

Upper Gastrointestinal Bleeding in Patients with Chronic Renal Failure: What are the Particularities?

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Abstract

Introduction: Upper Gastrointestinal bleeding (UGIB) is a major cause of mortality in patients with renal failure. The aim of our study is to determine the epidemiological, lesional and prognostic profile of UGIB in chronic kidney disease (CKD) patients. **Materials and Methods:** This was a single-center study conducted from September 2017 to August 2023, including all patients with CKD admitted to the emergency department for upper GI bleeding who underwent Esogastroduodenoscopy (EGD). The various data were collected from endoscopy registries. **Results:** Of 662 patients admitted via the emergency department for UGIB, 59 cases of CKD (8.9%) were included, of which 43 cases were at the hemodialysis stage (72.88%). The mean age was 57.17 years, with a male predominance (sex ratio M/F 1.55). Isolated melena was the main reason for admission in 35 cases (59.32%), followed by hematemesis with melena in 9 cases (15.25%), and hematemesis without melena in 10 cases (16.94%), while massive rectal bleeding was present in 5 cases (8.47%). Esogastroduodenoscopy established the etiological diagnosis of UGIB in 40 cases (67.8%) and revealed the following lesions: 25 cases of peptic ulcer (62.5%): 2 cases (8%) of antral gastric ulcer, 1 case (4%) of Forrest IIc bulbar ulcer, 12 cases (48%) of Forrest III bulbar ulcer and 10 cases (40%) of ulcerative colitis, 12 cases (30%) of gastric and duodenal angiodysplasia, 2 cases (5%) of Los Angeles grade B and C esophagitis and 1 case (2.5%) of grade II of oesophageal varices ligatured in an unknown patient with portal hypertension. EGD was negative in 32.2% of cases. **Conclusion:** Upper GI bleeding is common in patients with chronic renal failure and is primarily caused by peptic ulcer disease and angiodysplasia.

Keywords: Renal failure, Upper Gastrointestinal bleeding, chronic kidney disease (CKD), endoscopy.

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INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is an often overlooked but important medical issue, leading to high rates of morbidity and mortality in people with chronic kidney disease (CKD). Several studies have drawn attention to the increasing prevalence of GI bleeding in patients with CKD [1-4].

The exact cause of bleeding in CKD patients remains unclear. Various studies have explored the risk factors for UGIB in patients undergoing hemodialysis, with gastric ulcers emerging as a predominant source of bleeding. Additionally, factors such as the use of anticoagulants, platelet dysfunction, and anticoagulation during dialysis have been proposed as potential contributors [5, 6]. The aim of our study is to determine

the epidemiological, lesional and prognostic profile of UGIB in chronic kidney disease (CKD) patients.

MATERIALS AND METHODS

This was a single-center study conducted from September 2017 to August 2023, including all patients with CKD admitted to the emergency department for upper GI bleeding who underwent EGD. The various data were collected from endoscopy registries.

RESULTS

Of 662 patients admitted via the emergency department for UGIB, 59 cases of CKD (8.9%) were included, of which 43 cases were at the hemodialysis stage (72.88%). The mean age was 57.17 years, with a male predominance (sex ratio M/F 1.55).

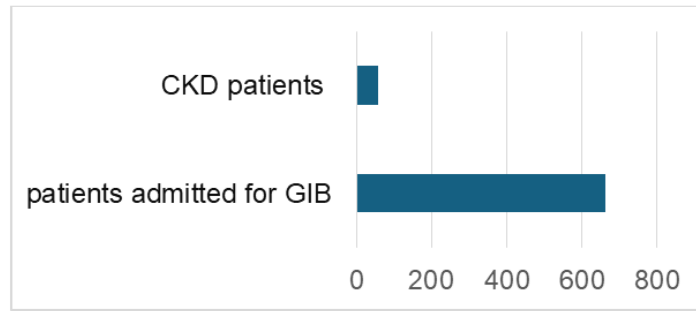


Figure 1: Patients with CKD admitted for UGIB

In terms of comorbidities, 28% of the cases had a history of arterial hypertension, 25% had diabetes, and 15% were taking non-steroidal anti-inflammatory drugs.

Isolated melena was the main reason for admission in 35 cases (59.32%), followed by

hematemesis with melena in 9 cases (15.25%), followed by hematemesis without melena in 10 cases (16.94%), while massive rectal bleeding was present in 5 cases (8.47%).

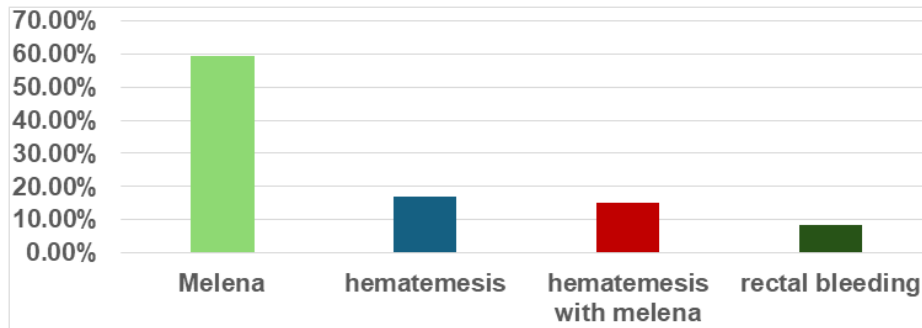


Figure 2: Clinical presentation

EGD established the etiological diagnosis of UGIB in 40 cases (67.8%) and revealed the following lesions: 25 cases of peptic ulcer (62.5%), (2 cases (8%) of antral gastric ulcer, 1 case (4%) of Forrest IIc bulbar ulcer, 12 cases (48%) of Forrest III bulbar), 10 cases (40%) of ulcerative bulbitis, 12 cases (30%) of gastric

and duodenal angiodysplasia, 2 cases (5%) of Los Angeles grade B and C esophagitis and 1 case (2.5%) of grade II of oesophageal varices ligatured in an unknown patient with portal hypertension. EGD was negative in 32.2% of cases.

