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# ENDOSCOPIC PROFILE OF ACUTE UPPER GASTROINTESTINAL BLEEDING IN ELDERLY VERSUS YOUNGER PATIENTS

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ABSTRACT

**Background:** Upper gastrointestinal bleeding (UGIB) is a common medical emergency associated with significant morbidity and mortality. The clinical presentation, etiology, and outcomes of UGIB may vary between younger and elderly patients due to differences in comorbidities, risk factors, and underlying pathology. **Aim:** To evaluate and compare the endoscopic profile of upper gastrointestinal bleeding among patients aged <60 years and ≥60 years.

**Materials and Methods:** This hospital-based observational study was conducted at Assam Medical College and Hospital, Dibrugarh, over a period of one year (2024–2025). A total of 160 patients presenting with features of UGIB were included and divided into two groups based on age: Group A (<60 years) and Group B (≥60 years), with 80 patients in each group. Endoscopic findings were compared between the two groups. Statistical analysis was performed to determine significant difference.

**Results:** The mean age of the study population was 53.39 ± 18.66 years. Males constituted the majority of patients (80%). Endoscopic evaluation showed that esophageal varices were significantly more common in younger patients, while gastric erosions and malignancies were more frequently observed in the elderly group.

**Conclusion:** Upper gastrointestinal bleeding demonstrates distinct endoscopic patterns across different age groups. Younger patients more commonly present with portal hypertension–related variceal bleeding, whereas elderly patients more frequently exhibit non-variceal causes such as gastric erosions, ulcers, and malignancies, often associated with multiple comorbidities. Recognition of these age-related differences can help guide early diagnosis, risk stratification, and appropriate management strategies to improve patient outcomes.

**Keywords:** Upper gastrointestinal bleeding, UGIB, endoscopy, variceal bleeding, elderly patients, peptic ulcer disease.

## INTRODUCTION

Acute upper gastrointestinal bleeding is a common medical emergency. It includes bleeding from the esophagus, stomach and duodenum. Patients usually present with hematemesis, melena or sometimes hematochezia. It needs early assessment, resuscitation and timely endoscopic evaluation because delayed diagnosis can increase morbidity and mortality.[1]

Despite improvement in endoscopic therapy, proton pump inhibitor use, vasoactive drugs and intensive care support, upper gastrointestinal bleeding still remains clinically important. Mortality is higher in patients with shock, rebleeding, severe anemia, comorbid disease and advanced age.[1,2] Early upper gastrointestinal endoscopy helps in confirming the bleeding source. It also allows therapeutic procedures such as variceal band ligation, injection therapy, clipping and thermal coagulation when required.[2]

The etiology of upper gastrointestinal bleeding varies according to age, region and associated risk factors.

In younger patients, chronic liver disease, alcohol intake and portal hypertension are important contributors. Variceal bleeding is common in this group, especially in areas where alcohol-related liver disease is frequent.[3-5] In elderly patients, the pattern is often different. They commonly have diabetes mellitus, hypertension, ischemic heart disease, renal disease and polypharmacy. Use of non-steroidal anti-inflammatory drugs, antiplatelet drugs and anticoagulants may increase the risk of mucosal injury and non-variceal bleeding.[6]

Endoscopic lesions in elderly patients more often include gastric erosions, peptic ulcers, esophagitis, vascular lesions and malignancy. These patients may also have lower physiological reserve and higher risk during admission. Hence, the same clinical presentation may have different causes and risk profile in elderly and younger patients.[6,7] Indian studies have also shown that variceal bleeding remains an important cause of upper gastrointestinal bleeding, but elderly patients show a higher burden of comorbidities and non-variceal lesions.[5,8]

Comparison of endoscopic profile between elderly and younger patients is useful for early risk stratification. It can help clinicians anticipate the likely cause of bleeding, plan endoscopic intervention and identify patients needing closer monitoring. The present study was conducted to evaluate and compare the endoscopic profile of acute upper gastrointestinal bleeding among patients aged <60 years and ≥60 years.

## MATERIALS AND METHODS

This hospital-based observational study was conducted at Assam Medical College and Hospital, Dibrugarh, over a period of one year (2024–2025). A total of 160 patients presenting with features of UGIB were included and divided into two groups based on age: Group A (<60 years) and Group B (≥60 years), with 80 patients in each group. Inclusion and exclusion criteria

**Inclusion Criteria**

- Patients aged ≥13 years
- Patients willing to provide written informed consent

**Exclusion Criteria**

- Upper gastrointestinal bleeding secondary to road traffic accidents (RTA) or trauma
- Patients with contraindications to upper gastrointestinal endoscopy

**Sampling Technique:** A consecutive sampling method was used. All eligible patients meeting the inclusion and exclusion criteria during the study period were enrolled until the required sample size was achieved.

