



## UPPER GASTROINTESTINAL ENDOSCOPIC FINDING IN PATIENTS WITH CHRONIC KIDNEY DISEASE AT A TERTIARY CARE CENTRE: A RETROSPECTIVE ANALYSIS.

### GASTROENTEROLOGY

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### ABSTRACT

**Introduction:** Chronic kidney disease is a worldwide health problem. Chronic Kidney Disease is associated with several abnormalities in the gastrointestinal tract involving all its segments. Many of these abnormalities produce serious life threatening situation, few produce serious important clinical symptoms, while others produce only subclinical functional alterations. These findings suggest that neither hyperacidity, hypergastrinemia nor H. pylori play a major role in the pathogenesis of uremic gastro duodenal lesions. Impaired mucosal cytoprotection has been postulated but not proven.

**Materials and Methods:** A total number of 230 chronic kidney disease (CKD) patients admitted to Govt: Medical College Jammu between March 2017 to February 2018 was selected in this study.

**Results:** The majority of the patients belong to 21-30 years age group, of which 60 were males. There were 54 patients in 31-40 years age group with males far more than females. UGI finding were seen in 172(74.8) patients. The most common lesion seen was Erosive Gastritis (28.7%) followed by Erosive esophagitis (27.4%) and then Normal finding (25.1).

**Conclusion:** Majority of the patients of CRF have UGI mucosal lesions on endoscopic evaluation. Erosive mucosal disease is the most common form of GI pathology in CRF.

### KEYWORDS

Chronic kidney disease, Esophagitis, Gastrointestinal complications, Upper gastrointestinal endoscopy, Upper gastrointestinal lesions, Gastritis

### INTRODUCTION

Chronic Kidney Disease is associated with several abnormalities in the gastrointestinal tract involving all its segments. Many of these abnormalities produce serious life threatening situation, few produce serious important clinical symptoms, while others produce only subclinical functional alterations. Several of the clinical symptoms of uremia can be directly attributed to the underlying pathological processes. (1) The pathogenesis of uremic lesions is not clearly understood. Fasting serum gastrin is commonly elevated in CKD patients (2), since it is cleared from the serum by the renal cortex. Levels of gastrin correlate with degree of renal insufficiency and it often returns to normal after transplantation.(3,4,5) Levels in renal failure are inversely related to the gastric acidity, suggesting elevated gastrin levels may represent a response to hypo chlorhydria rather than a cause of gastro duodenal lesions.(4,6) This may explain the lack of correlation between the acid secretion and the presence of UGI lesions, since both basal output and output by stimulation can be normal, high or low.(7,8)

### MATERIALS AND METHODS

A total number of 230 chronic kidney disease (CKD) patients admitted to Govt Medical College Jammu between March 2017 and February 2018 were selected in this study.

#### Inclusion Criteria

- A. Patients with serum creatinine above 3 mg % with
1. Abnormal findings on renal ultrasound - asymmetric kidney size, small kidney. (<8 cm) or large polycystic kidney/increased echogenicity.  
AND/OR
  2. Increased serum creatinine with no improvement for >3 months.  
AND/OR
  3. Uremic symptoms over 3 months with increased serum creatinine.  
AND/OR
  4. Other - anemia, hyperphosphatemia, and hypocalcemia.
- B. Patients with age varying from 10 to 80 years.
- C. Both male and female patients.
- D. Patients on conservative treatment/hemodialysis (HD)/ continuous ambulatory peritoneal dialysis (CAPD).

#### Exclusion Criteria:

- Patients of CRF with:
1. Diabetes mellitus
  2. Chronic analgesic intake, i.e., nonsteroidal antiinflammatory drugs
  3. H/O previous APD.

All the CRF patients with the above characteristics are evaluated for UGI manifestations using flexible fiber-optic endoscopy of the Upper GIT apart from clinical history taking, examination, and various investigations.

### RESULTS

The majority of the patients belong to 21-30 years age group of which 60 were males. There were 54 patients in 31-40 years age group with males far more than females. There were 34 and 18 patients in each group, i.e., 5th and 6th decade. There were 18 and 10 patients in age groups between 61-70 and more than 71 years, respectively. There is male preponderance in all categories (Table 1).

Out of the 230 patients, males are 202(87.82%) and females are 28(12.17%)(Table 2). About 172(74.8) patients, out of the 230, have UGI involvement on endoscopic examination. Remaining 58(25.2) patients have normal UGI mucosa (Table 3).

About 98 patients, out of the 230 have UGI symptoms such as dyspepsia, nausea, and vomiting. Remaining 132 patients have no UGI symptoms (Table 4). Among the 98 UGI symptomatic patients, 70 have positive UGI findings (71.43% of the symptomatics). Out of 132 patients who have no UGI symptoms, 102 showed UGI lesions (77.3% of the asymptomatics) (Table 5).

Erosive gastritis, either antral or fundal is the predominant UGI lesion, found on endoscopy in 28.7% of patients. Erosive esophagitis and duodenal ulcer occupy the next place, with 27.4% and 17.4%. Gastric ulcer is seen in 13.4% of cases. Pangastritis involving entire stomach is seen in 3.5% of cases. (Table 6)

The majority of the patients, 146 out of 230, belong to Stage V CKD, of which 106 patients showed UGI lesions. 50 patients belong to Stage IV CKD of which forty patients have positive UGI findings. Rest of the patients is in Stage III CKD (Table 7).

