

# Upper Gastrointestinal Bleeding In A Nigerian Diagnostic Center: A Retrospective Study Of Endoscopic Records

Emuobor Aghoghor Odeghe<sup>1</sup> , Oluwafunmilayo Funke Adeniyi<sup>2</sup> , Aderemi Omololu Oluyemi<sup>3</sup> , Vivian Ngozi Nwude<sup>4</sup> , and Samuel Olalekan Keshinro<sup>5</sup> 

<sup>1</sup>Department of Medicine, College of Medicine/Lagos University Teaching Hospital, Lagos, Nigeria

<sup>2</sup>Department of Paediatrics, College of Medicine/Lagos University Teaching Hospital, Lagos, Nigeria

<sup>3</sup>ReMay Consultancy and Medical Services, Ikeja, Lagos, Nigeria

<sup>4</sup>Evercare Hospital, Lekki, Lagos, Nigeria

<sup>5</sup>Police Hospital, Falomo, Ikoyi, Lagos, Nigeria

**Correspondence to:** Emuobor A. Odeghe; email: eaodeghe@yahoo.com

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## Abstract

**Background:** Upper gastrointestinal bleeding (UGIB) is a common indication for endoscopy. We aimed to describe the endoscopic findings in patients referred to our center with UGIB. **Methods:** This was a single-center retrospective study of the endoscopic findings in patients with UGIB between August 1, 2017, and April 30, 2019, in Lagos, Nigeria. Data were analyzed using Statistical Package for Social Sciences version 23.0. **Results:** Eight hundred thirty-two patients underwent endoscopy, of which 129 (16%) were for UGIB, which occurred twice as frequently in males. Melena was the most frequent presentation. Endoscopic abnormalities including gastric/duodenal peptic ulcers (39%), gastroduodenal erosions (36%), and varices (12%), were

identified in 83% of the participants. Most ulcers were low risk. **Conclusion:** Patients presenting to our center with UGIB commonly have gastric/duodenal peptic ulcers or gastroduodenal erosions.

**Keywords:** Upper gastrointestinal bleeding, Endoscopy, Nigeria.

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## Introduction

Upper gastrointestinal bleeding (UGIB) is defined as bleeding above the ligament of Treitz, and it includes bleeding from the esophagus, stomach, and duodenum (1). It can be classified as either variceal or non-variceal, and its treatment depends on this classification (1). Endoscopy has become a most essential tool in the definitive evaluation of the causes of upper gastrointestinal diseases in general, and UGIB in

particular; indeed, the condition is a common indication for the procedure (2-4).

Clinical presentation in UGIB is varied, and may include hematemesis, melena, hematochezia, syncope, or shock (2, 5, 6). It is more common in males and older adults (5, 6). The most common endoscopic findings include peptic ulcer disease (PUD), gastroduodenal erosions, and esophageal varices (2, 3, 6). This is hardly surprising, as these are also the most common findings

in patients undergoing endoscopy for the evaluation of upper gastrointestinal symptoms (4). Risk factors include use of non-steroidal anti-inflammatory drugs (NSAIDs), alcohol consumption, smoking, or previous PUD or UGIB (2, 7).

Mortality from an episode of UGIB from African studies is up to 15% and is higher in patients with diastolic blood pressures >90 mmHg, those who did not receive blood transfusion, those at least 60 years old, those who were hospitalized at the time they developed UGIB, and those with major comorbidities such as liver cirrhosis, renal failure, and ischemic heart failure (3, 5, 6).

There are few local studies on this topic, with most being carried out in public institutions (3, 5, 8). The aim of this study, therefore, was to describe the endoscopic findings in patients presenting with UGIB to a private diagnostic center in Lagos, Nigeria.

**Materials and methods**

This was a retrospective study of the endoscopic records of all patients aged at least 16 years who had endoscopy for UGIB between August 2017 and April 2019 at the endoscopy suite of a private diagnostic center in Lagos. This center is located in the mainland area of the state, offers both diagnostic and therapeutic gastrointestinal endoscopy services to adults and children who are referred from within and outside the state, and performs an average of 100 procedures monthly. The procedures are performed by both adult and pediatric gastrointestinal endoscopists. Ethical approval was obtained before commencement of the study.

The following data were retrieved and entered into a proforma designed for this study: basic demographics, the indication for the procedure, use of NSAID, presence of comorbidities (such as liver cirrhosis and chronic kidney disease), and endoscopic findings. The endoscopic procedures were performed after an overnight fast by three gastrointestinal endoscopists, and endoscopic diagnoses were based on visual examination. The Forrest classification was used to describe ulcers as follows (9):

- class Ia: spurting bleeding;
- class Ib: oozing bleeding;
- class IIa: non-bleeding visible vessel;

- class IIb: adherent clot;
- class IIc: ulcer with flat, pigmented spot;
- class III: ulcer with clean base.

Paquet grading of esophageal varices was used when present as follows (10):

- grade I: microcapillaries located in distal esophagus or esophago-gastric junction;
- grade II: one or two small varices located in the distal esophagus;
- grade III: medium-sized varices of any number;
- grade IV: large-sized varices in any part of esophagus.

**Data analysis**

Data were analyzed using SPSS Statistics for Windows, version 23.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were performed and displayed as frequency tables.

**Results**

**Demographics and clinical features of study participants**

Eight hundred thirty-two patients underwent upper gastrointestinal endoscopy in the study period, comprising 442 males (53.1%) and 390 females (46.9%), (male/female ratio, 1.1:1), and with mean age of 46.2±14.4 years.

