

Original article:

Study of endoscopic findings in CKD patients with dyspepsia

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Abstract:

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. 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. Endoscopic and histological correlation exists in gastritis but not with duodenitis.

Materials and methods: Institutional Ethics Committee Clearance was obtained before start of work. All the patients were taken informed consent Marathi/English and evaluated according to Clinical Performa . Patients in Stage 3 to Stage 5 Chronic Kidney Disease(CKD) with dyspeptic symptoms and who are clinically stable. An intravenous catheter set was inserted for the administration of Buscopan and Diazepam if required. A lignocaine mouthwash was then given. Endoscopy was performed in all patients using Fujinon Epx-2200 light source and Fujinon EG-201 FP video gastroscop .

Results : As shown in table , in endoscopy 16 (40%) patients found to have Oesophagitis, Pan Gastritis was found in 21 (52.5%) cases, Antral gastritis was found in 12 (30%) cases and 14 (35%) cases had Duodenitis. Other findings are shown in table 10. Endoscopic Gastroscopy was normal in 7 (17.5%) cases while whole OGDscopy was normal 5 (12.5%) cases.

Conclusions: On endoscopy major finding was oesophagitis, pan Gastritis, antral gastritis and duodenitis.

Keywords: endoscopy, CKD

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 patients², 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}

Helicobacter pylori (*H. pylori*) which displace abundant urease activity, has been postulated to have casual role in both gastritis and peptic ulcer in CKD patients, although it has been refuted by subsequent studies.⁹ 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. Endoscopic and histological correlation exists in gastritis but not with duodenitis.⁸

Materials and methods

Institutional Ethics Committee Clearance was obtained before start of work. All the patients were taken informed consent Marathi/English and evaluated according to Clinical Performa

Inclusion criteria

Patients in Stage 3 to Stage 5 Chronic Kidney Disease(CKD) with dyspeptic symptoms and who are clinically stable.

Exclusion criteria

1. Patients in Stage 1 and Stage 2 CKD.
2. Patients in uremic encephalopathy presenting with symptoms/signs like seizures, muscular irritability or altered sensorium in which it is difficult to perform endoscopy.
3. Patients on Renal transplant as they are on immunosuppressives which can interfere with the study observations.
4. Causes of GI complaints in CKD patients other than uremia for e.g. drugs (aspirin, bisphosphonates, penicillamine, penicillin, cephalosporins, rifampicin, sulfa, phenytoin, chemotherapy), alcohol, smoking, radiotherapy, infections like CMV, HSV. Routine investigations included all the Lab investigations like Hemogram, Liver Function test, Renal Function Test, Urine Examination, 24 urinary protein, Stool Examination, ECG, ECHO, X-

Ray Chest and USG abdomen.

Endoscopy

An intravenous catheter set was inserted for the administration of Buscopan and Diazepam if required. A lignocaine mouthwash was then given. Endoscopy was performed in all patients using Fujinon Epx-2200 light source and Fujinon EG-201 FP video gastroscope .

The oesophagus, stomach, and duodenum were studied for mucosal changes and multiple biopsies from oesophagus, antrum, fundus, body of stomach and duodenum were taken for histopathological examination.

❖ Criteria For Endoscopic Diagnosis Of Esophagitis¹⁰

Esophagitis was diagnosed by the presence of erythema, white exudate bleeding, friability and presence of ulcers or erosions. Hiatus hernia was considered present if the gastric mucosa was observed more than 3 cm above the hiatus

❖ Criteria For Endoscopic Diagnosis Of Gastritis.

Gastritis was diagnosed by the presence of erythema, patchy edema, loss of shininess, granular unevenness of mucosa. Atrophic gastritis was diagnosed when the sub mucosal blood vessels were clearly seen without prior distention with air and was further characterized according to the areas involved. Antrum, body or fundus. Erosions were diagnosed by the presence of flat lesions having yellowish erythematous base surrounded by a narrow zone of erythema. Gastric ulcer was diagnosed by the presence of lesions having yellowish erythematous base with whitish covering exudate and slightly raised edges. Other abnormalities such as hemorrhagic spots, sub mucosal tumors were noted.

❖ **Endoscopic Criteria For The Diagnosis Of Duodenitis, Duodenal Ulcer** ¹¹

Duodenitis was diagnosed by erythema with intervening patches of pale mucosa termed as salt and pepper appearance. Duodenal ulcers and deformity were also noted. Nodular duodenitis was identified by the presence of small nodules or mucosal excrescences or hypertrophic folds (2-4 mm) in size.

Data analysis was done using the SPSS (Statistical Package for the Social Science) Version 17 for window.

Results

This study was consisting of clinical profile and laboratory profile of 40 patients suffering from chronic renal failure. The study also includes endoscopic finding of these patients and its correlation with clinical and laboratory findings.