**TABLE 1: AGE AND SEX DISTRIBUTION**

Age Group (yrs)	Number Of Patients (n)			Percentage (%)
	Male	Female	Total	
21-30	60	8	68	29.6
31-40	48	6	54	23.5
41-50	41	5	46	20

51-60	30	4	34	14.8
61-70	15	3	18	7.82
>71	8	2	10	4.35
TOTAL	202	28	230	100

**TABLE 2: SEX DISTRIBUTION OF CKD PATIENTS.**

SEX	NUMBER OF PATIENTS(N)	PERCENTAGE (%)
MALES	202	87.82
FEMALES	28	12.17
TOTAL	230	100

**TABLE 3: PERCENTAGE OF UGI FINDING IN CKD PATIENTS.**

UGI FINDING	NUMBER OF PATIENTS(N)	PERCENTAGE (%)
PRESENT	172	74.8
ABSENT	58	25.2
TOTAL	230	100

**TABLE 4: UGI SYMPTOMATIC/ASYMPTOMATIC IN CKD PATIENTS**

UGI Symptoms	NUMBER OF PATIENTS(N)	PERCENTAGE (%)
PRESENT	98	42.6
ABSENT	132	57.3
TOTAL	230	230

**TABLE 5: PERCENTAGE OF VARIOUS UGI FINDING IN CKD PATIENTS.**

TYPE OF LEISON	NUMBER(N)	PERCENTAGE (%)
EROSIVE GASTRITIS	66	28.7
PAN GASTRITIS	8	3.5
PALE GASTRIC MUCOSA	5	2.2
EROSIVE ESOPHAGITIS	63	27.4
HIATUS HERNIA	9	3.9
GASTRIC ULCER	11	4.8
DUODENAL ULCER	10	4.34
NORMAL STUDY	58	25.1
TOTAL	230	100

**Table 6: UGI Findings In Patients With GIT Symptomatic And Asymptomatic in CKD Patients.**

CKD Patients	Positive (%)	Negative (%)	Total (%)
UGI Symptomatic	70(71.43)	28(28.57)	98(42.6)
UGI Asymptomatic	102(77.3)	30(22.7)	132(57.3)

**TABLE 7: UGI FINDINGS IN RELATION TO THE STAGE OF CKD.**

Stage Of CKD	Positive UGI Finding	Negative UGI Finding	Total
III	26	8	34
IV	40	10	50
V	106	40	146
TOTAL	172	58	230

## DISCUSSION

UGI tract disorders in patients with chronic kidney disease can be considered from two aspects:

Gastroesophageal dysmotility and mucosal lesions.

Gastroesophageal motility manifests as delayed gastric emptying and gastroesophageal reflux. These functional disorders are very common in adult patients. The other aspect of GI disorders in uremia is mucosal lesions such as esophagitis, gastritis, duodenitis, and peptic ulcer. Several previous studies showed that the gastric and duodenal lesions are the most frequent source of UGI hemorrhage. In this study, a total number of 230 patients with CKD Stages III-V (CRF) admitted in Govt. Medical Jammu were taken, and they were evaluated for UGI manifestations with reference to UGI endoscopy taking into consideration, the age, sex, presence or absence of UGI symptoms.

In this study, the age of patients ranged from 21 to 80 years, with the majority of 73.8% in the age group varying from 21 to 50 years. In a study conducted by Varma et al.(9) the age of the patients ranged from 17 to 70 years. In another study by Esfahani (10) done in 2007, ages of the patients were between 4 and 18 years. Number of male patients (87.82%) are far more than the female patients (12.17%) in this study which is similar to studies conducted by Esfahani (10).

Out of 230 patients, 172 patients (74.8%) showed that UGI

involvement. In a study conducted by Varma et al. out 92 patients 72% developed UGI lesions. . In a study of UGI endoscopic evaluation in CRF by Agrawal et al.(11) out 70 patients 95.7% patients showed UGI involvement. In this study, 26 patients (56%) presented with only 1 year duration of illness. This could be due to the fact that patients may be asymptomatic for a long period before the presentation.

Out of total 230, 166 patients (72.17%) have UGI symptoms (dyspepsia, heartburn, belching, epigastric pain, nausea, vomiting, and hematemesis). In a study of gastroduodenal lesions and Helicobacter pylori infection in HD patients by Al-Mueilo et al.(12) it was shown that GI abnormalities are common, even in the absence of symptoms. Moustafa and co-workers (13) reported that even asymptomatic patients (60%) had mucosal lesions in endoscopy of UGIT.

Among the isolated lesions erosive gastritis constitutes a major chunk of 28.7% (either fundal or antral gastritis). Gastric involvement in various forms (erosive gastritis, gastric ulcers, and angiodysplasia) constitutes the majority of UGI findings. In a study conducted by Varma et al.,3 gastritis was the major lesion 27%. Other lesions - duodenitis 14% gastroduodenitis 20%, telangiectasia in 4.3%, and peptic ulcer 6.5%. In the study by Esfahani,4 gastritis was the predominant one accounting for 60.8% other lesions - duodenitis 13%, gastroduodenitis 7.2%, peptic ulcer and esophago gastritis each 4.3%, esophagitis 3%. In another study by Agrawal et al.,5 UGI endoscopic involvement was seen in 95.7% patients.

Most of the patients, in our study, belong to Stage V CKD 63.4%, of which 72.6% have UGI involvement.

## CONCLUSION

Majority of the patients of CRF have UGI mucosal lesions on endoscopic evaluation.

Erosive mucosal disease is the most common form of GI pathology in CRF. Erosive gastritis as well as multiple sites of involvement of UGIT is the most common lesions.

Esophageal and duodenal involvement is less common than the gastric lesions.

No correlation could be made with GI symptoms to the patterns of GI findings on endoscopy.

Patients with chronic glomerulo nephritis and Stage V CKD showed predominant UGI involvement. No correlation could be made with age, sex, degree of dialysis control, and duration of azotemia to the presence or absence or the pattern of GI involvement in CRF.

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