Analysis of Patients With Acute Upper Gastrointestinal System Hemorrhage Applying to Kahramanmaras Sutcu Imam University Medical Faculty Emergency Department

Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Acil Servisine Akut Üst Gastrointestinal Sistem Kanaması ile Başvuran Hastaların Analizi

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Özet

Amaç: Gastrointestinal sistem kanamaları acil serviste sıkça karşılaşılan ve hayatı tehdit etme potansiyeli yüksek olan bir sağlık sorunudur. Acil servisimize başvuran ve üst gastrointestinal sistem kanama tanısı alan hastalardaki etiyolojik sebepleri, klinik bulguları, endoskopik bulguları ve prognozu belirlemek için bu çalışmayı planladık.

Gereç ve Yöntemler: Üst gastrointestinal sistem kanaması nedeniyle acil servise başvuran hastaların dosyaları retrospektif olarak incelendi. Çalışmaya alınan 31 hastanın demografik verileri, klinik özellikleri, etiyolojik sebepleri, laboratuvar ve endoskopi sonuçları incelendi. İstatistiksel değerlendirmede Student t ve Oneway ANOVA testi ve SPSS 20.0 paket programı kullanıldı. İstatistiksel olarak p<0.05 anlamlı kabul edildi.

Bulgular: Hastaların en sık başvuru sebebi hematemezdi. Hastalara yapılan endoskopi işlemi sonucunda en sık eroziv gastrit saptandı. Tedavi olarak %16.1 oranında hastaya skleroterapi, diğer hastalara da medikal tedavi uygulanmıştı. Hastaların %83.9'u taburcu olmuş, %16.1'i ise exitus olmuştu.

Sonuç: Non-steroid anti-inflamatuar grubu analjezikler ve antiagregan grubu ilaçlar üst gastrointestinal sistem kanamasında önemli rol oynamaktadır. Özellikle ek hastalık öyküsü olan yaşlı popülasyonun ilaç kullanımı dikkatli sorgulanmalı ve analjezikler reçete edilirken gastrointestinal sistem kanama olasılığı unutulmamalıdır. Mortalite üst gastrointestinal sistem kanamalı hastalarda yüksektir. Tedaviye hızla başlanmalı ve endoskopi en kısa sürede planlanmalıdır.

Anahtar kelimeler: Acil servis, Endoskopi, Gastrit, Gastro intestinal sistem kanaması, Ülser

Abstract

Objective: Gastrointestinal system bleeding is a health problem with a high life-threatening potential that is frequently encountered in emergency departments in hospitals. This study was planned to determine the etiologic causes, clinical findings, endoscopic findings, and prognosis in patients admitted to our emergency department and diagnosed with upper gastrointestinal system bleeding.

Material and Methods: The files of the patients admitted to emergency department due to upper gastrointestinal system bleeding were retrospectively reviewed. Demographic data, clinical characteristics, etiological causes, laboratory and endoscopic results of 31 patients were reviewed. In statistical evaluation, Student t test, One way ANOVA test and SPSS 20.0 package program was used. p<0.05 was considered statistically significant.

Results: Hematemesis was the most common reason for admission. As a result of the endoscopic procedure performed on the patients, erosive gastritis was found most frequently. 16.1% of the patients underwent sclerotherapy, and other patients underwent medical treatment. 83.9% of the patients were discharged, however, 16.1% of them died.

Conclusion: Analgesics of the non-steroidal anti-inflammatory drugs group and the drugs of the antiaggregant group play a significant role in upper gastrointestinal system bleeding. The drug use should be carefully investigated especially in the elderly population with a history of comorbidities, and the possibility of gastrointestinal system bleeding should not be forgotten while prescribing analgesics. Mortality is high in patients with upper gastrointestinal system bleeding, the treatment should be initiated quickly, and endoscopy should be planned as soon as possible.

