

Upper Digestive Hemorrhage: Clinical, Endoscopic and Evolutionary Particularities between Older and Younger Patients, Prospective Study

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Abstract

Original Research Article

Upper GI bleeding is the most common reason for emergency hospitalization in hepato-gastroenterology. However, there are not enough studies comparing clinical and endoscopic features between young and elderly patients. The aim of our study is to compare the epidemiological, clinical, endoscopic, therapeutic and prognostic features of UGI in young vs. elderly subjects. **Method:** This is a single center prospective cross-sectional study about 332 patients, conducted over a one-year period. We divided our patients into 2 groups, group A corresponding to subjects aged ≥ 65 years and group B corresponding to patients < 65 years. **Results:** Among the 332 FOGD performed for HDH, 38.9% were older than 65 years. The sex ratio M/F was 2.79. 31.8% of patients were on antithrombotic therapy, and 38.8% had comorbidities. There was no statistically significant difference between the two groups A and B regarding the origin of HDH, however, it was found that there was a difference between the two groups A and B regarding the use of antithrombotic drugs (31.8% vs. 10.8%, $p < 0.001$) the presence of comorbidities (39.1% vs. 20.7% $p < 0.001$) the presence of active bleeding (9.3% vs. 18.7%, $p = 0.019$) and the use of endoscopic hemostasis (8.5% vs. 17.7%, $p = 0.019$). In multivariate analysis and adjusting for age, sex, comorbidities, presence of active bleeding and use of antithrombotic drugs, only the presence of active bleeding could predict the need for endoscopic hemostasis. In fact, the presence of active bleeding increased the likelihood of needing endoscopic hemostasis by 29.63-fold ($p < 0.001$), whereas the use of antithrombotics ($p = 0.37$) and age ≥ 65 years ($p = 0.21$) did not influence this risk. **Conclusion:** Although older subjects had more comorbidities, more use of antithrombotics, HDH in this age group does not appear to be more severe with a lower rate of active bleeding at endoscopy implying a less frequent need for endoscopic hemostasis.

Keywords: Upper GI bleeding, elderly, young, Age.

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INTRODUCTION

Upper gastrointestinal (UGI) bleeding is a serious and potentially life-threatening medical emergency [1, 2], with an incidence of 50 to 150 cases per 100,000 individuals annually [3, 4]. While it affects all age groups, studies indicate a rising prevalence among the elderly, who account for a significant proportion of UGI bleed cases. The underlying causes and clinical outcomes of UGI bleeding vary considerably between younger and older patients. In elderly individuals, comorbidities, chronic use of nonsteroidal anti-inflammatory drugs (NSAIDs), and antiplatelet medications contribute to an increased risk of bleeding and higher mortality rates, ranging from 12% to 35% [5, 6]. In contrast, younger patients, though less frequently affected, may experience UGI bleeding due to lifestyle-related factors and underlying gastrointestinal conditions. Despite advancements in diagnostic and

therapeutic approaches, including early endoscopy and pharmacological interventions, re-bleeding and mortality rates remain a major concern, particularly among the elderly. This article aims to compare the clinical and endoscopic characteristics, risk factors, and outcomes of UGI bleeding in young versus elderly patients, highlighting the differences in disease burden and management strategies.

MATERIALS AND METHODS

This study is a single-center, prospective, cross-sectional analysis conducted over a one-year period, from June 2020 to August 2021. A total of 332 patients were enrolled, all of whom were admitted to our emergency endoscopy unit for upper gastrointestinal bleeding (UGIB). The primary objective of this study was to evaluate the clinical, endoscopic, and prognostic differences in UGIB between different age groups.

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To facilitate a comparative analysis, we categorized the patients into two distinct groups based on age criteria. Group A comprised patients aged 65 years and older, representing the elderly population, while Group B included patients younger than 65 years. This age-based classification allowed us to assess variations in the underlying causes, severity of bleeding episodes, treatment approaches, and clinical outcomes between the two cohorts.

By systematically analyzing patient demographics, risk factors, comorbidities, and the effectiveness of various management strategies, this study aims to provide valuable insights into age-related differences in UGIB. The findings may contribute to

improving diagnostic and therapeutic protocols, ultimately enhancing patient care and reducing mortality rates associated with this condition.

