ORIGINAL ARTICLE

Determine the Mortality Rate of patients with Gastrointestinal Bleeding Admitted to the Emergency Unit

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ABSTRACT

Background: gastrointestinal bleeding are very common cases in emergency departments and is the most common reason for hospital admission.Gastrointestinal bleeding is a life-threatening condition that causes death and serious complications, clinical and considerable economic times and admission to hospital for immediate diagnosis and treatment is very important.

Methods: This Cross-sectional study on 340 patients with GI bleeding referring to Imam Khomeini hospital in Sari patients hospitalized during the transfusion, transfer to ICU, surgery and mortality will be the follow-up. As well as age, sex, length of hospital stay for patients with the disease will be recorded and data analysis will be done by SPSS software.

Results: After examining the records and statistical analysis found that of the 340 patients we studied, 206 (60.6%) male and 134 (39.4%) were female. Analysis was conducted on the data showed that the average age of patients was 19.8 ± 57.16 youngest patient was 9 years old and the oldest 114 years. Racially in 337 patients showed that 311 patients (91.5%) subjects were from Mazandaran province, 8 patients (2.4%) leave, 5 patients (1.5%) Turkmen, three of them was kord (0.9%), 1 Arab (0.3%), and 9 (2.6%) were Persian. Between PPI use and the results of endoscopic significant relationship was found (P = 0.028), of 278 patients GIB, 233 patients (83.8%) UPPER affecting the digestive system and 45 patients (16.2%) LOWER and the findings of 272 patients upper gastrointestinal endoscopy were related to the 233 system, constituted 85.6% of .there was a significant relationship between T increased, BUN and endoscopic findings (P = 0.001), increasing CR and endoscopic findings (P = 0.001) and an decrease in HB and endoscopic findings (P = 0.034).

Conclusion: Between sex and the difference between the results of endoscopic digestive problems in the upper gastrointestinal or lower gastrointestinal tract, there was no significant relationship (P = 0.149). Between age and endoscopic findings there was a significant relationship (P = 0.007). There is no significant relationship between race and digestive problems (P = 0.203). 262 patients (77.1%) were hospitalized in public department, and 41 (12.1%) were hospitalized in ICU and 21 patients (6.2%) died. Between endoscopy results and outcomes of patients there was a significant relationship (P = 0.001) .

Key words: Outcome - gastrointestinal bleeding - Emergency Department

INTRODUCTION

In developed countries, the annual incidence of hospital admissions for gastrointestinal bleeding (GIB) is approximately 1% and the mortality rate is about 5 to 10 percent[1,2]. Peptic ulcers are the most common cause of upper gastrointestinal bleeding and almost half of cases[3]. In addition to clinical protests, Profile ulcer on endoscopy can provide important information about its prognosis[4]. Several clinical trials have shown that continuous infusion of high-

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dose intravenous PPI to slow the bleeding was coming. Prevention of recurrent bleeding is based on three main factors in the pathogenesis of Helicobacter pylori ulcer-like, NSAID and increase acid secretion. Eradication of Helicobacter pylori infection in this group of patients, the risk of re-bleeding severely reduced to less than 5% lead[5,6]. GIB and abrasion would occur due to NSAID use, alcohol and stress. Stress-induced gastric mucosal injury in critically ill patients due to severe trauma, major surgery, burns over the body, the disease occurs mainly intracranial bleeding disorders[7,8,9,10,11]. Other causes of rare bleeding from the upper gastrointestinal tract are neoplasm, fistula, vascular lesions, including Telangiectasia inherited bleeding ectasia vessels in the gastric antrum, the lesion Dieulafoy, Gastropaty of prolapse, hemobilia and etc. The most common sources of bleeding from the small intestine causes include vascular tumours (such as adenocarcinoma, leiomyoma, lymphoma, benign polyps, carcinoid, metastases and lipoma and wear and ulcers caused by NSAID). Other rarer causes include Crohn's disease, infections, ischemia, vasculitis, varices of the small intestine, diverticulum, Meckel's diverticulum, cysts caused by condensation plug intestine, and colon emboli. Meckel's diverticulum is the most