Keywords: Emergency department, Endoscopy, Gastritis, Gastrointestinal system bleeding, Ulcer

INTRODUCTION

Gastrointestinal (GI) system bleeding is a health problem with a life-threatening potential that is frequently encountered among the reasons for admission to the emergency department in hospitals (1). Upper GI bleeding (UGIB) refers to bleeding into the GI tract in the region (UGIB; includes bleeding in the esophagus, stomach, proximal duodenum) from the upper esophageal sphincter to the proximal duodenum (up to the Treitz ligament). Bleeding distal to the Treitz ligament is called lower GI bleeding (2). The mortality rate in UGIB ranges between 5-10% despite all the improvements in treatment methods (1). Due to the risk of mortality, the evaluation, diagnosis and treatment approaches for the patients with UGIB during their stay in emergency departments are of particular importance. Peptic ulcer is the cause of 50% of UGIB. 30-50% of patients have a history of non-steroidal anti-inflammatory drug (NSAID) use. Although GI bleeding is more common in males and elderly people, coexisting diseases also deteriorate the patient's prognosis. The mortality rate is 8% under the age of 60 and 13% above the age of 60 (3,4). Advanced age, male gender and the presence of helicobacter pylori, smoking, alcohol, non-steroidal anti-inflammatory drugs (NSAID), antiaggregant, anticoagulant and steroid use, diverticulum, gastrointestinal malignancy, radiotherapy, vascular disease, chronic kidney failure, aortic aneurysm, angiodysplasia, polyp, cirrhosis, varicose vein, peptic ulcer, gastritis, history of previous GI bleeding and Endoscopic Retrograde Cholangiopancreatography (ERCP) can be listed as the risk factors for GI bleeding (5).

UGIB has two important examination findings: hematemesis and melena.

Hematemesis: Patients describe it as bloody vomiting as a complaint. Hematemesis either occurs in the form of bright red fresh bleeding or may turn brown (like coffee grounds) as hemoglobin converts to hematin after the blood comes in contact with stomach acid (6). Melena: It is tar-colored, black, runny, and foul-smelling stool. Melena contains digested blood and is therefore black. At least 50-100 ml of bleeding is required for the occurrence of melena. Even if the bleeding stops, melena may continue for three more days (6).

While 80% of GI bleeding can stop spontaneously, some GI bleeding can be severe and fatal enough to cause hemorrhagic shock. It is recommended to perform endoscopy for the patients with a diagnosis of GI bleeding within the first 24 hours after their admission. In patients with active bleeding, hemostasis can be achieved by endoscopic intervention. Patients in whom hemodynamic stability cannot be ensured and bleeding control cannot be achieved are candidates for surgical treatment (1).

This study was planned to determine the etiologic causes, clinical findings, endoscopic findings, and prognosis in patients who were admitted to our emergency department and diagnosed with upper GI bleeding.

MATERIALS AND METHODS

In this descriptive study, the data were obtained by retrospectively examining the files of 37 patients admitted to emergency department due to upper GI between September 2017 and March 2018. Ethics committee approval was obtained from Kahramanmaras Sutcu Imam University Medical Faculty Ethics Committee (Ethics committee session date: 08/2018 and ethics committee decision no: 14). Six patients with missing data and who did not undergo endoscopy were excluded from the study. Six patients whose data were missing and who did not undergo endoscopy were excluded from the study. Demographic data, clinical characteristics, etiological causes, laboratory results and endoscopic reports of 31 patients included in the study were examined. For statistical evaluation, the necessary tests were performed using the SPSS 20.0 package program. Categorical variables were expressed by using numbers and percentages. Measurement-based continuous variables were presented as mean±standard deviation by checking their conformity to normal distribution. In the evaluation of the difference between the groups, the level of change was evaluated using the Student t test and Oneway ANOVA test, and the Post-Hoc Tukey analysis was performed for the difference between the groups. $p < 0.05$ was considered statistically significant.

RESULTS

31 patients, 14 of whom were females, were included in the study. The mean age of the patients in our study was found to be 64.23±20.34 years. Although the mean age of 60.64±20.17 years of female patients was lower compared to male patients with a mean age of 67.35±20.58 years, the difference was not significant (p=0.369).

While 17 patients (54.8%) had A rh+ blood type, 3 patients (9.7%) had A rh-, 5 patients had 0 rh+, 2 pa-

tients had 0 rh-, 2 patients had B rh+, and 1 patient each had B rh– and AB rh+ blood type (**Table 1**).

The most common reason for admission was hematemesis by 41.9% (n=13), followed by melena by 32.3% (n=10) and hematemesis+melena by 16.1% (n=5). Two patients (6.5%) had a complaint of hematochezia, and 1 patient (3.2%) had a complaint of hematochezia+melena. 71% (n=22) of the patients regularly used at least one drug (**Table 1**).

NSAID was the most commonly used drug by 32.3% (n=10), followed by those using antiaggregant drugs by 25.8% (n=8). The rate of anticoagulant drug use was found to be 19.3% (n=6). One patient (3.2%) uses drugs other than anticoagulant, antiaggregant and NSAID class. 6 patients did not have a history of regular drug use (**Table 1**).

