

## Assessment of the Causes and Endoscopic Findings in Patients Presented with Upper Gastrointestinal Bleeding: A Single Center Experience

Abdulaziz Saad Alshahrani, MD\* Abdullah I Aedh, MD\*\* Rakan Hamad alwadai, MBBS\*\*\* Waleed Mohammed Alshehri, MBBS\*\*\* Abdullah Ahmad Sahib, MBBS\*\*\* Saeed Dawas Alwadai, MBBS\*\*\* Yasser Ali Almurdhimah, MBBS\*\*\* Ahmad Adly Bakheet, MBBS\*\*\* Mohammed Attieh Alzahrani, MD\*\*\*\*

### ABSTRACT

**Background:** Upper gastrointestinal bleeding (UGIB) is among the most typical life-threatening conditions that may require hospitalization and resuscitation associated with considerable morbidity and mortality association. Now, the recommended investigation for active UGIB is emergency esophagogastroduodenoscopy (EGD) as it had a role in diagnosis and treatment of UGIB.

**Aim:** The study aimed to assess the causes and endoscopic findings in patients presenting with UGIB at King Khalid Hospital (KKH), Najran city, Saudi Arabia.

**Methodology:** A retrospective record based observational study that was conducted between March 2017- March 2021 at KKH, Najran, KSA, from an electronic endoscopic reporting database. Data of all patients who were suspected of UGIB and had an endoscopy procedure were included. Extracted data include patients' demographic data, medical history, drug history, clinical presentation of UGIB, and their endoscopic findings including PUD, PHD, and any other relevant findings.

**Results:** A total of 308 patients fulfilling the inclusion criteria were included. Exact of 186 (60.4%) patients aged less than 65 years while 122 (39.6%) aged more than 65 years. A total of 207 (67.2%) patients were males. History of Previous episode of UGIB was reported among 63 (20.5%) patients and 48 (15.6%) had history of liver diseases. The most reported clinical presentation was hematemesis (56.2%; 173), followed by melena (27.3%; 84), both of them (11.7%; 36). The most reported findings were gastritis (52.6%; 162), gastric ulcers (17.9%; 55), Esophagitis (15.6%; 48), gastric and duodenal ulcers (12.7%; 39), Esophageal varices (12%; 37).

**Conclusions:** In conclusion, the current study showed that UGIB was more among young aged patients and males. NSAIDs was among the most frequent factors associated with UGIB. More than half of the cases were presented with hematemesis and melena. Gastric lesions were the most diagnosed using endoscopy especially gastritis and gastric ulcers.

**Keywords:** Upper GIT, Bleeding, Risk factors, Clinical presentation, Endoscopy, Causes, Findings, Saudi Arabia

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- \* Associate Professor  
Internal Medicine Department  
Gastroenterology Consultant  
College of Medicine  
Najran University  
Najran, Saudi Arabia.
- \*\* Associate Professor  
Internal Medicine Department  
Medicine and Critical Care Consultant  
College of Medicine  
Najran university  
Najran, Saudi Arabia.
- \*\*\* Medical Student  
College of Medicine  
Najran University  
Saudi Arabia.
- \*\*\*\* Associate Professor  
Department of Medicine  
Gastroenterology Consultant  
College of Medicine  
King Khalid University  
Abha, Saudi Arabia.  
E-mail: dr\_modaz@hotmail.com; malzahrani@kku.edu.sa

## INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is featured by bleeding resulting from a source proximal to the ligament of Treitz, which one of the most reported hazardous conditions that needs rapid intervention as admission and resuscitation<sup>1</sup>. Bleeding from the upper GI tract is nearly four times more frequent than lower GI tract bleeding with associated increased morbidity and overall mortality rate of 10%. Early diagnosis and treatment significantly decrease hospitalization rates and costs of treating UGIB<sup>2-5</sup>.