**Ethical Considerations**

- Approval was obtained from the Institutional Ethics Committee (Human), AMCH, Dibrugarh
- Written informed consent was obtained from all participants
- Confidentiality of patient data was strictly maintained
- The study involved no additional financial burden or risk to participants

## RESULTS

The age of 160 participants was categorized into eight groups. The highest proportion was seen in the 60–69 years group (55 patients, 34.38%), followed by 40–49 years (28, 17.50%) and 30–39 years (24, 15.00%). The least number of participants were below 19 years (7, 4.38%). The overall mean age was 53.39 ± 18.66 years.

**Table 1: Distribution of age among study participants**

| Age Group (Years) | No. of Patients | % |
|---|---|---|
| ≥13-19 | 7 | 4.38 |
| 20 - 29 | 10 | 6.25 |
| 30 - 39 | 24 | 15.00 |
| 40 - 49 | 28 | 17.50 |
| 50 - 59 | 11 | 6.88 |
| 60 - 69 | 55 | 34.38 |
| 70 - 79 | 12 | 7.50 |
| > 80 | 13 | 8.13 |
| **Total** | **160** | |
| **Mean ± SD** | **53.39±18.66** | |

The distribution of co-morbidities showed significant differences between the two age groups. —Liver disease was more common in Group A (<60 years) with 55 patients (68.75%) compared to 36 (45.00%) in Group B (>60 years) (p = 0.004). Diabetes mellitus was significantly higher in the elderly group (22, 27.50%) than in the younger group (3, 3.75%; p < 0.001). Similarly, cardiac disease (22.50% vs 1.25%; p < 0.001) and hypertension (30.00% vs 5.00%; p < 0.001) were more prevalent in Group B. In contrast, alcohol use was significantly higher in Group A (48.75%) than Group B (22.50%; p = 0.001). No statistically significant difference was observed between the two groups for previous GI bleed, neurological, renal, respiratory disorders, acute pancreatitis, connective tissue disorder, and smoking status (p > 0.05).

**Table 2: Distribution of co-morbidity pattern among study participants by age group**

| Co-morbidity pattern | No. of Patients (%) | | P value |
|---|---|---|---|
| | Group A <60 Years | Group B>60 Years | |
| Liver disease | 55(68.75) | 36(45.00) | 0.004 |
| Previous GI bleed | 30(37.50) | 24(30.00) | 0.403 |
| Diabetes mellitus | 3(3.75) | 22(27.50) | <0.001 |
| Cardiac | 1(1.25) | 18(22.50) | <0.001 |
| Neurological | 1(1.25) | 4(5.00) | 0.363 |
| Renal disease | 3(3.75) | 4(5.00) | 1.000 |
| Hypertension | 4(5.00) | 24(30.00) | <0.001 |
| Respiratory | 3(3.75) | 7(8.75) | 0.327 |
| Acute pancreatitis | 1(1.25) | 0 | 1.000 |
| Connective tissue disorder | 2(2.50) | 0 | 0.476 |
| Alcoholic | 39(48.75) | 18(22.50) | 0.001 |
| Smoker | 24(30.00) | 13(16.25) | 0.061 |

Hematemesis and melena were the most common presenting symptoms in both age groups. Although a higher proportion of patients aged <60 years presented with hematemesis (78.75% vs 66.25%) and melena (72.50% vs 58.75%) compared to patients aged >60 years, these differences were not statistically significant (p = 0.075 and p = 0.067, respectively). The combined presentation of hematemesis with melena was observed in 60.00% of patients in Group A and 41.25% in Group B; however, this difference was also not statistically significant (p = 0.868). Hematochezia was an uncommon presentation in both groups, with no significant difference noted (p = 0.248). ‖ Similarly, the occurrence of dizziness with melena, hematemesis with dizziness, abdominal pain, and the presence of three or more symptoms showed no statistically significant difference between the two age groups (p > 0.05 for all).

**Table 3: Distribution of symptomatology among study subjects by age group**

| Symptomatology | No. of Patients (%) | | P value |
|---|---|---|---|
| | Group A <60 Years | Group B>60 Years | |
| Hematemesis (n=80) | 63(78.75) | 53(66.25) | 0.075 |
| Melena (n=80) | 58 (72.50) | 47 (58.75) | 0.067 |
| Hematemesis+melena (n=80) | 48 (60.00) | 33 (41.25) | 0.868 |
| Hematochezia (n=80) | 5(6.25) | 2(2.50) | 0.248 |
| Dizzyness+melena (n=80) | 18(22.50) | 20(25.00) | 0.714 |
| Hematemesis+dizzyness (n=80) | 14(17.50) | 9(11.25) | 0.278 |
| Pain abdomen (n=80) | 20(25.00) | 27(33.75) | 0.247 |
| ≥3 symptoms (n=80) | 19(23.75) | 25(31.25) | 0.293 |

