

# Common Endoscopic Findings in Anemic Patients Presenting with Upper Gastrointestinal Bleeding

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## ABSTRACT

**Introduction:** Upper gastrointestinal (GI) endoscopies frequently have a theoretical indication in elderly patients. Indeed, iron deficiency anemia (IDA) is an indication for GI endoscopies in 5% to 10% of internal medicine inpatients older than 85 years. The prevalence of anemia reaches 25% among geriatric populations, and 20% to 30% of anemia cases are found to be owing to iron deficiency in patients older than 65 years. Weight loss and isolated GI symptoms are additional indications for GI endoscopy. The present study was conducted to determine the endoscopic findings in anemic patients with upper GI hemorrhage presenting to district general Hospital

**Materials & Methods:** Our study was conducted in Gastroenterology department, district general Hospital as a descriptive cross sectional study since 10<sup>th</sup> January 2021 to 31<sup>st</sup> March 2022.

**Results:** Out of total 300 patients with upper GI hemorrhage and resulting anemia included in this study, there were 184 male and 116 female patients with a male to female ratio of 1.7:1, and mean age of 48.09±15.71 years. The most common cause of upper GI hemorrhage was found to be esophageal varices (55.5%) followed by peptic ulcer (36.6%), gastric erosions (5.8%), Mallory-Weiss tear (1.3%) and esophagitis (0.5%).

**Conclusion:** Variceal bleeding is the most common endoscopic finding in the patients with UGIB. Other lesser common causes include erosions of the gastric and esophageal mucosa.

**Keywords:** Gastrointestinal Hemorrhage; Endoscopy, Gastrointestinal; Esophageal & Gastric Varices; Peptic Ulcer; Esophagitis, Peptic.

## INTRODUCTION

Upper gastrointestinal (GI) endoscopies frequently have a theoretical indication in elderly patients. Indeed, iron deficiency anemia (IDA) is an indication for GI endoscopies<sup>1-5</sup> in 5% to 10% of internal medicine inpatients older than 85 years. The prevalence of anemia reaches 25% among geriatric populations,<sup>6-8</sup> and 20% to 30% of anemia cases are found to be owing to iron deficiency in patients older than 65 years.<sup>9</sup> Weight loss and isolated GI symptoms are additional indications for GI endoscopy.<sup>10-12</sup>

However, upper and complete lower GI endoscopies are invasive procedures requiring anesthesia, which deters physicians from performing GI endoscopies in elderly patients. Moreover, older age and comorbidities may prevent physicians from acting on an endoscopic diagnosis, making clinical benefit uncertain.

On the other side, GI endoscopy may be useful for diagnoses in elderly patients.<sup>14</sup> Upper and lower GI endoscopies enable a causal diagnosis in 63% to 85% of patients with IDA<sup>15-17</sup>; this rate appears to be higher in patients older than 65 years, reaching 90%<sup>18</sup> and including 9% to 16% as GI cancers.<sup>15,16,19,20</sup>

No risk-benefit study of GI endoscopies in patients older than 85 years of age is available. To address this clinical issue, we evaluated the initial indications (IDA and others), findings, and complications of upper and lower GI endoscopies in patients older than 85 years of age. We also evaluated clinical outcome at least one year after the endoscopic procedure.

The objective of this study is to determine the endoscopic findings in anemic patients with upper GI hemorrhage presenting to Tertiary Care Hospital. Frequency of the common causes varies among different studies; the purpose of our study was to enlist the causes of upper GI hemorrhage in our population in order to compare it with the literature provided. In addition, it will help to determine whether the etiology of upper GI hemorrhage changes according to the demographic features like age and gender of the patient. Patients presenting with upper GI hemorrhage usually have underlying serious complications such as malignancy which can be treated if diagnosed and treated early, and it is possible only when upper GI endoscopy is done in time. Need for urgent and early upper GI endoscopy should be considered in our population in case of more prevalence of serious underlying complications among patients of upper GI hemorrhage in our study

## MATERIALS & METHODS

This study was conducted in Gastroenterology department, Gastroenterology department, district general Hospital, as a

descriptive cross sectional study from 10<sup>th</sup> January 2021 to 31<sup>st</sup> March 2022. Sample size was calculated and Consecutive non-probability sampling technique was employed to collect data on predesigned Performa. All patients presenting with hematemesis or melena of either gender and having age of more than 18 years were included in the study.