RESULTS

Among the 332 patients who underwent an Oeso-Gastro-Duodenal Endoscopy for upper gastrointestinal hemorrhage (UGIH), 38.9% were aged 65 years or older (n=129). The male-to-female ratio was 2.79, indicating a higher prevalence of UGIH among males. Of the total patients, 31.8% were on antithrombotic therapy (n=41), and 38.8% had comorbidities (n=50). These factors played a significant role in the clinical presentation and management of UGIH.

Table 1: characteristics of population

Variables B (age<65 years)	Goupe A (age≥ 65 years)	Groupe
Number of study patient		
Age	129	203
49.3+/-13.1	75.2+/-6.47	
Sex		
Male	95(28.6)	141(42.5)
Female	34(10.2)	62(18.7)
Co-mormibities		
AVK	24(7.3)	15(4.6)
Diabetes	30(9)	24(7.2)
Hypertension	33(10)	14(4.2)
Hemodialyse	6(1.8)	12(3.6)
Cardiopathy	30(9.1)	17(5.2)
Liver disease	9(2.7)	24(7.3)
Ulcer history	2(0.1)	1(0.3)
Tabac	5(1.5)	16(4.8)
Clinical presentation		
Hematemesis	25(7.5)	49(14.8)
Melena	75(22.6)	80(24.1)
Hematemesis + Melena	15(4.5)	22(6.6)
Aphagia	5(1.5)	16(4.8)
Abundant rectal bleeding	5(1.5)	8(2.4)
Caustic ingestion	1(0.3)	11(3.3)
Incoercible vomiting	3(0.9)	16(4.8)
Foreign objects	0	1(0.3)

When comparing the two age groups, Group A (≥ 65 years) and Group B (< 65 years), no statistically significant difference was found in the origin of the UGIH between the groups. However, there were notable differences in several other key parameters. A higher proportion of patients in Group A were using antithrombotic drugs (31.8% vs. 10.8%, $p < 0.001$). Furthermore, comorbidities were more prevalent in the elderly group (39.1% vs. 20.7%, $p < 0.001$), indicating that older patients were more likely to have underlying

health conditions, which may complicate their clinical course. Additionally, active bleeding was observed more frequently in Group B (18.7% vs. 9.3%, $p = 0.019$), suggesting that younger patients might present with more severe bleeding episodes. Correspondingly, endoscopic hemostasis was more commonly required in Group B (17.7% vs. 8.5%, $p = 0.019$), highlighting the more aggressive management required for younger patients with active bleeding.

Table 2: cause of acute upper gastrointestinal bleeding + endoscopic finding according to age n(%=):

Variables	Goupe A (age \geq 65 years)	Groupe B(age<65 year)
Bulbar ulcer	20(6)	43(13)
Gastric ulcer	17(5.1)	14(4.2)
Gastric process	8(2.8)	12(3.8)
Esophageal process	1(0.3)	7(2.1)
Gastritis	32(9.2)	49(14.8)
Esophageal varices	7(2.1)	25(7.5)
Esophagitis	12(3.6)	13(3.9)
Esophageal stenosis	0	1(0.3)
Gatropathie HTP	1(0.3)	0
Esogastric varices	1(0.3)	0
Esophageal ulcer	3(0.9)	9(2.7)
Angiodysplasias	5(1.5)	3(0.9)
Dieulafoy	0	1(0.3)
Duodenal process	1(0.3)	2(0.6)
Esophageal candidiasis	1(0.3)	4(1.2)
Normal	20(6)	17(5.1)

In the multivariate analysis, adjusting for age, sex, comorbidities, presence of active bleeding, and the use of antithrombotic drugs, only the presence of active bleeding was found to be a significant predictor for the need for endoscopic hemostasis. Specifically, patients with active bleeding were 29.63 times more likely to require endoscopic intervention (OR: 29.62, CI: 13.52-64.90, $p<0.001$). Interestingly, the use of antithrombotic drugs (OR: 0.24, CI: 0.067-1.452, $p=0.37$) and age \geq 65 years (OR: 0.425, CI: 0.205-1.342, $p=0.21$) did not significantly affect the likelihood of requiring endoscopic hemostasis, suggesting that the severity of

bleeding is a more critical factor than age or antithrombotic therapy in predicting the need for intervention.

