

Research Article

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Current comments on upper gastrointestinal system bleeding data from a research hospital

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Abstract

Upper gastrointestinal system (GIS) bleeding is one of the most common causes of hospitalization. This study aims to investigate the etiology of bleeding in patients admitted to Adana Numune Training and Research Hospital with the diagnosis of upper GIS bleeding. The study was conducted with 135 patients who applied for Upper GIS bleeding and underwent endoscopy between April and August 2005. This was a prospective study and all consecutive patients with upper GIS bleeding were included. Data were presented as 'n, (%)', 'mean \pm standard deviation'. Of the patients 65.2% (n=88) were male, and the mean age was 56.7. The most common presenting symptoms were melena 44%(n=60), hematemesis 33% (n=45) and hematemesis+melena 16.3%(n=22). The most common etiologies were duodenal ulcer (35%, n=48), gastric ulcer (17%, n=23) and acute mucosal lesion (11%, n=15). Hp+ cases were 62.2% (n=84). Smoking was 28.1%(n=38), alcohol use was 13.3%(n=18). Of the patients 33% (n=45) had a history of previous Upper (GIS) bleeding, 52% (n=70) had ulcer-dyspepsia and 43% (n=58) had a history of NSAID use. Acetyl salicylic acid (ASA) was most commonly used as NSAID in 68.9%(n=40), flurbiprofen sodium in 39.6%(n=23), diclofenac in 29.3% (n=17) and multiple drugs in 39.6%(n=23). The reasons for taking ASA were cardiovascular protection in 55%(n=22). The use of NSAID's accompanies upper GIS bleeding with ASA use is the most common. When using these drugs, their effects on upper GI bleeding should be taken into consideration.

Keywords: nonsteroidal anti-inflammatory drug, acetylsalicylic acid, upper gastrointestinal system (gis) bleeding, COVID-19

1. Introduction

Upper gastrointestinal system (GIS) bleeding occurs in the GI tract above the Treitz ligament with the frequency of approximately 100/100,000 cases. It accounts for approximately 1% of hospitalizations (1). It has a high morbidity and mortality with mortality rates being 2-10% and it's an important cause of emergency hospitalization. Causes of GI bleeding include peptic ulcer disease, anticoagulant and anti-inflammatory drug use, cancers, gastrointestinal malformations and varicose veins caused by cirrhosis. Smoking and alcohol use, H. Pylori infection increase the risk of ulcers, cancer and bleeding. Peptic ulcer is usually caused by mucosal breakdown. Mucosal breakdown can occur due to various reasons acid, pepsin, bile, infection, drugs etc. infection with H pylori causes mucosal inflammation and injury. NSAIDs blocks cyclooxygenase-1 (COX-1) pathway. Hence inhibits prostaglandin synthesis which is important for maintaining mucosal barrier. Anticoagulants worsen bleeding by inhibiting clotting (1,2).

The color of the blood and its appearance provide important clues about the location, amount, duration and severity of bleeding. Melena is black, runny and strong-smelling stool mostly (90%) originating from the upper gastrointestinal tract. Its color is the result of the breakdown of blood by digestive fluids. Rarely, in cases where the passage time from the

intestine is prolonged, it may originate from the small intestine or the right colon. If a person vomits black blood, it is melenamesis and indicates that hydrochloric acid has interacted with the blood. Hematemesis can be described as vomiting blood and should not be confused with hemoptysis. Red blood coming from the rectum indicates that the bleeding is from the lower GI tract. In the clinic, GI tract bleeding can be seen with symptoms of hypotension, orthostatic hypotension, tachycardia, confusion, dizziness, cold and clammy extremities, angina pectoris and palpitations. Severe symptoms may indicate excessive bleeding and deterioration of hemodynamics (2,3).

2. Materials and Methods

2.1. Study Design

This study was conducted with all patients who applied to the Gastroenterology Clinic of Adana Numune Research Hospital due to upper GIS bleeding and underwent endoscopy between April and August 2005. This study was a prospective study and all consecutive patients with upper GIS bleeding were included. Inclusion criteria were consecutive applications with GIS bleeding, etiologies determined by endoscopic intervention and voluntary participation in the study. Exclusion criteria were being under 18 years of age and patients who could not undergo endoscopy for various reasons.