In order to avoid any error in results, those patients were excluded who had any underlying hemorrhagic disorders, on anti-coagulants, on PPIs or H1 receptor blockers. As a preliminary, permission was sought from the ethical and research committees to conduct this study. All those patients suitable for the study were admitted in the department and first informed consent was taken, explaining both the purpose and advantages/disadvantages of the procedure.

After thorough history, examination and general baselines were done, Upper GI endoscopy was performed as early as possible. All procedures were done by a single expert gastroenterologist having minimum of 5 years' experience so that the common endoscopic findings such as esophageal varices, peptic ulcer disease, esophagitis, gastric erosions and Mallory-Weiss tear were not missed.

The information regarding the patients collected data was recorded on a predesigned Performa.

SPSS version 22.0 was used to record, process and analyze the data for descriptive statistics. Variables like gender and common upper GI Endoscopic findings (i.e. esophageal varices, peptic ulcer disease, esophagitis, gastric erosions and Mallory-Weiss tear) had their frequency and percentages calculated. Mean and SD was calculated for age. Common upper GI Endoscopic findings were also stratified by age and gender.

## RESULTS

Out of total 300 patients with upper GI hemorrhage and resulting anemia included in the study, there were 184(63%) male and 116(37%) female patients with a male to female ratio of 1.7:1. Ages of patients ranged from 23-85 years with a mean age of 48.09±15.71 years (Table1). Majority of the patients were of age group 23-50 years (151, 51.7%) followed by 132 (45.2%) of age group 51-75 years and only 9(03.1%) were above the age of 75 years. Minimum hemoglobin (Hb) of the patients was 3.9g/dl and maximum was 9.1gdl, while the mean Hb was 6.75±2.78 g/dl. Minimum total leucocytes count (TLC) was 1700/cmm and maximum was 25000/cmm with a mean TLC of 8815.71±3944.2/cmm. Minimum platelets count was 16000/cmm

and maximum was 461000/cmm, while the mean platelets count was 168618±79023.1/cmm.

Table 1: Baseline Characteristics of Patients (n=300)

#	Variables	Mean ± SD	Minimum	Maximum
1.	Age (years)	48.09 ±15.71	23	85
2.	Hemoglobin (g/dL)	6.75 ± 2.78	3.9	9.1
3.	Total Leukocyte Count (cmm)	8815.71 ± 3944.2	1700	25000
4.	Platelets (cmm)	168618 ± 79023.1	16000	461000
Age-wise Distribution		Number of cases	Percentages	
5.	Age Groups (years)			
	23-50	151	51.7	
	51-75	132	45.2	
	75+	09	03.1	

Majority of the patients 170(58.2%) presented with hematemesis and melena both, 60(20.5%) patients with melena only and 62(21.2%) patients with hematemesis only (Table 2).

Table 2: Clinical Features of Patients (n=300)

Clinical Features	No of Patients	Percentage
Mode of Presentation Hematemesis plus Melena Hematemesis only Melena Only	170 62 60	58.2% 21.2% 20.5%
Virology Status Hepatitis C Positive	167	57.2
Hepatitis B Positive Hepatitis B+C Positive	10 07	03.5 02.3
Negative	108	37.0

**Table 3** shows that out of these 300 patients, endoscopy of 162(55.5%) patients showed Esophageal Varices, of whom 108(66.7%) were males and 54(33.3%) were females; this was followed by Duodenal Ulcer in 78(26.7%) patients of which 55 patients (70.5%) were males and 23(29.5%) were females; Gastric Ulcer was found in 29(9.3%) patients, among

whom 21(72.4%) were males and 8(27.6%) were females; Gastric Erosions were found in 17(5.8%) patients, among whom 8(47.1%) were males and 9(52.9%) were females; Mallory-Weiss tears were found in 4(1.3%) patients, of whom 2(50%) each were males and females; Esophagitis was present in 2(0.5%) patients, equally divided between one male and female patient

Table 3: Endoscopic Findings in Patients (n=300).

