

## **Presentation and Endoscopic Findings of Emergency Upper Gastrointestinal Bleeding: A Seven-Year Experience at King Abdulaziz University Hospital, Jeddah, Saudi Arabia**

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*Abstract.* Emergency upper gastrointestinal bleeding is a major cause of morbidity and mortality. Internationally, the three most common causes are peptic ulcer disease, erosive gastritis and esophageal varices. This is a seven-year retrospective analysis of the presentations and endoscopic diagnoses of patients admitted to King Abdulaziz University Hospital with emergency upper gastrointestinal bleeding. A total of 1149 patients were included, the majority were males (76.5%). Most patients (82.6%) had hematemesis, while 14.5% had melena; the remaining had both. Bleeding esophageal varices 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. Emergency upper gastrointestinal endoscopy is effective for diagnostic and therapeutic purposes. Those findings were compatible with the results published by other local authors, although 61.4% of our patients were non-Saudis.

*Keywords:* Emergency upper gastrointestinal bleeding, Peptic ulcer, Esophageal varices, Hematemesis, Melena.

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## Introduction

Upper gastrointestinal bleeding (UGIB) is a major cause of mortality and morbidity. Despite all major recent advances in therapeutic endoscopy, it is still a cause of high morbidity with an overall mortality approaching 10%<sup>[1]</sup>. Its incidence is approximately 100 cases per 100,000 population per year<sup>[1,2]</sup>. It is more frequently reported in males than females<sup>[2]</sup>. The presence of co-morbid diseases increases mortality up to 73-76%<sup>[3-5]</sup>. Large-volume hospitals have a higher rate of admission of patients with UGIB. The most common causes of UGIB are peptic ulcer disease, gastritis, and variceal bleeding<sup>[1,5,6]</sup>. The causes of UGIB are variable among different geographical locations<sup>[5,6]</sup>. Saudi Arabia is an endemic area for chronic hepatitis B, chronic hepatitis C and bilharzial liver disease, which leads to portal hypertension resulting in high rates of variceal bleeding<sup>[6-8]</sup>. Severe co-morbid chronic illnesses in the aging population and the use of non-steroidal anti-inflammatory medications are important risk factors for peptic ulcer-related UGIB<sup>[3-5,9]</sup>. Other less-common causes include gastric or esophageal cancers, benign tumors, gastroesophageal reflux disease, angiodysplasia and post-endoscopic or post-operative complications<sup>[1,5-8]</sup>. The presenting symptoms include either hematemesis, melena or both<sup>[5,6,8,10,11]</sup>, but in some patients with severe UGIB, hematochezia might be the presenting symptom<sup>[11]</sup>. Emergency endoscopy is essential for patients with UGIB for both diagnostic and therapeutic purposes<sup>[10,12,13]</sup>. If immediate endoscopy is not possible due to patient's hemodynamic instability or other limitations, the immediate initiation of intravenous proton pump inhibitors for suspected peptic ulcers, and intravenous octreotide for suspected variceal bleeding is effective to stop UGIB in most cases<sup>[10,12-14]</sup>. The failure of both, medical and endoscopic treatment might suggest the need for transjugular intrahepatic portosystemic shunt (TIPS) or surgical intervention<sup>[12-14]</sup>.

This is a seven-year retrospective analysis of the presentation and endoscopic findings of EUGIB at King Abdulaziz University Hospital (KAUH).

## Methods

**Aim:** To identify the clinical presentations and causes of UGIB for patients undergoing emergency endoscopy at King Abdulaziz University Hospital, Jeddah.

**Design:** This is a retrospective descriptive study and is a seven-year analysis of all patients who underwent an emergency endoscopy for upper GI bleeding at KAUH. Demographic data were obtained for each patient, this included age, gender and nationality. The presentation at the time of bleeding (whether hematemesis, melena or both) was also recorded. The findings of the emergency endoscopy were also reported.

**Statistical method:** SPSS version 16 was used. Descriptive statistics were obtained, and the independent "t" test was used to compare the means.

## Results

A total of 1149 patients were included in the final analysis; 879 (76.5%) patients were males and 270 (23.5%) were females with a mean age of  $49.74 \pm 1$  year. The studied population was predominantly non-Saudi representing (61.4%) (Table 1).

**Table 1.** Nationalities and mean age of patients with emergency upper gastrointestinal bleeding.

Nationality	Frequency and Percent	Mean Age in Years and Standard Deviations
Saudi	444 (38.6%)	52.58 SD19.137
Yemeni	185 (16.1%)	50.37 SD18.86
Egyptian	157 (13.7%)	47.03 SD12.540
Others	359 (31.2%)	47.19 SD15.626
Unknown	4 (.3%)	40.50 SD13.026
	1149 (100%)	P value between groups < .001

Female patients were more likely to be older compared to males: 59.95 and 49.38 years, respectively ( $p = .009$ ). Similarly, Saudi patients were more likely to be older compared to non-Saudi patients: 52.58 and 48 years, respectively ( $p = < .001$ ). Hematemesis was the presenting symptom in 949 patients (82.6%), followed by melena in 168 (14.5%) patients. Combined hematemesis and melena were the presenting symptoms in 33 (2.9%) patients. Esophageal varices (EVs) due to portal hypertension was the most common endoscopic diagnosis followed by peptic ulcer disease (PUD) and gastritis, 432 (37.6%), 273 (23.17%), and 129 (11.3%), respectively (Table 2). Compared to PUD, patients with EVs were more likely to be older: 48.81 and 60 years, respectively ( $p = .001$ ). Similarly, patients who had EVs were older compared to those

with gastric varices: 60 and 48.9 years, respectively ( $p = .002$ ). Although patients with gastric cancer were typically older than EV patients, the difference was not significant.