Table 1: Endoscopic finding wise distribution of cases in study

	Cases (n=40)	%
Oesophagitis	16	40.0%
GERD	7	17.5%
Hiatus Hernia	3	7.5%
Pan Gastritis	21	52.5%
Antral Gastritis	12	30.0%
Hemorrhagic Gastritis	7	17.5%
Gastric Ulcer	4	10.0%
Duodenitis	14	35.0%
Duodenal Ulcer	2	5.0%
Normal OGDscopy	5	12.5%

As shown in table , in endoscopy 16 (40%) patients found to have Oesophagitis, Pan Gastritis was found in 21 (52.5%) cases, Antral gastritis was found in 12 (30%) cases and 14 (35%) cases had Duodenitis. Other findings are shown in table 10. Endoscopic Gastroscopy was normal in 7 (17.5%) cases while whole OGDscopy was normal 5 (12.5%) cases.

Table 2: Association between Endoscopic finding and CKD stage in study

Endoscopic finding	CKD stages						P value
	Grade 3 (n=2)	%	Grade 4 (n=14)	%	Grade 5 (n=24)	%	
Oesophagitis	1	50.0%	2	14.3%	13	54.2%	0.051
GERD	0	0.0%	0	0.0%	7	29.2%	0.059
Hiatus Hernia	0	0.0%	0	0.0%	3	12.5%	0.339
Pan Gastritis	0	0.0%	5	35.7%	16	66.7%	0.057
Antral Gastritis	2	100.0%	3	21.4%	7	29.2%	0.076
Hemorrhagic Gastritis	0	0.0%	3	21.4%	4	16.7%	0.746
Gastric Ulcer	0	0.0%	2	14.3%	2	8.3%	0.748
Duodenitis	1	50.0%	4	28.6%	9	37.5%	0.772
Duodenal Ulcer	0	0.0%	0	0.0%	2	8.3%	0.496
Normal OGDscopy	0	0.0%	4	28.6%	1	4.2%	0.253

Table compared findings of endoscopy with the grade of CKD. Oesophagitis was higher in grade 5 of CKD compared to grade 3 and grade 4 of CKD but this difference was not found statistically significant ($p>0.05$).

Similarly GERD and Hiatus Hernia were also found higher in Grade 5 of CKD compared to grade 4 and grade 5 of CKD but these difference were not found statistically significant ($p>0.05$).

Similarly all types of gastritis were also found higher in Grade 5 of CKD compared to grade 4 and grade 5 of CKD but these difference were not found statistically significant ($p>0.05$).

Duodenitis and duodenal ulcer were also found higher in Grade 5 of CKD compared to grade 4 and grade 5 of CKD but these difference were not found statistically significant ($p>0.05$).

Discussion

The present study was done on 40 patients in stage 3 to stage 5 of CKD having dyspeptic symptoms. The observations were made on clinical, laboratory, endoscopic and histopathological findings.

In the present study, out of 40 cases, Thirty one (77.5%) were males. The most common symptom was nausea which was present in 31 (80%) patients followed by vomiting (77.5%) and anorexia (67.5%). The least common presentation was heartburn which was found in only 20% of the patients. The distribution of the symptoms across all the 3 stages of CKD included in the study was almost similar. ($p>0.05$)

The most common cause of CKD was diabetes mellitus (65%) which was present in 37.5% cases as a single cause, while in 27.5% cases, diabetes mellitus was associated with hypertension. Similarly, hypertension was the sole causative factor in 35% cases.

Chronic Kidney disease(CKD) is associated with several diseases, due to a multifactorial damage that leads to a loss in function of all systems of the human beings. Gastrointestinal alterations are very common in these patients leading to multiple symptoms and it is confirmed by endoscopy that shows a large range of pathological changes. In the literature, there are many studies of prevalence of GI symptoms and endoscopic findings, and

different experiences and data have been documented.

Endoscopic findings and its association with CKD Stage

In the present study, Sixteen (40%) patients were found to have oesophagitis, GERD was seen in 7(17.5%) cases and hiatus hernia was found in 3(7.5%) cases. Pan gastritis was found in 21 (52.5%) cases, antral gastritis was found in 12 (30%) cases, hemorrhagic gastritis in 7(17.5%) cases and 14 (35%) cases had duodenitis. Endoscopy was normal in 5 (12.5%) cases.

The total incidence of patients who had peptic ulcer on endoscopy was 6(15%) in which 4 patients had gastric ulcer and 2 had duodenal ulcer. Rapid Urease test indicating H.pylori infection was positive in 3 out of 4 gastric ulcer

cases. Also it was positive in 1 out of 2 duodenal ulcer cases.

Oesophagitis was higher in stage 5 of CKD as compared to stage 3 and stage 4 of CKD but this difference was not found statistically significant. Similarly GERD and Hiatus Hernia were also found higher in stage 5 of CKD compared to stage 4 and stage 5 of CKD but these differences were not found statistically significant. Similarly, all endoscopic patterns of gastritis were also found to be higher in stage 5 of CKD compared to stage 4 and stage 3 of CKD but these differences were not found statistically significant.¹²

Conclusions

On endoscopy major finding was oesophagitis, pan Gastritis, antral gastritis and duodenitis.

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