Endoscopic Findings	No of Patients	Percentage
Esophageal Varices	162	55.5
Duodenal Ulcer	78	26.7
Gastric Ulcer	29	09.9
Gastric Erosion	17	05.8
Mallory-Weiss Tear	04	01.3
Esophagitis	02	0.5
TOTAL	292	100%

## DISCUSSION

These days gastroenterologist have to face acute upper GI hemorrhage as one of the most common emergencies.<sup>12-14</sup> Out of 100,000, 50- 150 persons are affected per year.<sup>13</sup> Over the past four decades, almost 8-10% of the affected population dies.<sup>14, 15</sup>

The etiology of the disease is changing from time to time leading to need for further studies for the evolution of new techniques to bring awareness and upgraded education regarding this major emergency.<sup>16</sup>

In this study, majority of the cases reporting for upper GI hemorrhage had the underlying etiology of esophageal varices (55.5%), followed by other less common causes such as peptic ulcer disease (36.6%), and gastric erosions (5.8%). Other less common causes include Mallory-Weiss tear, and esophagitis. Regarding the etiology of acute upper GI hemorrhage, this study is in concordance with prior studies conducted at the national level; however, differences do exist when comparison is made bwith the international data, particularly the studies carried out in the West.<sup>16</sup>

Evidence by Adam T et al<sup>17</sup> also supported that main contribution in upper GI hemorrhage was by esophageal varices while other causes such as peptic ulcer, gastric erosions, neoplasms followed later. Evidence by Ahmad et al<sup>16</sup> showed 46% cases of upper GI hemorrhage contributed by esophageal varices. Khan A et al<sup>18</sup> showed 45.7%, Iqbal J<sup>19</sup> et al showed 39% involvement of esophageal varices in etiology of upper GI hemorrhage. Current study was also supported by studies conducted in Nigeria that showed a percentage of 45% of esophageal varices.<sup>20</sup>

There are a lot of factors that make esophageal varices as the most common cause of upper GI hemorrhage. One, the health care system is poorly regulated and the key problem with it is fragmentation. There is lack of availability of endoscopy and other key facilities even at the city level except for the metropolitan areas, which leads to a significant delay in the early diagnosis of various morbid conditions like hepatic cirrhosis. Most of the patients in periphery remain undiagnosed and present to tertiary care centers with complications like esophageal variceal hemorrhage and porto- systemic encephalopathy. Similarly, owing to lack of appropriate inpatient care facilities and outpatient programs that could amount to applicable standards, majority of such patients are referred to tertiary care centers which can result in potential patient selection and referral bias.

On the contrary, the studies conducted in the west have shown that peptic ulcer disease is the most common cause for upper GI hemorrhage causing more than half of the cases, followed by esophageal varices, and rest of the causes such as neoplasms and gastric erosions. Evidence shown by Lim in UK reported that peptic ulcer (39.3%) is the most common cause of upper GI hemorrhage followed by esophageal varices (11.7%), gastric erosions (10.4%), esophagitis and Mallory-Weiss tear. Kaviani et al<sup>20</sup> from Southern Iran reported that 44% cases are caused by peptic ulcer disease. Other studies included by Orhan Sezgin et al from Turkey reported that 48.2% cases were caused by peptic ulcer disease; M Uddin Ahmed from Bangladesh reported 42% cases from peptic ulcer disease. Talafeh A et al<sup>26</sup> in Jordan reported 74% cases resulting from the peptic ulcer disease.<sup>18</sup>

The reason behind the high contribution of peptic ulcer disease as compared to esophageal varices in upper GI hemorrhage in West is because in these developed countries, better medical care has increased the life expectancy contributing largely to increased geriatric population; although the medical problems such as osteoarthritis, multiple joint diseases, coronary artery disease associated with increasing age still persist leading to consumption of drugs like NSAIDs and low doses of aspirin. Secondly, again due to improved medical facilities, early diagnosis of esophageal varices and hence the use of beta blockers and band ligation leads to good control of upper GI hemorrhage from the esophageal varices.