common and significant cause of bleeding from the lower gastrointestinal tract (LGIB) in children with incidence as a cause of bleeding is lower with increasing age. In adults, an advance of 40 to 50 years old, small bowel tumors are the leading cause of gastrointestinal bleeding of unknown origin. While after the age of 50 to 60 years old, vascular lesions caused by the use of NSAID, are more common [12]. The source of bleeding hemorrhoids and fissures of the colon as the most common cause of lower gastrointestinal bleeding, which then diverticulum, vascular neoplasms and colitis is most common in adults. In children and adolescents, the most common cause of bleeding colon polyps, inflammatory bowel disease and childhood. Colon bleeding in nearly 80% of the stops on their own and in 20 to 25 percent of patients would relapse. Intra-arterial vasopressin or embolization, the bleeding has stopped and will indicate in refractory cases surgery[13,14]. Measuring heart rate and blood pressure are the best ways to evaluate the conditions of patients suffering from gastrointestinal bleeding. Clinically, severe bleeding in heart rate or blood pressure status changes and finally, hypotension in the supine position. In contrast, the haemoglobin in acute bleeding from the gastrointestinal tract does not drop immediately[15]. To differentiate upper from lower gastrointestinal bleeding, bleeding site, and the greater will be the likelihood Melena. Hematemesis represents is a source of upper gastrointestinal bleeding (above the ligament Treitz). As so on, it represents a source of hematochezia, is lower for gastrointestinal bleeding generally. Intestinal bleeding lesions can appear in the form of Melena or hematochezia. Other evidence of upper gastrointestinal bleedings are: the intensification of bowel sounds, and increased BUN (blood proteins due to reduced plasma volume and absorption from the small intestine). Nasogastric aspiration non-blood could be seen up to 18% of upper tract bleeding is usually the source of the duodenum. Even the contents of the colour of bile cannot rule out bleeding from an injury after pylorus, as reported in approximately 50% of patients with bile aspiration is not correct. Could not examine the contents of which appeared in the blood, and for the presence of occult blood is not clinical valued [15,16]. Diagnostic evaluation of patients with gastrointestinal bleeding history and physical examination often cannot help to identify the source of gastrointestinal bleeding. Choice of the diagnostic procedure in patients with upper gastrointestinal bleeding is Upper endoscopy and should be done immediately in patients with hemodynamic instability (hypotension, heart rate or blood pressure or status changes). Ambulances also in the early stages of the treatment of the disease for bleeding. High-risk patients with severe haemorrhage and endoscopic findings (varicose veins, ulcers, active bleeding or with a visible vessel) can be treated with endoscopic haemostatic helps, while individuals with low-risk lesions (ulcers with clean bases, tears Malory Weiss -, Gastropaty erosion or bleeding) if the vital signs are normal hemoglobin is other underlying medical condition, may be clearance[17]. Gastrointestinal bleeding of unknown origin, persistent or recurrent bleeding, endoscopic or radiographic procedures that help the dye, it cannot identify a source for this type of bleeding can manifest itself (eg, melena, hematochezia) or hidden. Current guidelines, angiography as the initial assessment procedure for cases of severe bleeding of unknown origin and recommend an endoscopic procedure to examine the entire length of the small bowel video capsule makes it possible, for others propose. Enteroscopy drift to help a child or a colonoscope to view the entire duodenum and jejunum used part of, as well as basic evaluation method can be used. A systematic review of 14 trials that compared the healing method Enteroscopy drift, "clinically significant findings" to respectively 26% and 56% of patients in the methods showed. However, manipulate and view the complete lack of control over bowel capsule can be prevented. In addition, there is the possibility of tissue samples and medical interventions. If capsule endoscopy is positive, treatment would be done based on findings obtained (e.g., laparoscopy, Enteroscopy). If capsule endoscopy is negative, according to new recommendations will be considered by the patient or if clinical circumstances required (eg, recurrent bleeding, need for transfusion or hospitalization) further investigation should be done. The newer endoscopic techniques (such as Enteroscopy double balloon, single balloon and rotate) to allow physicians to examine a large part or the entire length of the small intestine, sample preparation and, if necessary, treat the waste. Nowadays, newer imaging techniques (Enteroscopy MR, CT) are frequently replace older methods for small bowel radiography (like Enteroscopy) are used. Other tests that are used include technetium-labeled red blood cell scintigraphy, angiography, which even after the bleeding can be useful because it helps identify abnormalities remember vascular tumor, and scintigraphy with technetium pertechnetate to detect mechanical diverticulum (particularly in young patients). When all tests in patients with persistent or recurrent bleeding are severe, requiring blood transfusions are negative, endoscopic surgery, will be indicated[18].