Hypertension was found to be the most common comorbidity in patients by 45.2% (n=14). It was determined that 10 patients (32.2%) had coronary artery disease, 2 patients (6.5%) had liver disease, 2 patients (6.5%) had chronic kidney disease, 3 patients (9.7%) had valvular heart disease, 7 patients (22.6%) had diabetes mellitus, 3 patients (9.7%) had malignancy, and 4 patients (12.9%) did not have any comorbidity (**Table 1**).

As a result of the endoscopy procedure performed on the patients, erosive gastritis was detected in 13 patients (41.9%). It was determined that the number of patients diagnosed with duodenal ulcer was 11 (35.5%), the number of patients diagnosed with gastric ulcer was 7 (22.6%), the number of patients diagnosed with malignancy was 2 (6.5%), the number of patients diagnosed with esophageal varices was 3 (9.7%), the number of patients diagnosed with duodenitis was 2 (6.5%), and the number of patients with dieulafoy lesion was 1 (3.2%) (**Table 1**).

While sclerotherapy was performed in 5 patients (16.1%), 26 (83.9%) patients were treated with oral or intravenous (IV) medical treatment. Among the patients who underwent sclerotherapy, 2 had duodenal ulcer, 1 had gastric ulcer, 1 had esophageal varicose, and 1 had dieulafoy lesion (**Table 1**).

While 26 of the patients (83.9%) were discharged, 5 patients (16.1%) died. Five patients who died had undergone oral or IV medical treatment. No exitus cases were observed in patients undergoing sclerotherapy. While the mean age of the patients who died was 72.4±10.21, the mean age of the discharged patients was 62.76±21.55 (p=0.147) (**Table1**).

Table 1. General characteristics of the patients		
	n	**%**
Gender		
Female	14	45.2
Male	17	54.8
Blood group		
A rh+	17	54.8
A rh-	3	9.7
0 rh+	5	16.1
0 rh -	2	6.5
B rh +	2	6.5
B rh –	1	3.2
AB rh +	1	3.2
Reason for Admission		
Hematemesis	13	41.9
Melena	10	32.3
Hematemesis + Melena	5	16.1
Hematochezia	2	6.5
Hematochezia + Melena	1	3.2
Drug Used		
NSAID	10	32.3
Antiaggregant	8	25.8
Anticoagulant	6	19.3
Anticoagulant, Antiaggregant and NSAID drug	1	3.2
No drug use	6	19.3
Comorbidity		
Hypertension		
Coronary Artery Disease	2	6.5
Liver Disease	3	9.7
Chronic Kidney Disease	2	6.5
Valvular Heart Disease	1	3.2
Malignancy	2	6.5
Other	2	6.5
Diabetes Mellitus + Hypertension	3	9.7
Coronary Artery Disease + Hypertension	3	9.7
Valvular Heart Disease + Hypertension	4	12.9
Diabetes+ Coronary Artery Disease + Hypertension	1	3.2
Diabetes+ Hypertension + Kidney Disease + Malignancy	3	9.7
No comorbidity	1	3.2
	4	12.9
Endoscopy Result		
Erosive Gastritis	13	41.9
Duodenal Ulcer	11	35.5
Gastric Ulcer	7	22.6
Malignancy	2	6.5
Esophageal Varicose	3	9.7
Duodenitis	2	6.5
Dieulafoy Lesion	1	3.2
Treatment		
Sclerotherapy	5	16.1
Oral or IV Medical Treatment	26	83.9
Prognosis		
Exitus	5	16.1
Discharge	26	83.9
Total	263	100

NSAID: Non-steroidal anti-inflammatory drugs

The mean hemoglobin values of the patients were found to be 9.49±2.72. The mean platelet values were found to be 269.9±78.14. The mean INR values of the patients were found to be 1.90±2.03. While the mean age of the patients who underwent sclerotherapy was 51.4±26.15 years, the mean age of the patients who received oral or IV medical treatment was 66.8±18.63 years (p=0.266) (**Table 2**). The mean hemoglobin value of the patients who died was 9.82±1.56, and the mean hemoglobin value of the discharged patients was 9.43±2.91 (p=0.675). While the platelet value of the patients who died was 234.40±108.21, the platelet value of the discharged patients was found to be 276.73±71.78 (p=0.442). While the INR value of the patients who died was 1.25±0.33, the INR value of the discharged patients was found to be 2.03±2.21 (p=0.103).

