the study done by Segal and Cello (17) and that done by Antler (26)in Which there was a higher incidence of doudenal ulcer in the older age group, this may be related to the higher incidence of Helicobacter Pylori infection in our country (28), as there is a high association between doudenal ulcer and Helicobacter pylori infection (27).

In our study elderly patients required more units of blood (6.1± 5.3) than the younger age group (3.8 ± 3.2) and this is similar to the study done by Permut and Cello (29).

In our study there was higher mortality rate in the older age group (17.5%) versus (1.6%), this is similar to a study done in Jordan which showed increasing mortality with increasing age (30) and similar to a study done by Silverstein (13), Schiller (2) and Morris (32). In conclusion from this age - based study, we can conclude that erosive gastritis and gastric ulcer were more common in the older age group.

The older group also had a higher transfusion requirement and a higher mortality.

Concomitant diseases were more common in the older age group, which may have contributed to the increased morbidity and mortality

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