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Panendoscopy was performed on the patients within an average of 12 hours (range, 1-48 hours) from the time of admission, and *Helicobacter pylori* was tested with a urease test in the biopsy sample in those without active bleeding, and with antigen in the stool or antibody in the blood in those with active bleeding.

2.2. Statistical analyses

Data were analyzed with SPSS 13.0 version PC for Windows (SPSS Inc, Chicago, IL) and shown as 'n, (%)', 'mean \pm standard deviation'. In addition to the demographic data of the patients, the application symptoms, nonsteroidal anti-inflammatory drug and other drug use, ulcer-dyspepsia and previous bleeding history, comorbidities, smoking and alcohol use data were examined.

3. Results

Of the patients (n=135) 65.2% (n=88) were male, 34.8% (n=47) were female, and the mean age was 56.7 ± 15.2 (22-95). While 80% of the bleeding occurred at the age of 40-80, the most frequent bleeding was seen in the age group of 50-59. The most frequent presenting symptoms were melena 44% (n=60), hematemesis 33% (n=45) and hematemesis+melena 16.3% (n=22). The most frequent etiology was duodenal ulcer 35% (n=48), gastric ulcer 17% (n=23) and acute mucosal lesion 11% (n=15). Of the cases 62.2% were Hp+ (n=84), 37.8% Hp(-) (n=51). The mean hospital stay was 4.1 days. Of the patients 92.6% (n=125) were followed up with medical and endoscopic treatment, 5.2% (n=7) were referred to other centers for various reasons and 2.2% (n=3) died. Smoking was 28.1% (n=38), alcohol use was 13.3% (n=18). Of the patients 33% (n=45) had a history of previous Upper gastrointestinal system (GIS) bleeding, 52% (n=70) had ulcer-dyspepsia, 43% (n=58) had a history of NSAID use. Acetylsalicylic acid was 68.9% (n=40), flurbiprofen sodium was 39.6% (n=23), diclofenac was 29.3% (n=17) and polypharmacy was 39.6% (n=23). Reasons for taking aspirin were cardiovascular protection in 55% (n=22) and pain in 47.5% (n=19). Of the patients 16.2% (approximately 1/6) with Upper gastrointestinal system (GIS) bleeding were using aspirin for cardiovascular protection. Comorbidities included hypertension in 21.5% (n=29), diabetes in 14.1% (n=19), coronary heart disease in 8.1% (n=11), heart failure in 4.4% (n=6), and renal failure in 4.4% (n=6) (4).

4. Discussion

This study is one of the rare GIS bleeding studies in which family medicine has been involved by conducting research. At first glance, it may not seem directly related to the primary care. However, the most commonly prescribed drugs in family medicine are ASA and NSAIDs. A family physician who knows his patient and risk factors well can take precautions against the risk of GI bleeding and give prophylaxis.

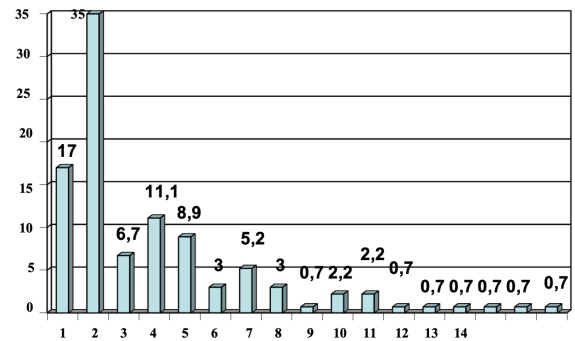


Fig. 1. Endoscopic Findings in Upper GIS Bleeding (%) 1. Gastric Ulcer (GU) 17% (n=23) 2. Duodenal Ulcer (DU) 35% (n=48) 3. Gastritis 6.7% (n=9) 4. Acute Mucosal Lesion 11% (n=15) 5. Varicose vein 8.9% (n=12) 6. Malignancy 3% (n=4) 7. Other 5.2% (n=7) 8. GU+DU 3% (n=4) 9. GU+Varicose vein 0.7% (n=1) 10. GU+Other 2.22% (n=3) 11. GU+Gastritis 2.22% (n=3) 12. GU+Acute Mucosal lesion 0.7% (n=1) 13. GU+Varicose 0.7% (n=1) 14. GU+Other 0.7% (n=1)