Now, the recommended investigation for active UGIB is emergency esophagogastroduodenoscopy (EGD) as it had a role in diagnosis and treatment of UGIB. The incidence of UGIB is around 100 cases per 100,000 population per year, with the highest reported cases are in men with higher incidence among age above 60 years. Though, the death rate is similar in both sexes<sup>6-8</sup>.

Mortality rate associated with gastrointestinal bleeding frequently are affected by other co-morbidities rather than the bleeding in spite of all significant recent developments in therapeutic endoscopy<sup>9</sup>. Hematemesis is the main presentation of UGIB (40%-50%) with melena (70%-80%), and sometimes both. The less common presentation for UGIB is haematochezia (about 15%). Also, to the initial presentation, blood loss symptoms, such as pallor, tachycardia, syncopal episodes, fatigue, and weakness, can be present<sup>10-12</sup>.

UGIB has been classified into variceal and non-variceal bleeding with high variability according to geographic area<sup>13</sup>. The most common causes of UGIB are peptic ulcer disease (PUD) (50%), gastritis, gastric erosion, which are commonly associated with *Helicobacter pylori* infection, and the use of non-steroidal anti-inflammatory drugs (NSAIDs). Saudi Arabia is an endemic area for chronic hepatitis B, chronic hepatitis C, and bilharzial liver disease, which leads to portal hypertension diseases (PHD.), resulting in high rates of variceal bleeding<sup>14,15</sup>. Due to a lack of data in our region, this study will be designed to identify the most typical findings of UGIB among patients residing in Najran city, Saudi Arabia.

## METHODOLOGY

A retrospective record based observational study that was conducted between March 2017- March 2021 at KKH, Najran, KSA, from an electronic endoscopic reporting database. King Khalid Hospital is located in the south of Saudi Arabia in the Najran city at Al-Khalidiya on the King Abdulaziz Road. It is considered a secondary hospital and a reference hospital for the governorates and villages of Najran city, including an Endoscopy unit. All upper endoscopy reports during this period were reviewed. Data of all patients who were suspected of UGIB and had an endoscopy procedure were included. The histopathology reports were assessed, and the causes and most common findings were identified. Data extraction was done using pre-structured data extraction sheet to avoid inter-rater bias. Patients aged 18 years or more who were suspected of UGIB and had an endoscopy procedure were included. Patients with records that have deficiencies in some documented information were excluded. Extracted data include patients' demographic data, medical history, drug history, clinical presentation of UGIB, and their endoscopic findings including PUD, PHD, and any other relevant findings.

**Data Analysis:** After data were extracted, it was revised, coded, and fed to statistical software IBM SPSS version 22(SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed tests. P value less than 0.05 was statistically significant. Descriptive analysis based on frequency and percent distribution was done for all variables including patient's bio-demographic data, clinical presentation, and endoscopic

findings reported at stomach, oesophagus, duodenum, with other related clinical findings.

## RESULTS

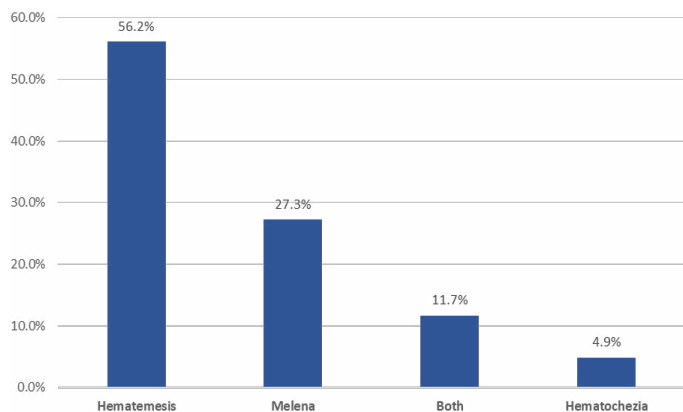
A total of 308 patients fulfilling the inclusion criteria were included. Exact of 186 (60.4%) patients aged less than 65 years while 122 (39.6%) aged more than 65 years. A total of 207 (67.2%) patients were males. History of Previous episode of UGIB was reported among 63 (20.5%) patients and 48 (15.6%) had history of liver diseases. Considering other co-morbidities, DM was the most reported (18.5%; 57), followed by HTN (16.6%; 51), and chronic kidney diseases (4.9; 15). As for drug history, NSAIDs were taken by 178 (57.8%) patients while 37 (12%) had steroids, 30 (9.7%) were on Anticoagulant and 27 (8.8%) received SSRI. A total of 62 (20.1%) patients were smokers, only 3 (1%) had alcohol and 11 (3.6%) were on both (Table 1).