Table 1. Characteristics of patients with upper gastrointestinal bleeding (n=129)

Age (years)	51.5 ± 16.3
Age ≥60 years	43 (33.3)
Male	89 (69)
Female	40 (31)
Symptom of UGIB	
Melena	99 (76.7)
Hematemesis	63 (48.8)
Melena and hematemesis	33 (25.6)
Maroon stools (and melena and/or hematemesis)	8 (6.2)
Nonsteroidal anti-inflammatory drug use	18 (14)
Comorbidities	
Cirrhosis	22 (17.1)
Chronic kidney disease	2 (1.6)

Data are presented as mean±standard deviation or n (%).

Of these, the indication for upper gastrointestinal endoscopy was UGIB in 129 (15.5%). The ratio of male to female was 2.2:1. None of the patients presented in hemorrhagic shock.

### ***Endoscopic findings in patients with UGIB***

The endoscopic findings in patients with UGIB are shown in Table 2. Endoscopic abnormalities were present in 82.9% of patients, whereas no abnormality was identified in 17.1%. The most common findings were benign gastric/duodenal peptic ulcers (50, 38.8%), gastroduodenal erosions (46, 35.7%), esophageal varices (16, 12.4%), esophagitis (15, 11.6%), and broad-based gastroduodenal masses (11, 8.5%). All patients with grade IV varices underwent band ligation. Histology reports were available for 2 of the 11 patients with gastroduodenal masses and confirmed the presence of malignancy in both (diffuse type gastric carcinoma and invasive, poorly differentiated gastric adenocarcinoma).

Table 2. Endoscopic findings in patients with UGIB

Normal	22 (17.1)
Peptic ulcer	50 (38.8)
Gastric ulcer	43 (86)
Duodenal ulcer	7 (14)
Gastroduodenal erosions	46 (35.7)
Portal hypertension	19 (14.7)
Esophageal varices	16 (84.2)
Portal hypertensive gastropathy only	3 (15.8)
Esophagitis	15 (11.6)
Gastroduodenal mass	11 (8.5)
Forrest classification of ulcers	50 (38.8)
Class Ib	1 (2)
Class IIa	1 (2)
Class IIb	2 (4)
Class IIc	9 (18)
Class III	37 (74)
Grades of esophageal varices	16 (12.4)
Grade I	6 (37.5)
Grade II	5 (31.3)
Grade III	2 (12.5)
Grade IV	3 (18.8)

Data are presented as n (%).

### **Discussion**

UGIB is a common indication for endoscopy. In our study, 16% of referrals for endoscopy were for UGIB, which is similar to findings from other African studies (2, 11), but is more frequent than findings from another Nigerian study by Alatise et al. (3) from Ife. The study from Ife was carried out in a public institution, and this difference in the sourcing of patients may have accounted for its difference with our study. This study's finding of UGIB being more common in males is consistent with that from several authors (2, 5-7). The male preponderance may be explained by the higher prevalence of the underlying diseases and risk factors in Nigerian males, namely alcohol, smoking, peptic ulcers, and chronic liver disease (12-15). Thirty-three percent of the patients with UGIB in our study were at least 60 years. The finding of increasing prevalence of UGIB with increasing age appears to be universal among published observations (6, 16). The reason adduced for this common finding may be the more frequent use of NSAIDs in the elderly for arthritic (and other rheumatologic) symptoms. However, in a study from Tanzania, 60% of the participants were 40 years or younger (2).

Although we found melena to be the most common presentation, as have other studies, hematemesis may be more frightening to the patient and has been reported as the most common presentation by other authors (2, 3, 5, 6).

Professional guidelines recommend endoscopy to be performed after the patient is resuscitated with achievement of hemodynamic stability, within 24 hours, as this leads to reduced mortality (17, 18). As this study was done in a private diagnostic center with no in-patient facilities, none of the patients presented in shock, as they had all been stabilized by their primary care physicians before they were referred for endoscopic evaluation.

Fourteen percent of the patients with UGIB had used NSAIDs and/or aspirin within 4 weeks of the episode of bleeding. Indications for the use of NSAID/aspirin were varied.

Endoscopy revealed abnormalities in 83% of the patients with UGIB, as has been reported in other studies

(2, 3, 6, 7). The most common findings were gastric/duodenal ulcers, gastroduodenitis/erosions, and esophageal varices. This is similar to what has been reported in both local and international studies, but is in contrast to studies from Egypt and Tanzania, where esophageal varices were the most common findings (2, 3, 6, 16). This difference may be explained by different population characteristics such as the frequent use of NSAID in our study, higher prevalence of liver cirrhosis and portal hypertension (probably caused by chronic hepatitis C virus infection and schistosomiasis) in the Egyptian population, and the higher frequency of alcohol use among the participants in the Tanzanian study. Indeed, in both the Egyptian and Tanzanian studies, liver cirrhosis was the most common comorbidity in the participants with UGIB. It is therefore not surprising that esophageal varices were the most common cause of UGIB. Less common findings were esophagitis and upper gastrointestinal masses. Among the patients with gastric/duodenal ulcers, the most common endoscopic grade of ulcer was Forrest class III, similar to another African study, whereas for esophageal varices, it was Paquet grades I and II (68.8%), which is different from studies from Ife and Tanzania, where grade III varices were the most common grade (2, 3). The reasons for this difference may include late patient presentation and/or performance of endoscopy.

### Limitations

Because of the retrospective nature of the study, we could not ascertain the time from presentation with UGIB to performance of endoscopy. Selection bias may have been introduced, as the study was done in a private center, limiting patients to those who could afford endoscopy.

### Conclusion

The findings from this single center study show that UGIB is an important indication for endoscopy. Similar to the findings of studies from public institutions, PUD, gastroduodenal erosions and esophageal varices are the most common endoscopic findings seen in a private center in Lagos.

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