**Table2. Endoscopic findings in EUGIB.**

Endoscopic Diagnosis	Number of Patients	Percentage
Esophageal Varices	432	37.6
Duodenal Ulcer	174	15.1
Gastritis	129	11.3
Esophagitis	113	9.8
Gastric Ulcer	99	8.6
Normal	59	5.1
Gastric Ulcer & Duodenitis	52	4.5
Duodenitis	32	2.8
Gastric Cancer	13	1.1
Mallory Weiss Tear	11	1.0
Gastric Varices	7	.6
Duodenal Ulcer & Esophageal Varices	6	.5
Esophageal Ulcer	5	.4
Candida Esophagitis	4	.3
Gastric Angiodysplasia	3	.3
Duodenal Cancer	3	.3
Cancer Esophagus	3	.3
Gastric Polyp	2	.2
Post-ERCP	1	.1
Gastric Leiomyoma	1	.1
	1149	100.00

## Discussion

Emergency upper gastrointestinal bleeding (EUGIB) is a frequent cause of emergency admission at KAUH. The patients in this report were predominantly middle-aged males. This finding is in keeping with previously published local and international data<sup>[1,5-8,15]</sup>. The majority of patients in this study had hematemesis at the time of presentation. Qari and Gado reported similar findings<sup>[5,8]</sup>. The age of patients who had gastric cancer (GC) was higher compared to those with esophageal varices, (EVs), which is consistent with previous reports of GC patients

presenting at an older age<sup>[16]</sup>. Bleeding EVs was the most frequent finding. This is also similar to what has been reported in both, local and regional studies<sup>[5,6,8]</sup>. However, this is different from international data, which showed that peptic ulcer-related bleeding is the main cause in 60% of patients<sup>[15]</sup>. This difference can be explained by the high prevalence of chronic viral liver disease and schistosomiasis in Saudi Arabia and Egypt<sup>[17-19]</sup>. In 5.19% of patients, no bleeding source was identified during upper GI endoscopy. Previous reports have also observed a 5% incidence of obscured causes of UGIB<sup>[20,21]</sup>. In such cases, extensive endoscopic and radiologic workups are needed to determine the bleeding source<sup>[20]</sup>.

### Conclusion

This study shows that variceal bleeding is the most common cause of emergency upper gastrointestinal bleeding in the western region of Saudi Arabia, and that most patients are early middle-aged men. Those results are compatible with the results published by other local authors from other regions of Saudi Arabia, although 61.4% of our patients were non-Saudis.

Presumably, the incidence of variceal EUGIB will continue to be the same until aggressive measures are implemented to eradicate hepatitis and schistosomiasis.

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دراسة على مرضى نزيف الجهاز الهضمي العلوي الحاد، حالة  
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*المستخلص.* يعد نزيف الجهاز الهضمي العلوي الحاد من الأسباب الرئيسية لارتفاع معدلات المراضة والوفيات. عالمياً الأسباب الأكثر شيوعاً هي القرحة الهضمية، التهاب المعدة التآكلي ودوالي المرئ. هذا البحث دراسة استعادية تحليلية لسبع سنوات على مرضى النزيف الحاد للجهاز الهضمي العلوي تم تشخيصهم عن طريق التنظير. شملت الدراسة ١١٤٩ مريضاً أغلبهم من الذكور (٧٦,٥%) والغالبية تعاني من قيء الدم (٨٢,٦%) في حين (١٤,٥%) تعاني من ملينا، أما بقية المرضى ٩,٢% فقد كانوا يعانون من كليهما. وقد أثبتت الدراسة أن دوالي المرئ النازف يشكل الغالبية العظمى من المرضى (٣٧,٦%) تلتها القرحة الهضمية (٢٣,٧%) ثم التهاب المعدة التآكلي (١١,٣%). نستنتج أنه في مركز طبي كبير للرعاية الصحية من الدرجة الثالثة وهو مستشفى جامعة الملك عبدالعزيز بالمنطقة الغربية شكل ارتفاع ضغط الوريد البابي الكبدي عاملاً عالي الخطورة للنزيف الحاد من الجهاز الهضمي العلوي، ذلك أن التهاب الكبد الفيروسي B و C يعتبر متوطناً في المملكة، ذلك بالإضافة إلى وجود نسبة عالية

من مرضى البلهارسيا المعوية. وقد وجد أن التنظير العاجل للجهاز الهضمي العلوي في هذه الحالات فعال للناحيين التشخيصية والعلاجية. وعلى الرغم من أن غالبية المرضى هم من غير السعوديين ٦١,٤٪ فقد وجد أن نتائج الدراسة تتوافق مع نتائج دراسات أجريت في مناطق أخرى من المملكة.

*الكلمات الرئيسية:* نزيف الجهاز الهضمي العلوي الطارئ، دوالي المريء، قيء دم، ميلينا.