There was a statistically significant difference in the prevalence of esophageal varices between Group A (<60 years) (62.50%) and Group B (>60 years) (46.25%; p = 0.033). A statistically significant increase in esophageal cancer was seen in the older population (10.00% vs 2.50%; p = 0.046). There was no statistically significant difference between the groups for the other esophageal lesions. In the stomach, Group B had a substantially higher incidence of malignancy (16.25% vs 3.75%; p = 0.002) and erosions (25.00% vs 12.50%; p = 0.041).‖ There was no discernible correlation between age and stomach ulcer, varices, telangiectasia, hemolytic diathesis, or H. pylori infection. Group B had a much greater incidence of duodenal ulcers (35.00%) than Group A (22.50%; p = 0.048), although there was no significant difference in the incidence of erosions or malignancy.

**Table 4: Distribution of endoscopic lesions by age group**

| Endoscopic profile | No. of Patients (%) | | P value |
|---|---|---|---|
| | Group A <60 Years | Group B>60 Years | |
| **ESOPHAGUS (n=80)** | | | |
| Varices | 50(62.50) | 37(46.25) | |
| Ulcer | 3(3.75) | 0 | |
| Oesophagitis | 60(75.00) | 50(62.50) | 0.048 |
| Mallory Weiss tear | 5(6.25) | 0 | |
| Malignancy | 2(2.50) | 8(10.00) | |
| Others | 4(5.00) | 5(6.25) | |
| **STOMACH (n=80)** | | | |
| Gastric ulcer | 5(6.25) | 12(15.00) | |
| Erosion | 10(12.50) | 20(25.00) | |
| Malignancy | 3(3.75) | 13(16.25) | |
| Varices | 14(17.50) | 10(12.50) | 0.343 |
| H.Pylori | 22(27.50) | 14(17.50) | |
| Others | 8(10.00) | 5(6.25) | |
| Bleeding diathesis | 4(5.00) | 6(7.50) | |
| Telangiectasia | 2(2.50) | 7(8.75) | |

| DUODENUM (n=80) | | | |
|---|---|---|---|
| Ulcer | 18(22.50) | 28(35.00) | 0.171 |
| Erosion | 8(10.00) | 12(15.00) | |
| Malignancy | 1(1.25) | 4(5.00) | |

## DISCUSSION

The present study compared the clinical and endoscopic profile of acute upper gastrointestinal bleeding between patients aged <60 years and ≥60 years. The mean age was 53.39 ± 18.66 years. The 60–69 years age group formed the largest proportion of patients. Males were predominant. The main finding was that younger patients had more liver disease, alcohol use and variceal lesions. Elderly patients had more diabetes, hypertension, cardiac disease and a higher proportion of non-variceal lesions like gastric erosions, gastric malignancy and duodenal ulcer.

The age and sex pattern in the present study is similar to many hospital-based studies from South Asia. Raj et al. studied 141 patients with suspected UGIB and reported a mean age of 48 ± 14 years with 81.6% males.[9] Surendran and Kumar reported mean age of 53.5 ± 13.17 years and 77.5% males in a Southern Indian study.[10] Sharma et al. from Nepal also reported male predominance of 73.08% with mean age of 49.95 ± 17.31 years.[11] These findings support that UGIB is still commonly seen in middle-aged and elderly male patients in this region. This may be due to higher alcohol exposure, liver disease, smoking and delayed health-seeking in males.

In the present study, liver disease was more common in younger patients than elderly patients (68.75% vs 45.00%; p=0.004). Alcohol use was also higher in younger patients (48.75% vs 22.50%; p=0.001). This supports the variceal pattern seen in the younger group. Yadav et al. also compared patients aged <60 years and ≥60 years and found that variceal bleeding was more frequent in younger patients, while peptic ulcer and malignancy-related bleeding were higher in elderly patients.[12] Raj et al. reported chronic liver disease as the commonest comorbidity in UGIB (28.4%).[9] Karanth et al. also found that alcohol use and cirrhosis were important risk factors in a tertiary care population, especially in the armed forces hospital group where alcohol use was 62.83% and past cirrhosis was 34.5%.[13] These findings are close to the present study and suggest that portal hypertension remains an important cause of UGIB in younger adults in Indian settings.