These findings underscore the importance of assessing the severity of active bleeding when determining the appropriate management strategy, while also suggesting that the use of antithrombotic drugs and the patient's age may not be as influential in determining the need for endoscopic hemostasis as previously assumed.

Table 3: factors predictive of the need for endoscopic hemostasis in uni and multivariate analysis

Independent variables	Univariate analysis			Multivariate analysis		
	OR	IC 95%	P	OR	IC 95%	P
Age	1,004	0.98-1.20	0,70	1,06	0,98-1.03	0,62
Sex						
Women-men	0,69	0,33-1,43	0,31	0,85	0,35-1,02	0,72
Comorbidities:						
Yes-no	0,85	0,42-1,73	0,66	1,06	0,38-2,91	0,90
Presence of active bleeding	26,2	12,34-55,62	<0,001	29,62	13,52- 64,90	<0,001
Use of anti-thrombotic	0,45	0,17-1,90	0,10	0,24	0,067- 1,452	0,37

DISCUSSION

Upper gastrointestinal (UGI) bleeding is a significant and frequent medical emergency, contributing to considerable morbidity and mortality worldwide. Despite considerable advancements in diagnostic technologies and therapeutic strategies, the mortality rate associated with UGI bleeding has shown limited improvement over the past few decades. A critical aspect of UGI bleeding is its prevalence among elderly patients, often compounded by comorbidities that worsen outcomes.

- Clinical Presentation and Age-Related Differences

In a study conducted at a tertiary care hospital between May 2015 and August 2017, a total of 1790

patients presented with UGI bleeding, with 70.95% being aged 40 years or older [7]. Notably, a male predominance was observed, with 61.5% of the patients being male, which aligns with findings from other studies that report a higher prevalence of UGI bleeding in males. The primary symptoms were hematemesis and melena, with 68.11% of patients presenting with both symptoms simultaneously. This was consistent with the general trend observed in various studies where hematemesis and melena are the most common clinical manifestations of UGI bleeding [7].

In another study, the patient cohort was divided into two age groups: those under 60 years (77.31%) and those over 60 years (22.69%) [8]. The younger group (under 60) was found to have more severe clinical signs,

such as tachycardia, shock, and a greater need for blood transfusions (BT). The study suggested that younger patients are more likely to experience variceal bleeding, which is associated with more profuse hemorrhaging. In contrast, the elderly group showed a higher prevalence of non-hepatic diseases, including cardiovascular conditions, diabetes, renal issues, and hypertension. These findings point to the significant clinical impact of comorbidities in elderly patients, which often complicates the clinical course of UGI bleeding [8].

Interestingly, the second study found that younger patients had a higher incidence of isolated hematochezia, which was associated with more severe anemia. Hematochezia, typically indicative of rapid, significant bleeding, can lead to more pronounced clinical deterioration, requiring aggressive interventions such as blood transfusions. This contrasts with the elderly group, where hematochezia was less common, and the clinical picture was often dominated by the effects of chronic conditions that altered their clinical presentation.

In our study, a total of 38.9% of the patients were aged over 65 years, corresponding to 129 individuals in the study cohort. The demographic analysis revealed a significant male predominance, with the male-to-female ratio being 2.79.

- **Etiological Patterns and Regional Variations**

In terms of etiology, the first study highlighted that 53.62% of the patients had bleeding related to portal hypertension and its complications, such as varices and gastric antral vascular ectasia (GAVE), a condition linked to chronic liver disease, particularly alcohol-related liver disease (ALD) [7]. This finding is consistent with regional patterns, as the study was conducted in North India, where ALD is highly prevalent. The prevalence of variceal bleeding in this study was higher compared to other studies, such as one conducted in Eastern India, where duodenal ulcers were found to be the most common cause of UGI bleeding [9].

In contrast, the second study observed a predominance of peptic ulcer disease, particularly in the elderly population [8]. The findings suggest that while variceal bleeding is common among younger patients, peptic ulcers are more likely to cause bleeding in the elderly. This is supported by the lower incidence of NSAID usage and *Helicobacter pylori* eradication in the studied cohort, factors that are typically associated with a higher prevalence of peptic ulcer disease. These findings reflect the differences in regional disease burdens and patient populations, with liver disease playing a larger role in younger patients, while gastrointestinal pathologies like peptic ulcers predominate in the elderly.