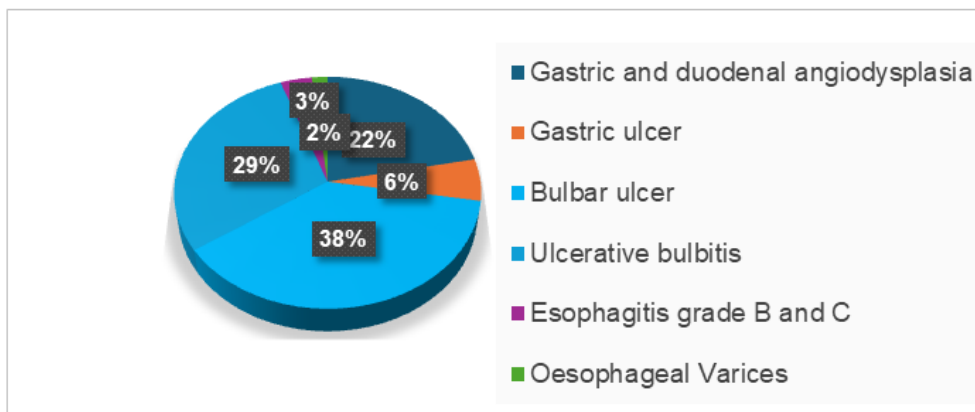


Figure 3: Results of endoscopy

DISCUSSION

Multiple studies [7-10] suggest that the incidence of upper gastrointestinal bleeding (UGIB) rises in cases of renal failure, and this increase is further exacerbated by hemodialysis. A recent meta-analysis

conducted by Lin Y and al. reported a 2% prevalence of upper GIB in Chronic Kidney Disease (CKD) patients [6]. Our study highlights the fact that GIB occurs in many patients with CKD with an incidence of 8.9%.

As the chronic renal disease sex incidence is equal for men and women, the sex incidence for UGIB in renal patients is similar for men and women [7]. The majority of patients in our study were men. Age group is directly proportional to the risk of bleeding in renal patients, as seen in our study group.

The specific cause behind the elevated mortality in individuals with Gastrointestinal Bleeding (GIB) and CKD remains uncertain and is likely influenced by multiple factors [11]. CKD patients are generally frail and often have other health problems, such as diabetes and cardiovascular disease. hemodialysis was strongly associated with GIB, it may be due to heparin use and chronic anticoagulation from hemodialysis [6, 12] or antithrombotic medications with the management of other cardiovascular comorbid illnesses. In addition, patients with CKD may have inadequate erythropoietin production, leading to anemia. In such cases, GIB can have severe consequences, especially in patients who are already anemic.

Peptic ulcer disease (PUD) is the most common cause of UGIB. A recent study reported a high incidence of PUD in patients with CKD [13], which is consistent with our study.

Helicobacter pylori infection and NSAIDs are generally the most common causes of gastroduodenal ulcers [14, 15]. Several factors, including Hemodialysis, patient access (inpatient or outpatient) and clopidogrel use, also affected the risk of peptic ulcer disease in CKD patients.

It is well established that eradication therapy for *H. pylori*-infected patients prevents the onset of peptic ulcers. In patients who have undergone successful *H. pylori* eradication, upper gastrointestinal (GI) bleeding is predominantly caused by vascular lesions. Conversely, in patients without a history of *H. pylori* infection, upper GI bleeding is primarily due to ulcers and erosions [16, 17].

Although studies show that angiodysplasia is a prevalent and significant factor contributing to gastrointestinal GIB, particularly among individuals with CKD [18, 19]. Angiodysplasia bleeding was reported to be associated with chronic renal failure, Von Willebrand's disease, aortic stenosis, cirrhosis, and pulmonary disease, but the actual etiology is unknown [8]. This aligns with our study, where angiodysplasia was the second most common cause of GIB, following PUD.

The findings of this study have several clinical implications. Firstly, patients with chronic kidney disease (CKD) are at an increased risk for gastrointestinal bleeding (GIB). To reduce this risk, it is important to implement measures such as screening for GIB risk factors and modifying management strategies

for people identified as being at high risk. For example, there may be a role for proton pump inhibitor medication in some patients who are at risk of bleeding. Furthermore, patients at a high risk of bleeding benefit from less aggressive antithrombotic medication. It is well-established that antithrombotic medications, including antiplatelet and anticoagulant therapies, heighten the predisposition to GIB, thus necessitating cautious management in this population [6, 20].

CONCLUSION

Upper gastrointestinal bleeding has a high rate of occurrence in CKD patients. Studies identify ulcers and angiodysplasia as common causes of UGIB, which is similar to the current study.

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