**Table 1:** Bio-demographic data of patients presented with upper gastrointestinal bleeding in Najran region

Bio-demographic data	No	%
Age in years		
< 65	186	60.4%
≥ 65	122	39.6%
Gender		
Male	207	67.2%
Female	101	32.8%
History of Previous episode of UGIB		
Yes	63	20.5%
No	245	79.5%
History of liver diseases		
Yes	48	15.6%
No	260	84.4%
Other co-morbidities		
Non	227	73.7%
DM	57	18.5%
HTN	51	16.6%
CKD	15	4.9%
Drug history		
None	97	31.5%
NSAIDs	178	57.8%
Steroids	37	12.0%
Anticoagulant	30	9.7%
SSRI	27	8.8%
Social history		
None	232	75.3%
Smoking	62	20.1%
Alcohol	3	1.0%
Both	11	3.6%

Figure 1, Clinical presentation of patients presented with upper gastrointestinal bleeding in Najran region. The most reported clinical presentation was hematemesis (56.2%; 173), followed by melena (27.3%; 84), both of them (11.7%; 36), and haematochezia (4.9%; 15).

Table 2, Endoscopic findings among patients presented with upper gastrointestinal bleeding in Najran region. The most reported findings were gastritis (52.6%; 162), gastric ulcers (17.9%; 55), Esophagitis (15.6%; 48), gastric and duodenal ulcers (12.7%; 39), Esophageal varices (12%; 37), And duodenal ulcers (8.4%; 26). Other findings including Esophageal Ulcer (6.8%), gastric mass (4.9%), and Portal hypertensive gastropathy (3.2%) were also reported.



**Figure 1:** Clinical presentation of patients presented with upper gastrointestinal bleeding in Najran region

**Table 2:** Endoscopic findings among patients presented with upper gastrointestinal bleeding in Najran region

Endoscopic findings	No	%
GU vs DU		
None	188	61.0%
Gastric Ulcer	55	17.9%
Duodenal Ulcer	26	8.4%
Both	39	12.7%
Esophageal Ulcer		
Yes	21	6.8%
No	287	93.2%
Gastritis		
Yes	162	52.6%
No	146	47.4%
Esophagitis		
Yes	48	15.6%
No	260	84.4%
Portal hypertension diseases		
None	257	83.4%
Esophageal varices	37	12.0%
Gastric varices	4	1.3%
Portal hypertensive gastropathy	10	3.2%
Other Findings		
None	277	89.9%
Mallory Weiss Syndrome	9	2.9%
Esophageal Mass	3	1.0%
Gastric Mass	15	4.9%
Gastric vascular telangiectasia	4	1.3%

## DISCUSSION

Upper GI bleeding is a communal emergency with high mortality that needs hospitalization. The incidence of UGI bleeding ranged from 50- 150 hospital admission per 100000 population in a year<sup>16,17</sup>. About 40- 65% of causes of UGI bleeding due to non-variceal GI bleeding like peptic ulcer, esophagitis and others<sup>18,19</sup>. Upper gastrointestinal endoscopy is the favoured diagnostic technique for UGIB with high accuracy, minimal complication, and its potential for therapeutic interferences<sup>20,21</sup>. The current study aimed to assess the endoscopic findings in patients with upper gastrointestinal bleeding at KKH, Najran city, Saudi Arabia, to determine the most common findings and causes. Also, nearly one fifth of the patients had previous history of UGIB while less than one fifth of them complained of liver diseases. More than half of the patients were on NSAIDs while few of them were

on steroids. These risk factors were also reported by many other studies especially NSAIDs<sup>22-24</sup>.