While two of the patients who died did not use any drug, two patients used only drugs of the NSAID group and one patient used only antiaggregant drugs. The mean age of 8 patients who used only NSAID (57.62±23.16) was found to be lower than the mean age (73.84±12.84) of 13 patients who used antiaggregant or anticoagulant or NSAID together with one of them (p=0.05) (**Table 2**). While the mean hemoglobin value of the patients who used only NSAID was found to be 11.18±2.33, the mean hemoglobin value of the patients who used antiaggre-gant or anticoagulant or NSAID together with one of them was found to be 8.37±2.42. Apart from them, the mean hemoglobin value of the patients who used drugs or did not use any drug was found to be 9.59±2.87. The hemoglobin values of the patients who used only NSAID were found to be significantly higher than the mean hemoglobin values of the patients who used anti-aggregant or anticoagulant or NSAID together with one of them (p=0.05) (**Table 2**). While the platelet value of the patients who used only NSAID was 306.25±27.87, the mean platelet value of the patients who used anti-aggregant or anticoagulant or NSAID together with one of them was 261.38±54.92, and the platelet value of the patients who used drugs other than them or did not use any drug was found to be 251.90±118.69 (p=0.139). While the INR values of the patients who used only NSAID was found to be 1.06±0.11, the mean INR value of the patients who used antiaggregant or anticoagulant or NSAID together with one of them was 2.88±2.85, and the INR value of the patients who used drugs other than them or did not use any drug was found to be 1.21±0.19 (p=0.115).

The hemoglobin value of the patients treated with sclerotherapy was found to be 11.68±2.13, which was significantly higher than the hemoglobin value of the patients treated with drugs and medical treatment

Table 2. Comparison of the variables with some characteristics of the patients				
	n	**Mean ± Standard Deviation**		
Age Sclerotherapy Oral or IV Medical Treatment	5 26	51.40±26.15 66.80±18.63	t= -1.257	p=0.266
Age Exitus Discharge	5 26	72.40±10.21 62.76±21.55	t= 1.548	p=0.147
Age Only NSAID Antiaggregant, anticoagulant, NSAID	8 13	57.62±23.16 73.84±12.84	**t= -2.078**	**p=0.05**
Hemoglobin Only NSAID Antiaggregant, anticoagulant, NSAID Other Drugs + No Drug	8 13 10	**11.18±2.33a** **8.37±2.42b** 9.59±2.87**c**	**F= 3.003**	**p=0.05**
Hemoglobin Sclerotherapy Oral or IV Medical Treatment	5 26	11.68±2.13 9.07±2.65	**t= -2.400**	**p=0.049**
INR Sclerotherapy Oral or IV Medical Treatment	5 26	1.14±0.11 2.05±2.20	**t= -2.068**	**p=0.049**

* Pairwise Student's t test, in which age and treatment applied, prognosis and drugs used, and also hemoglobin and INR value and treatment applied were compared, was performed. The Oneway ANOVA test was used to compare the hemoglobin value with the drugs used in more than 2 groups, and the difference between the groups was evaluated by Post-Hoc Tukey analysis. There is a significant difference between those with letter a and b. NSAID: Non-steroidal anti-inflammatory drugs, IV: Intravenous

(9.07±2.65) (p=0.049). While the platelet value of the patients treated with sclerotherapy was found to be 233.60±113.53, the platelet value of the patients treated with drugs and medical treatment was found to be 11.68±2.13 (p=0.264). The INR value of the patients treated with sclerotherapy was found to be 1.14±0.11, which was significantly higher than the INR values (2.05±2.20) of patients treated with drugs and medical (p=0.049) (**Table 2**).

DISCUSSION

Gastrointestinal system bleeding is a health problem with a life-threatening potential that is frequently encountered among the reasons for admission to the emergency department in hospitals (1). Despite the developments in diagnosis and treatment (new endoscopic techniques and new surgical techniques) in addition to improved patient care conditions and technological developments, mortality rates are still around 10% even today (7,8).

According to the results of our study, the male patient/female patient ratio was found to be 1.2/1 in patients with upper GI bleeding. In the study conducted by Rockall et al., the male patient/female patient ratio was found to be 1.7/1 (9). The distribution of the patients with upper GI bleeding by gender was found to be similar to the literature in our study. In the study conducted in Trabzon by Suleyman T. et al., it was determined that while the mean age of the patients with upper GI bleeding was 63, the mean age of men was 62, and the mean age of women was 67 (7). In our study, the overall mean age was found to be 64 in patients with upper GI bleeding, and this ratio was found to be 67 in men and 60 in women. The reason for higher mean age in female patients with upper GI bleeding may be due to geographical differences.