METHODS

This cross-sectional study has done on 340 patients with GI bleeding and were referred to Imam Khomeini hospital in Sari city, Northern of Iran during 2018. Exclusion criteria from studies of coagulation and bleeding disorders are the new situation. All patients admitted to the hospital during the transfusion, transfer to ICU, surgery and mortality were about follow-up. As well as age, tender, duration of hospitalization and for patients with comorbidities were recorded and analyzed to compare outcomes between sexes, age groups and co-morbidity and Chi-square test was used. SPSS 16 statistical software is used for data analysis and P-Value less than 0.05 was considered significant.

RESULTS

A total of 340 patients were reviewed, 206 (60.6%) male and 134 (39.4%) were female. Most initial diagnosis in the triage of Hematemesis (30%), GIB (28.8%) and melena (32.4%) (Table 1). 262 patients (77.1%) in the emergency department, 41 patients (12.1%) were hospitalized in ICU and 21 patients (6.2%) died.

137(40.2%) of all patients were smokers and 76 (22.3%) had a history of PUD. Most of them had a history of drug-related.Aspirin in 146 patients (42.9%), NSAID in 183 patients (53.8%), Plavix in 77 patients (22.6%) and warfarin in 9 patients (2.6%), 47 patients (13.7%) and 62 patients (18.2%) PPI for the treatment of peptic ulcers than

he used H2 blocker.Most clinical symptoms of patients with GIB related to Melena with a prevalence of 33.5%, Melena + Hematemesis (coffee-ground) (19.1%) and Melena + Hematemesis (fresh-blood) 15%, respectively.

Most patients complained for the abdominal pain on admission, 153 patients (45%), lethargy 61 cases (17.9%), fever and nausea in 24 patients (7%) and dysphagia in 22 (6.4%), respectively (Table 3). Abdominal examination of 118 patients (34.7%) were positive, 90 patients (76.3%), tenderness, 4 patients (3.4%), hepatomegaly, 13 patients (11%), ascites.

In 20 patients the ofhematochezia or hematemesis there was wrong diagnosis. 9 patients (45%) and bleeding teeth and 2 patients (10%), epistaxis were 6 patients (30%), products of iron, 2 patients (10%) Starters red and 1 (5%) had consumed alcohol.

The mean age of patients was 57.16 ±19.8. The youngest patient was 9 years old and the oldest 114 years. Average (respiratory rate) RR was 18.05±2.88, respectively. The highest and lowest breathing was 12 to 28.In this study (lying pulse rate) PR was 83.19±14.16 and the lowest average pulse lying 40 to 150.In our study (pulse rate seated) PR SITE was 83.56±13.98 and the lowest average pulse to pulse sit 40 and the highest was 145.

In this study we recognized that the greatest pressure mm Hg systolic blood pressure lying and least 8 mm Hg was 20 and the average time was 11.4±1.7. In our study we saw the greatest pressure, diastolic blood pressure 10 mm Hg lying and least 4 mm Hg and a mean of 7.13±1.1, respectively. In sitting systolic blood pressure, peak pressure was 20 mm Hg and mean of 11.3±1.8 least 6 mm Hg and diastolic blood pressure 10 mm Hg and sitting hardest least 4mmHg and a mean of was 7.1±1.2.

In analyzing the results of the tests we saw an average BUN of 69.98±5.02, the lowest BUN was 12 and the highest was 240. The highest average creatinine and creatinine 101.02±1.29 and the lowest was 0.1.With a mean range of 8.53±4.1, the lowest hemoglobin levels in tests HB was 2 and the highest was 22.

Ambulances were seen performed in 258 patients (80%) had gastrointestinal problems UPPER and 66 patients (20%) had problems LOWER.

Ambulances relationship between the gender of the patients and the results were not statistically significant (P =0.149). There is not also a significant relationship between race and endoscopy results (P=0.203). Endoscopy results and outcomes of patients there is a significant relationship (P = 0.001). The 258 patients who had upper digestive system problems, 221 of them (85.7%) were hospitalized, 36 (14%) were admitted in ICU and 1 (0.4%) died.