The study found that, majority of the patients presented with UGIB aged less than 65 years (two thirds) and were males. Alema O. N et al.<sup>25</sup> found that the mean age of the patients who had UGIB was 42.9 years  $\pm$  SD 15.9 and other similar findings were in studies reported in Africa<sup>26,27</sup>. In the developed countries, older ages for UGIB cases were reported which may be due to the generally older population of the west. The reported male to female ratio of patients complaining of UGIB was nearly similar to what was reported in other studies<sup>28,29</sup>.

Hematemesis was the most frequent clinical presentation among the study participants which was among more than half of the cases followed by melena (among nearly one third of the cases) and haematochezia which was infrequent. These findings are concordant with what known in the literature for clinical presentation of cases with GIT bleeding<sup>30,32</sup>.

Considering endoscopic findings, more than half of the patients had gastritis (52.6), which is the dominant finding with gastric ulcers (17.9%), while few cases had gastric mass and Portal hypertensive gastropathy. Esophageal findings were esophagitis (15.6%), Esophageal varices (12%), And Esophageal Ulcer (6.8%). Considering duodenal ulcers were reported among less than 10% of the study cases. Alema O. N et al.<sup>25</sup> found that the most frequent cause of UGIB was Esophageal varices (40.6%), followed by esophagitis (14.7%), gastritis (12.6%) and peptic ulcer disease (6.2%). The malignant conditions diagnosed among 2.6%. Worldwide, peptic ulcer disease is known as the most common cause of UGIB mainly in the western countries<sup>33,34</sup>. In developing world, Esophageal varices was the commonest cause of UGIB especially in the African countries which have reported Esophageal varices as the major cause of UGIB<sup>27,35,36</sup>. In Saudi Arabia, similar findings were reported by Al-Mofarreh M et al.<sup>37</sup> who reported that (male to female ratio among cases with UGI bleeding in Riyadh was 2:1. Numerous disorders were detected in 83% of patients, accenting the need to anticipate more than one lesion at endoscopy in a patient with UGI bleeding. About 8.9% gave a history of drug ingestion prior to the episode of bleeding; gastric and duodenal erosions were the most common lesions in these patients. Ahmed ME et al.<sup>38</sup> in Southern region found that the patients' mean age was 44.3 years. The most frequent causes were oesophageal varices (30%), gastritis and erosions (25%) and duodenal ulcers (22%); gastric ulcers and tumours were infrequent. Liver cirrhosis was the leading cause of bleeding oesophageal varices. Sibiany AR et al.<sup>39</sup> assessed presentation and endoscopic Findings of Emergency Upper Gastrointestinal Bleeding: A Seven-Year Experience at King Abdulaziz University Hospital. Authors found that 76.5% of the patients were males. Most patients (82.6%) had hematemesis, while 14.5% had melena; the remaining had both. Bleeding Esophageal varies was the most common cause (37.6%), followed by peptic ulcer disease (23.7%) and gastritis (11.3%). Portal hypertension was found to be a major risk factor as Saudi Arabia is endemic for chronic Hepatitis B and C, with a high prevalence of intestinal schistosomiasis.

## CONCLUSIONS AND RECOMMENDATIONS

**In conclusion, the current study showed that UGIB was more among young aged patients and males. NSAIDs was among the most frequent factors associated with UGIB. More than half of the cases were presented with hematemesis and melena. Gastric lesions were the most diagnosed using endoscopy especially gastritis and gastric ulcers. Oesophageal lesions were much less frequent than gastric lesions among the study patients. More large-scale studies are**

**recommended with more comprehensive focus on all epidemiological and pathological assessment of UGIB in Najran region.**

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**Competing Interest:** None

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