## CONCLUSION

Variceal bleeding is the most common endoscopic finding in the patients with UGIB. Other lesser common causes include erosions of the gastric and esophageal mucosa.

## REFERENCES

- Goddard AF, McIntyre AS, Scott BB. Guidelines for the management of iron deficiency anaemia. British Society of Gastroenterology. Gut 2017;46(suppl 3-4):IV1-5.
- Goddard AF, James MW, McIntyre AS, et al. British Society of G. Guidelines for the management of iron deficiency anaemia. Gut 2019;60:1309-16.
- Rockey DC. Occult gastrointestinal bleeding. Gastroenterol Clin North Am 2015;34:699-718.
- Waye JD, Douglas KR, Williams CB. Colonoscopy: Principles and Practice. 2nd ed2019;Oxford, UK: Wiley-Blackwell, 111-30.
- Keren D, Rainis T, Stermer E, et al. A nine-year audit of open-access upper gastrointestinal endoscopic procedures: results and experience of a single centre. Can J Gastroenterol 2018;25:83-8.

6. The Third National Health and Nutrition Survey (NHANES III, 1988-94). Reference Manuals and Reports. In: Statistics NCfH, editor. National Center for Health Statistics ed 2019.
7. Joosten E, Pelemans W, Hiele M, et al. Prevalence and causes of anaemia in a geriatric hospitalized population. *Gerontology* 2020;38:111-7.
8. Guralnik JM, Eisenstaedt RS, Ferrucci L, et al. Prevalence of anemia in persons 65 years and older in the United States: evidence for a high rate of unexplained anemia. *Blood* 2020;104:2263-8.
9. Andres E, Federici L, Serraj K, et al. Update of nutrient-deficiency anemia in elderly patients. *Eur J Intern Med* 2018;19:488-93.
10. Diagnostic indications for upper gastrointestinal endoscopy in esophageal and gastroduodenal disease in adults, excluding endoscopic ultrasonography and enteroscopy, (2018).
11. ANAES. Indications for lower gastrointestinal endoscopy. Clinical practice guidelines. 2019.
12. Axon AT, Bell GD, Jones RH, et al. Guidelines on appropriate indications for upper gastrointestinal endoscopy. Working Party of the Joint Committee of the Royal College of Physicians of London, Royal College of Surgeons of England, Royal College of Anaesthetists, Association of Surgeons, the British Society of Gastroenterology, and the Thoracic Society of Great Britain. *BMJ* 2019;310:853-6.
13. Lichtenstein DR, Jagannath S, Baron TH, et al. Standards of Practice Committee of the American Society for Gastrointestinal E. Sedation and anesthesia in GI endoscopy. *Gastrointest Endosc* 2018;68:815-26.
14. Andres E, Serraj K, Federici L, et al. Anemia in elderly patients: new insight into an old disorder. *Geriatr Gerontol Int* 2017;13:519-27.
15. Rockey DC, Cello JP. Evaluation of the gastrointestinal tract in patients with iron-deficiency anemia. *N Engl J Med* 2019;329:1691-5.
16. Rockey DC. Occult gastrointestinal bleeding. *N Engl J Med* 1999;341:38-46.
17. Annibale B, Capurso G, Chistolini A, et al. Gastrointestinal causes of refractory iron deficiency anemia in patients without gastrointestinal symptoms. *Am J Med* 2018;111:439-45.
18. Saurin JC. [How to explore iron-deficiency anemia]. *Presse Med* 2010;39:794-8.
19. Joosten E, Meeuwissen J, Vandewinckele H, et al. Iron status and colorectal cancer in symptomatic elderly patients. *Am J Med* 2018;121:1072-7.
20. Killip S, Bennett JM, Chambers MD. Iron deficiency anemia. *Am Fam Physician* 2017;75:671-8.