Statistical analysis of the results showed that endoscopy and smoking is not significant (P = 0.658), the results of endoscopy and PUD with (P = 0.298), the results of endoscopy and taking ASA with (P = 0.189), the results of endoscopy and taking NSAID with (P = 0.142), the results of endoscopy and taking PLAVIX with (P = 0.70), the results of endoscopy with H2 blocker consumption with (P = 0.734), and the results of endoscopy and taking Warfarin with (P = 0.311), there was no significant relationship but between PPI use and the results of endoscopic significant relationship was found (P = 0.028)

so that the 272 patients who had upper gastrointestinal problems, 240 (88.2%) PPI was used.

Ambulances Results showed that the relationship between gastrointestinal bleeding and was significant (P = 0.001), of 278 patients GIB, 233 patients (83.8%) UPPER affecting the digestive system and 45 people (16.2%) LOWER and from 272 patients Safth the upper gastrointestinal endoscopy which were related to the 233 system, they constituted 85.6%.

Table 1: first diagnosis at triage and patients outcomes

	n	Frequency
First diagnosis		
Hematemesis	102	30.0
GIB	98	28.8
Melena	110	32.4
rectorrhagia	23	6.8
Abdominal pain	5	1.5
distension abdominal	1	.3
Hematemesis& Melena	1	.3
Patients outcome		
Hospitalization at emergency unit	262	77.1
Hospitalation at other units	41	12.1
Death	21	6.2
Total	324	95.3

Table 2: GIB symptoms

Signs	n	Frequency
Melena	114	33.5
Hematemesis(coffee-ground)	32	9.4
Hematemesis (fresh-blood)	38	11.2
Hematochezia	20	5.9
Hematemesis (coffee-ground)& Melena	65	19.1
Hematemesis (fresh-blood) & Melena	51	15.0
Hematochezia& Melena	8	2.4
Hematemesis (coffee-ground) & Hematochezia	1	.3
Hematemesis (coffee-ground/ fresh blood) & Melena	2	.6
Total	332	97.6

In our statistical analysis, it was found between age and endoscopy findings there is a significant difference (P = 0.007), with increases in BUN and endoscopic findings (P = 0.001), the increase in CR and endoscopic findings (P = 0.001) and between cuts HB and endoscopic findings (P = 0.034) there is a significant relationship. The average gap between their business triage patients and 12.02±0.7 minutes. The minimum time between groups of patients who died, which is 7.8±1.6 minutes and the average distance between the endoscopy triage patients and 34.3±2.5 hours. 137 patients (40.3%) had a history of heart problems, but a history of heart problems between patients and the results of the upper or lower endoscopy of problems not found a significant relationship (P = 0.648) as well as 19 patients had kidney problems between history Ambulances results kidney problems and the relationship was not statistically significant (P = 0.337). The 120

patients (35.3%) had a history of diabetes, history of diabetes and the relationship between the results obtained by endoscopy were found (P = 0.648), but between endoscopic findings and a history of liver problems in 37 patients (10.9%) of our patients there was a significant relationship was found (P = 0.001). As well as between endoscopic findings and a history of chemotherapy in 15 patients (4.4%) of our patients there was a significant relationship was found (P = 0.007).

Table 3: Patients exam

	n	Frequency
Clinical signs of patients at the time of admission		
Abdominal pain	153	45%
Anorexia	13	3.8%
Dyspnea	8	2.3%
Nausea vomiting	24	7%
Lethargy	61	17.9%
Edema	6	1.7%
Weight loss	9	2.6%
Abdominal distention	12	3.5%
Dehydration	8	3.5%
Anal pain	2	0.05%
Seizure	9	2.6%
Dysphagia	22	6.4%
Consciousness	13	3.8%
Tenderness	90	76.3%
Hepatomegaly	4	3.4%
Ascites	13	11%
Tenderness & hepatomegaly	4	3.4%
Tenderness & ascites	5	4.2%
Hepatomegaly & ascites	2	1.7%
Total	118	100

Table 4: Results of ECG and radiology patients

	n	Frequency
Radiologic findings		
Gallstones	2	5.1
Hepatic steatosis	9	23.1
Pulmonary hyperinflation	2	5.1
normal	21	53.8
Liver Abscess	2	5.1
diaphragm hernia	1	2.6
Fluid level	1	2.6
Gallstones & Hepatic steatosis	1	2.6
Total	39	100.0
ECG findings		
Normal	100	
LBBB	15	7.7
LAHB	8	4.1
Inverted T	38	19.5
AF	23	11.8
Bradycardia	11	5.6

Table 5: Frequency of patients with GIB following endoscopic findings or with PPI