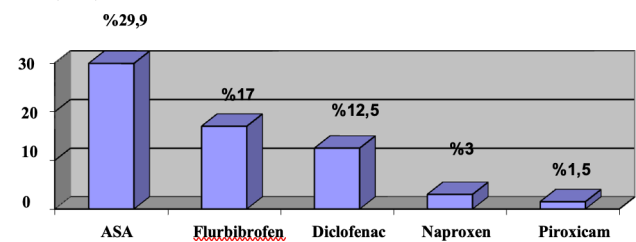


Fig. 2. NSAIDs used by patients with upper GI bleeding

In the literature, the most common cause of bleeding is duodenal ulcer (5) and our data is consistent with the literature. Tiellemann et al. reported the use of anticoagulants and NSAIDs as important risk factors for GIS bleeding (6). It is consistent with our data. Coleman et al. reported that ASA is most commonly prescribed for cardiovascular protection and that ASA increases the risk of GIS bleeding by 37% (7). In our study, 29.8% of our patients used ASA.

In short, nonsteroidal anti-inflammatory drug use accompanied bleeding at a significant rate in this study as it is the case all over the world. The most common nonsteroidal anti-inflammatory drugs in Upper gastrointestinal system (GIS) bleeding is ASA. In addition, the use of heparin, warfarin and other anticoagulants increases the risk (8).

Although it is not a direct result of the research, we find it necessary to address a topic in the discussion. In the chaos that occurred during the COVID-19 pandemic, drugs associated with GI bleeding were used freely. Seeing this, based on this research, we emphasized the risks of this behavior at an international meeting before most articles in the literature (Causes of Acute Upper gastrointestinal system (GIS) bleeding and the Role of NSAIDs in the Light of Recent Corona Epidemic, 6th IMedHSC 27 - 29 DECEMBER 2020, Paris).

In 2023, a systemic review examining GI bleeding in COVID-19 patients included drugs such as Warfarin, NSAIDs, aspirin and corticosteroids at the top of the risk factors in line with our findings (9). The mechanism proposed for the relationship between GIS bleeding and COVID-19 was that the virus enters easier through ACE-2 receptors, which are abundant in gastrointestinal tract tissues, and may cause bleeding (10-11). In one study, the prevalence of GIS bleeding in COVID-19 patients was given as 3% (12). During COVID, not only NSAIDs and other anticoagulants, but also other drugs that disrupt the integrity of the duodenum and stomach and thus increase the risk of GIS bleeding have been used to increase survival. Examples include colchicine (13), which was used in the first months of the pandemic, Tocilizumab (14), which reduces the systemic inflammatory response by inhibiting IL-6, and dexamethasone (15).

In addition to the increased use of drugs that increase the risk of GIS bleeding in life-threatening infections such as COVID-19, diagnostic and therapeutic interventions such as endoscopy, are also decreased leading to decreasing survival (16).

The limitations of this study include the short data collection period and the fact that the study was not conducted during the pandemic. Therefore, since the data is from 2005 there is no direct correlation with COVID-19. However, there are important lessons to be learned. This includes adopting a calmer disease management with a multidisciplinary approach in the next possible pandemic according to the guidelines (17).

Rational use of nonsteroidal anti-inflammatory drugs, providing preventive treatment in the gastrointestinal system in line with guidelines for risky patients, and eradicating Hp will reduce bleeding in the upper gastrointestinal system. It is clear that this will make significant contributions to the patient management and the country's economy.

Conflict of interest

The authors declared no conflict of interest.

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None to declare.

Authors' contributions

Concept: M.Ü., S.S., Design: M.Ü., S.S., Data Collection or Processing: M.Ü., S.S., Analysis or Interpretation: M.Ü., S.S., Literature Search: M.Ü., S.S., Writing: M.Ü., S.S.

Ethical Statement

This study is not required ethics approval.

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