In the study conducted by Sereda et al., the mortality rate was found to be approximately 15% (10). In the study conducted by Suleyman T. et al., 18.4% of the patients who were followed up due to upper GI bleeding died (7). In the study of Rockall et al., the mortality rate was found to be 11% (9). The in-hospital mortality rate of the patients included in our study was found to be 16.1%. The mortality rates in the literature and the mortality rates found in our study were found to be similar. Among the patients included in our study, all of the patients who died were over 60 years old and had comorbidities.

In our study, the most common complaint of patients with upper GI bleeding at admission to the hospital was hematemesis, the second complaint was melena. The most common comorbidities in patients in our study were found to be hypertension by 45.2%, coronary artery disease by 32.2%, valvular heart disease by 9.7%, and diabetes mellitus by 22.6%. In our study, erosive gastritis was found to be the most common cause of bleeding in 41.9% of patients as a result of the endoscopy procedure, followed by duodenal ulcer by 35.5%, gastric ulcer by 22.6%, and other causes by 3-9% (malignancy, esophageal varices, duodenitis and dieulafoy lesion). In the study conducted by Thomopoulos et al., it was found that the causes of upper GI bleeding included erosive gastritis (10.8%), peptic ulcer (45%), esophageal varices (13.9%), and malignancy (7.2%) (11). In the study conducted by Suleyman T. et al., the rates of the causes of upper GI bleeding were determined as erosive gastritis (22.9%), gastric ulcer (22.3%), duodenal ulcer (22.3%), esophageal varices (17.9%) and other causes (malignancy, visible vessel, esophageal ulcer and esophagitis) by 2-9% (7). In the study conducted by Rockall et al., the causes of upper GI bleeding were found to be erosive gastritis (10.3%), peptic ulcer (36.1%) and other causes 4-5% (esophageal varices and malignancy) (12). In our study, the rates of erosive gastritis and peptic/duodenal ulcer bleeding were higher than the rates in the literature. In our study, the most commonly used drug was NSAID by 32.3%, followed by those who used antiaggregant drugs by 25.8%. The rate of use of anticoagulant drugs was found to be 19.3%. Due to the increase in cardiovascular diseases and rheumatological diseases today, high rates of NSAID, acetylsalicylic acid (ASA) and anticoagulant use may be the reason for the high incidence of erosive gastritis and ulcer.

In the study conducted by Suleyman T. et al., the relationship between treatment methods and mortality was not found to be statistically significant. However, it was recommended to perform endoscopy for the patients within the first 24 hours after admission, to provide hemostasis if necessary, to perform re-endoscopy in case of re-bleeding, and to perform surgical treatment if hemostasis could not be achieved (7). In the study conducted by Lau et al., it was reported that performing endoscopy again in patients with recurrent GI bleeding after the first endoscopic administration reduced the need for surgical treatment without increasing the risk of mortality and led to fewer complications (13). In the

study conducted by Ekrem G. et al., it was indicated that 6.1% of the patients were discharged from the emergency department after endoscopy, that 93.9% of the patients were hospitalized and that 7.1% of the patients included in the study died (14). While sclerotherapy was performed for 16.1% of the patients with upper GI bleeding included in our study, 83.9% of the patients were administered with oral or intravenous medical treatment. While 83.9% of the patients were discharged, 16.1% of them died. Five patients who died had undergone oral or IV medical treatment. No exitus cases were observed in patients undergoing sclerotherapy. The platelet values of the patients who died were found to be lower than the platelet values of the discharged patients.

In conclusion, analgesics of the NSAID group and the drugs of the antiaggregant group play a significant role in upper GI bleeding. The drug use history of the elderly population, especially with a history of diseases such as coronary artery disease and valvular heart disease, should be carefully investigated, and the possibility of GI bleeding should not be forgotten while prescribing analgesics. Furthermore, gastroprotective therapies must be provided in these groups of patients. Since mortality is high in patients with upper GI bleeding, the treatment should be initiated quickly, and endoscopy should be planned as soon as possible.

Declaration of conflicting interests: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Source(s) of support / Funding: We have no source(s) of support / funding.

Authors Contribution Statement: The authors declare that they have contributed equally to the article.

Ethical Approval: Ethics committee approval was obtained from Kahramanmaras Sutcu Imam University Medical Faculty Ethics Committee (Ethics committee session date: 08/2018 and ethics committee decision no: 14)

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