	Upper	Lower	Total
Endoscopic finding in patients with GIB	233(83.8%)	45(16.2%)	278(100%)
Endoscopy due to PPI consumption	240(81.9%)	53(18.1%)	293(100%)

Diagram 1: The endoscopic outcome of the site of the conflict
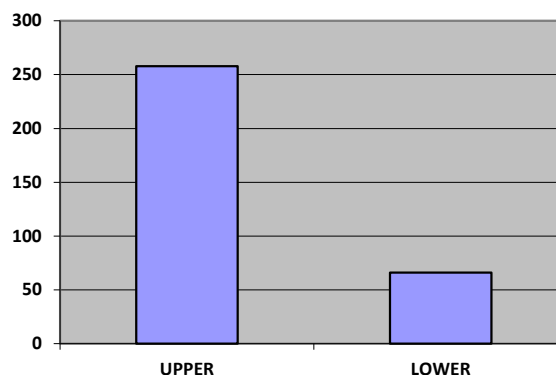
DISCUSSION

After examining the records and statistical analysis we found that of the 340 patients we studied, 206(60.6%) male and 134(39.4%) females between sex and the difference between the results of endoscopy in upper gastrointestinal or digestive problems lower GI relationship is not statistically significant (P=0.149). Analysis was conducted on the data showed that the average age of patients was 57.16±19.8 and the youngest patient was 9 years old and the oldest 114 years. The race was seen in 337 patients, 311 patients (91.5%) subjects were from Mazandaran province, which according to the area where the Hospital is located in the city of Sari, the result for us was predictable. and no statistically significant differences in lifestyle are different and there is no significant relationship (P=0.203). Eventually the patients in the emergency department saw 262 patients (77.1%) were hospitalized, and 41(12.1%) were hospitalized in ICU and 21 patients (6.2%) died in the emergency room that the mortality rate close to a study by Elwakil et al. (22) As well as their mortality, respectively, 4.3% and 1.5% in both groups, but the study was carried out by Suba and colleagues (23) at discharge mortality rate was 17% which is close to our study. In this study, Rotondano and colleagues (20) were both 4.5% mortality rate for patients with this rate of mortality in patients presenting to the emergency department. As we near their patients for signs of GIB found that 114 (33.5%) only Melena they had, 32 (9.4%) had Hematemesis of coffee-ground and 38 patients (11.2%) were fresh-blood Hematemesis hematocheziain 20 patients (5.9%) patients. Melena and hematemesis (coffee-ground) together in 65 patients (19.1%) and melena and hematemesis (fresh-blood) and in 51 patients (15%) was observed. Melena and hematochezia in 8 patients (2.4%), hematemesis (coffee-ground) and hematochezia in one patient (0.3%) were observed, melena and hematemesis (coffee-ground) and hematemesis (fresh-blood) in 2 patients (0.6 %) was seen in a study that was conducted by Elwakil and colleagues

showed that 19.4% of patients with gastrointestinal bleeding, vascular and non-vascular gastrointestinal bleeding was 6.1% as we review the analysis was not done. .Out of 98 patients in our primary diagnosis, 278 patients in the final diagnosis of GIB in the endoscope came to the conclusion that, of course, some of our patients had gastrointestinal bleeding during the admission period and 233 of the 258 GI tract sufferers Of these, they had gastrointestinal bleeding, and 66 of the patients with LOWER digestive problems were 33 patients with GIB.They found that endoscopic results and outcomes of patients, there is a significant relationship (P = 0.001). The 258 patients who had upper digestive system problems, 221 of them (85.7%) were hospitalized, 36 patients (14%) were hospitalized in ICU and 1 (0.4%) died, the percent indicates the importance of endoscopy in patients and help determine the sooner the better, because most patients after endoscopy in patients, However 14% of the patients were hospitalized and were transferred to the ICU. Ambulances Results showed that the relationship between gastrointestinal bleeding and was significantly (P = 0.001), of 278 patients GIB, 233 patients (83.8%) UPPER affecting the digestive system and 45 people (16.2%) LOWER and from 272 patients upper gastrointestinal endoscopy findings were that the system of the 233, which constituted 85.6% of them, In a study conducted by Cavallaro and colleagues (19) 52.9% of cases due to upper gastrointestinal bleeding that was a huge difference with our study.