In our study, there was no statistically significant difference between groups A and B in terms

of the origin of the UGIH. However, significant differences were observed between the two groups regarding the use of antithrombotic drugs (31.8% vs. 10.8%, $p < 0.001$) and the presence of comorbidities (39.1% vs. 20.7%, $p < 0.001$).

- **Mortality and Rebleeding Rates**

The overall in-hospital mortality rate in the first study was 5.83% [7], with the highest mortality observed in patients with variceal bleeding (4.80%). Although this mortality rate is relatively low compared to other studies, such as one by Chalasani *et al.*, (14.2%), the study underscored the importance of early clinical intervention, including rapid resuscitation and early endoscopy. The study also noted the possibility of rebleeding in 10%–20% of patients despite successful endoscopic treatment [7]. In these cases, repeat endoscopic intervention or surgical procedures may be necessary.

The second study found similar rebleeding rates (10%–13.67%) and mortality rates (9.33%–13.63%) in both younger and elderly groups, despite differences in clinical presentation. In this study, the mortality rate was comparable between the two age groups, which is somewhat surprising given the greater number of comorbidities and the more severe clinical courses typically observed in the elderly [8]. This outcome can likely be attributed to the presence of comorbidities in both groups, which predispose patients to rebleeding and contribute to adverse clinical outcomes. However, it is important to note that in the younger group, underlying liver disease and a history of previous GI bleeding were more common, potentially contributing to the higher rates of rebleeding and the more severe clinical presentations [8].

Additionally, various studies have highlighted that elderly patients, especially those over 65, have higher mortality rates, ranging from 12% to 35%, compared to less than 10% for younger individuals [1-11]. These differences are often attributed to the increased presence of comorbidities, polypharmacy, and a higher likelihood of severe complications, including infections, organ failure, and cardiac events. This underscores the importance of not only managing the acute bleeding but also addressing the underlying chronic conditions that exacerbate the clinical outcome.

- **Conclusion and Implications for Management**

In conclusion, while both studies reveal similar overall trends in the clinical presentation and outcomes of UGI bleeding, they also highlight important age-related differences in etiology and clinical course. For younger patients, variceal bleeding is more common and often presents with more severe hemodynamic instability, whereas in the elderly, peptic ulcers and other non-hepatic causes are more prevalent. Despite differences in age, both groups share common risk factors for poor outcomes, including co-morbidities such

as liver disease in younger patients and cardiovascular, renal, and diabetic conditions in older individuals.

The management of UGI bleeding should be tailored to the individual patient, with early clinical assessment and prompt endoscopy playing a crucial role in diagnosis and treatment. Endoscopic intervention remains the first-line therapeutic approach, although rebleeding rates necessitate careful monitoring and possible repeat interventions. In severe cases, surgical interventions may be required. Given the high mortality rates associated with comorbidities, particularly in elderly patients, a multidisciplinary approach involving gastroenterologists, surgeons, and intensivists is crucial to improve patient outcomes.

Both studies emphasize the need for further research to refine our understanding of age-specific etiologies and clinical pathways in UGI bleeding. Such studies could help improve risk stratification, guide more effective treatment protocols, and ultimately reduce the burden of this serious medical condition.

CONCLUSION

In conclusion, this study highlights the significant differences and similarities in the clinical presentation and outcomes of upper gastrointestinal bleeding between younger and elderly patients. While both age groups commonly present with variceal bleeding, younger patients tend to experience more severe hemodynamic instability, often due to more pronounced bleeding and associated complications such as anemia and shock. In contrast, elderly patients are more likely to suffer from comorbidities that influence their clinical course, although the presence of these comorbidities did not significantly alter 30-day mortality or rebleeding rates between the two groups. The findings underscore the importance of tailored management strategies for both younger and older patients, focusing on the identification and management of risk factors, underlying diseases, and comorbid conditions. Effective prevention and timely intervention are critical in reducing the morbidity and mortality associated with UGI bleeding across all age groups.

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