The elderly group had more diabetes mellitus (27.50% vs 3.75%; p<0.001), cardiac disease (22.50% vs 1.25%; p<0.001) and hypertension (30.00% vs 5.00%; p<0.001). This was expected because metabolic and cardiovascular diseases increase with age. Older patients also commonly receive antiplatelet drugs, anticoagulants and NSAIDs. These drugs can increase mucosal injury and bleeding risk. Menichelli et al. noted that older patients are more vulnerable to gastrointestinal bleeding because of comorbid illness and polypharmacy, especially antiplatelet and anticoagulant use.[14] Capela et al. also studied anticoagulant users with non-variceal UGIB and reported that early endoscopy was associated with higher endoscopic treatment rate and shorter hospital stay.[15] This supports the need for early risk assessment in elderly UGIB patients.

Hematemesis and melena were the common presenting symptoms in both groups. Hematemesis was seen in 78.75% of younger patients and 66.25% of elderly patients. Melena was seen in 72.50% and 58.75% respectively. Raj et al. reported hematemesis in 68.1% and melena in 53.9% of patients.[9] Surendran and Kumar reported hematemesis in 41.3% and combined hematemesis with melena in 33.3%.[10] Sharma et al. reported hematemesis in 44.21%, melena in 24.24% and both symptoms in 30.48%.[11] The present study showed a higher symptom burden, especially in younger patients. This may be related to more variceal bleeding and referral of symptomatic patients to a tertiary centre.

The endoscopic profile showed a clear age-related difference. Esophageal varices were more common in younger patients (62.50%) than elderly patients (46.25%). This agrees with the higher liver disease and alcohol use in the younger group. Surendran and Kumar reported portal hypertension-related gastric and esophageal varices as the commonest endoscopic cause of UGIB (51.4%).[10] Sharma et al. also reported varices as the most common endoscopic finding (39.39%), followed by ulcers (15.51%).[11] Raj et al. found esophageal varices in 52.9% of patients undergoing endoscopy.[9] These studies support the present finding that variceal bleeding remains a major cause of UGIB in this region.

In elderly patients, non-variceal lesions were more frequent. Gastric erosions were seen in 25.00% of elderly patients compared with 12.50% in younger patients. Gastric malignancy was also higher in elderly patients (16.25% vs 3.75%). Duodenal ulcer was seen in 35.00% of elderly patients and 22.50% of younger patients. This pattern is clinically important. Elderly patients usually have more mucosal vulnerability, drug exposure and comorbid disease. Chakma et al. from North-Eastern India reported peptic ulcer disease as the commonest cause of UGIB (31.38%), followed by erosive gastritis (23.94%).[16] Karanth et al. reported gastritis in 66.67% and esophageal carcinoma in 17.24% among patients attending a tier 3 civil hospital.[13] Emektar et al. studied geriatric patients and found gastric or duodenal ulcer as the commonest cause of bleeding in 53.9%.[17] These findings support the higher non-variceal and malignancy-related lesions in the elderly group.

The higher malignancy rate in elderly patients in the present study needs attention. Esophageal

malignancy was 10.00% in elderly patients compared with 2.50% in younger patients. Gastric malignancy was 16.25% in elderly patients compared with 3.75% in younger patients. Karanth et al. reported gastric carcinoma in 8.05% and esophageal carcinoma in 17.24% in their civil tertiary care group.[13] This suggests that UGIB in elderly patients should not be assumed to be only ulcer or drug-related bleeding. Careful endoscopic inspection and biopsy from suspicious lesions are required.

The present findings have practical relevance. Younger patients with UGIB should be assessed early for liver disease, portal hypertension and variceal bleeding. Elderly patients need detailed review of comorbidities, NSAID use, antiplatelet use and anticoagulant use. They also need careful evaluation for ulcer disease, erosive mucosal disease and malignancy. Early endoscopy remains central in both groups because it gives diagnosis and also allows therapeutic intervention. The age-based difference seen in this study can help in early clinical suspicion and triage, but treatment should still be guided by hemodynamic status and endoscopic findings.

Overall, the study shows two different clinical patterns of UGIB. Younger patients had a predominantly portal hypertension-related pattern. Elderly patients had a more comorbidity-linked and non-variceal pattern, with higher erosions, ulcers and malignancy. This finding is consistent with recent Indian and regional studies. The study adds useful local data from Assam Medical College and Hospital. Larger multicentric studies with drug history, severity scores, transfusion requirement, rebleeding and mortality data can further strengthen these observations.

## CONCLUSION

The present study showed clear age-related differences in the endoscopic profile of acute upper gastrointestinal bleeding. Younger patients had higher liver disease, alcohol use and esophageal varices, suggesting a predominantly portal hypertension-related bleeding pattern. Elderly patients had higher diabetes, hypertension and cardiac disease, with more gastric erosions, duodenal ulcers and malignancy, suggesting a more comorbidity-related non-variceal bleeding pattern. These findings indicate that age, comorbidity profile and risk factors should be considered during early assessment of UGIB. Timely endoscopy remains essential for diagnosis, risk stratification and appropriate therapeutic intervention in both younger and elderly patients.

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