In the statistical analysis showed a significant relationship between the use of PPI and endoscopy results were found (P = 0.028) so that the 272 patients who had upper gastrointestinal problems, 240 (88.2%) PPI was used to confirm the integrity because the study was the fact that people who suffer from peptic ulcers are mostly PPI use and are more prone to bleeding. In our statistical analysis was found between age and endoscopy findings (P = 0.007), with increases in BUN and endoscopic findings (P = 0.001), the increase in CR and endoscopic findings (P = 0.001) and between cuts HB and endoscopic findings (P = 0.034) there is a significant relationship.

The study found that the average distance between their business triage patients and 12.02±0.7 minutes. The minimum time between groups of patients who died in the 7.8±1.6 minutes and the average distance between the triage patients and their endoscopy 34.3±2.5 hours.

In other studies, the findings could not find a similar comparison that shows at least some of the parameters of this study, are investigated for the first time in Iran. And should continue on this information and studies on this area to be enough time and money.

Also they founded that 137 patients (40.3%) had a history of heart problems, but a history of heart problems between patients and the results of the upper or lower endoscopy of problems not found a significant relationship (P = 0.648) as well as 19 patient problems had a history of kidney problems and renal between Ambulances results There was no significant relationship (P = 0.337). The 120 patients (35.3%) had a history of diabetes, history of diabetes and the relationship between the results obtained by endoscopy were found (P = 0.648), but between endoscopic findings and a history of liver problems in 37 patients (10.9%) of our patients there was a significant relationship was found (P = 0.001). As well as between endoscopic findings and a history of chemotherapy in 15 patients (4.4%) of our patients there was a significant relationship was found (P = 0.007). After examining the records and statistical analysis saw the difference between the gender of patients and endoscopic findings in the upper gastrointestinal or lower gastrointestinal tract digestive problems, there is no significant relationship (P = 0.149). The mean age of patients was 19.8 ± 57.16 youngest patient was 9 years old and the oldest 114 years. Between age and endoscopy findings (P = 0.007), there was a significant relationship. There is no significant relationship between race and digestive problems (P = 0.203). Of our patients, 262 patients (77.1%) were hospitalized, and 41 (12.1%) were hospitalized in ICU and 21 patients (6.2%) died in the emergency room .by endoscopy results and outcomes of patients there is a significant relationship (P = 0.001). Endoscopy results and outcomes of patients there is a significant relationship (P = 0.001). Between PPI use and the results of endoscopic significant relationship was found (P = 0.028) between gastrointestinal haemorrhage and endoscopic results obtained also showed a significant relationship (P = 0.001), Of 278 patients GIB, 233 patients (83.8%) UPPER affecting the digestive system and 45 people (16.2%) LOWER findings from 272 patients who had endoscopy of the upper digestive system of the 233 people, who make up 85.6% of them the mean distance between the triage patients and their business was 12.02±0.7 minutes and the mean distance between the endoscopy triage patients and 34.3±2.5 hours.

REFERENCES

1. Kim J, Kim YH, Lee KH, Lee YJ, Park JH. Diagnostic performance of CT angiography in patients visiting emergency department with overt gastrointestinal bleeding. Korean journal of radiology. 2015;16(3):541-9.
2. Van Leerdam M, Vreeburg E, Rauws E, Geraedts A, Tijssen J, Reitsma J, et al. Acute upper GI bleeding: did anything change&quest. The American journal of gastroenterology. 2003;98(7):1494-9.
3. van Erp RJ, Schröppel B, Barth TF, Seufferlein T, Schmidt SA, Meining A, et al. A rare cause of upper GI bleeding and wasting disease. Gut. 2015:gutjnl-2015-310404.
4. Wubiee FM, Tesfaye BA, Kibreab A, Howell CD. 413 Comparison of In-Hospital Mortality of Conservative Versus Surgical Management of Peptic Ulcer Perforation in US Hospitals. Is Conservative Management Deadly? Gastroenterology. 2015;148(4):S-89.
5. Yamada T, Toda N, Kawamura S, Hayata Y, Karasawa Y, Yamagami M, et al. Sa1478 Impact of Hemodialysis on Peptic Ulcer Bleeding-Study to Identify Risk Factors for Peptic Ulcer Rebleeding and Mortality. Gastrointestinal Endoscopy. 2015;81(5):AB231.
6. Levenstein S, Rosenstock S, Jacobsen RK, Jorgensen T. Psychological stress increases risk for peptic ulcer, regardless of Helicobacter pylori infection or use of nonsteroidal anti-inflammatory drugs. Clinical Gastroenterology and Hepatology. 2015;13(3):498-506. e1.
7. Lee S, Ahn JY, Jung H-Y, Lee JH, Jung KW, Choi K-S, et al. Sa1503 Effective Endoscopic Treatment of Mallory-Weiss Tear Using Glasgow-Blatchford Score and Forrest Classification. Gastrointestinal Endoscopy. 2015;81(5):AB241.

8. Okada M, Ishimura N, Shimura S, Mikami H, Okimoto E, Aimi M, et al. Circumferential distribution and location of Mallory-Weiss tears: recent trends. Endoscopy international open. 2015;3(5):E418.

9. Iijima K, Koike T, Ara N, Nakagawa K, Kondo Y, Uno K, et al. Identification of a high-risk group for low-dose aspirin-induced gastropathy by measuring serum pepsinogen in H. pylori-infected subjects. Journal of gastroenterology. 2015;50(3):305-12.

10. Han S, Chaudhary N, Wassef W. Portal hypertensive gastropathy and gastric antral vascular ectasia. Current opinion in gastroenterology. 2015;31(6):506-12.

11. Zakko L, Rustagi T, Douglas M, Laine L. Tu1361 Platelet Transfusion for Acute GI Bleeding in Patients Taking Antiplatelet Agents: Is There Benefit or Harm? Gastroenterology. 2016;150(4):S883-S4.

12. Mönkemüller K, Wilcox CM, Peter S. Hemostasis of Acute Small Intestinal Bleeding. GI Endoscopic Emergencies: Springer; 2016. p. 195-205.

13. Camus M, Jensen DM, Ohning GV, Kovacs TO, Jutabha R, Ghassemi KA, et al. Comparison of Three Risk Scores to Predict Outcomes of Severe Lower Gastrointestinal Bleeding. Journal of clinical gastroenterology. 2016;50(1):52-8.

14. Dokoshi T, Fujiya M, Tanaka K, Sakatani A, Inaba Y, Ueno N, et al. A Randomized Study on the Effectiveness of Prophylactic Clipping during Endoscopic Resection of Colon Polyps for the Prevention of Delayed Bleeding. BioMed research international. 2015;2015.

15. Hall JE. Guyton and Hall textbook of medical physiology: Elsevier Health Sciences; 2015.

16. Tomizawa M, Shinozaki F, Hasegawa R, Shirai Y, Motoyoshi Y, Sugiyama T, et al. Laboratory test variables useful for distinguishing upper from lower gastrointestinal bleeding. World journal of gastroenterology: WJG. 2015;21(20):6246.

17. Bhat P, Dretler A, Gdowski M, Ramgopal R, Williams D. The Washington manual of medical therapeutics: Lippincott Williams & Wilkins; 2016.

18. Sengupta N, Tapper EB, Patwardhan VR, Ketwaroo GA, Thaker AM, Leffler DA, et al., editors. Risk factors for adverse outcomes in patients hospitalized with lower gastrointestinal bleeding. Mayo Clinic Proceedings; 2015: Elsevier.

19. Cavallaro LG, Monica F, Germanà B, Marin R, Sturniolo GC, Saia M. Time trends and outcome of gastrointestinal bleeding in the Veneto region: a retrospective population based study from 2001 to 2010. Digestive and Liver Disease. 2014;46(4):313-7.

20. Rotondano G, Cipolletta L, Koch M, Bianco MA, Grossi E, Marmo R. Predictors of favourable outcome in non-variceal upper gastrointestinal bleeding: implications for early discharge? Digestive and Liver Disease. 2014;46(3):231-6.

21. Shrestha UK, Sapkota S. Etiology and adverse outcome predictors of upper gastrointestinal bleeding in 589 patients in Nepal. Digestive diseases and sciences. 2014;59(4):814-22.

22. Elwakil R, Reda M, Abdelhakam S, Ghoraba D, Ibrahim W. Causes and outcome of upper gastrointestinal bleeding in Emergency Endoscopy Unit of Ain Shams University Hospital. Journal of the Egyptian Society of Parasitology. 2011;41(2):455-67.

23. Suba MR, Ayana SM, Mtabho CM, Kibiki GS. The aetiology, management and clinical outcome of upper gastrointestinal bleeding among patients admitted at the Kilimanjaro Christian Medical Centre in Moshi, Tanzania. Tanzania journal of health research. 2010;12(4):286-9.