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An Endoscopic Study for Gerd in Patients of CKD in North Indian Population-1

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Abstract

GERD and CKD are both highly prevalent clinical conditions, and several studies have suggested that the prevalence of GERD is significantly higher in the CKD population. The present study was conducted in Postgraduate Department of Medicine from December 2015 to March 2017. All patients were adults with eGFR < 60 ml/min for a duration of more than 3 months and radiologically and biochemically confirmed CKD. A total of 68 patients, of which 45 were males and 23 were females were subjected to UGIE after screening. In our study gastritis seen in 36.76% was the most frequent finding, followed by GERD 26.47% ; normal finding was found in only 32.35%. Hypertension found in 85.29% and anaemia in 80.88 were also very common findings. UGI endoscopy was abnormal in majority of the patients, both symptomatic and asymptomatic. UGIE abnormalities were found to be frequent enough for this investigation to be considered regularly in all symptomatic CKD patients, and even in CKD patients with no upper gastrointestinal symptom.

Keywords: GERD, CKD, UGIE.

Introduction:

GERD is a highly prevalent medical condition in the Western countries and in India; one recent study in South India found a prevalence rate of 22.2% [1].

CKD is also a highly prevalent clinical condition and is expected to rise in number fuelled by the slow epidemics of Diabetes and Hypertension sweeping the world, with India projected to become the ill-fated “Diabetes Capital” of the world. With advancement of renal replacement therapies and their wider availability, the number of End-Stage Renal Disease survivors is also on the rise.

CKD patients have upper gastrointestinal symptoms very commonly, and most studies have implicated that CKD is associated with gastrointestinal mucosal inflammatory changes and upper gastrointestinal symptoms attributable to these lesions.

This study was planned and executed to find out the association of reflux disease with CKD, in those patients with relevant symptoms and those without.

Aims and Objectives:

1. To study the upper gastrointestinal manifestation of Chronic Kidney Disease.
2. To assess the prevalence of GERD in Chronic Kidney Disease patients on basis of endoscopic examination.

Material & Methods:

This present study was conducted in K.P.S. Institute and Postgraduate Department of Medicine, L.L.R.H. Kanpur from December 2015 to March 2017.

A total of 68 patients of Chronic Kidney Disease who were admitted in Medicine Department from OPD or Emergency Department were screened for the study.

Inclusion Criteria:

Following patients of kidney disease were included in our study with informed consent

- All patients having documented eGFR < 60 ml/min (by the MDRD GFR equation) for a duration of more than 3 months AND.
- Radiological / Pathological / Biochemical evidence of Chronic Kidney Disease.

Exclusion Criteria:

Following patients were excluded from our study

- Who were not giving consent for the study, *OR*
- Patients suffering from acid peptic disorders due to causes other than CKD, *OR*
- Patients with acute renal failure (Acute Kidney Injury), *OR*
- Patients with liver disorders such as liver cirrhosis, portal hypertension, hepatic encephalopathy, *OR*
- Patients having altered sensorium or unconsciousness, *OR*
- Patients on Steroids, NSAIDs or documented previous history of APD

All the patients meeting inclusion criteria were subjected to the following process.

1. Detailed history with special emphasis on dyspepsia, heart burn, regurgitation.
2. General and systemic physical examination was performed in all the patients included in this study.
3. Basic investigations Hb /TLC /DLC, General blood picture (GBP), Serum creatinine / blood urea nitrogen, serum uric acid, serum proteins (total, albumin, globulin) , serum electrolytes (Na, K, Ca, Phosphate), liver function tests, blood sugar (fasting, postprandial).
4. Urine routine physical, chemical and microscopy
5. Ultrasonography

The USG examination of the patients was done to know the bilateral kidney size, bilateral kidney echo-texture, cortico-medullary differentiation, cortical thinning, any evidence of multiple cysts, hydroureteronephrosis (obstructive uropathy).

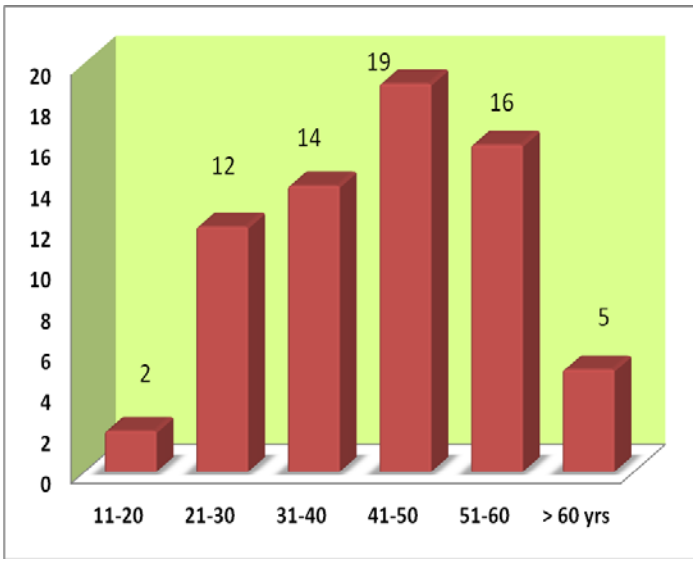
Upper GI Endoscopy – in this study we used Olympus G/E V70 flexible endoscope to perform the examination of the upper gastrointestinal tract of the patients of chronic renal failure to see for any abnormalities.

Upper GI Endoscopy examination was performed in morning in patients with overnight fasting of at least ten hours under topical pharyngeal anesthesia.

Observations:

A total of 87 indoor patients of CKD admitted in Medicine wards of LLR & Associated Hospital, Kanpur were screened from Dec 2015 to March 2017 and 68 patients were found fulfilling the study criterion. The distribution of patients was as in the following diagram (as per age in decades), showing number of patients in y axis and age groups in x axis.

Figure -1:



Maximum number of patients of Chronic Kidney Disease were seen in age group of 41-50 (*27.94%)* following by age group of 51-60 (*23.53%).* Minimum number of patients was seen in age group of 11-20 (*2.94%*).

In our study, 66.17 of subjects (45 cases) were males while 33.82 %(23 cases) are females.

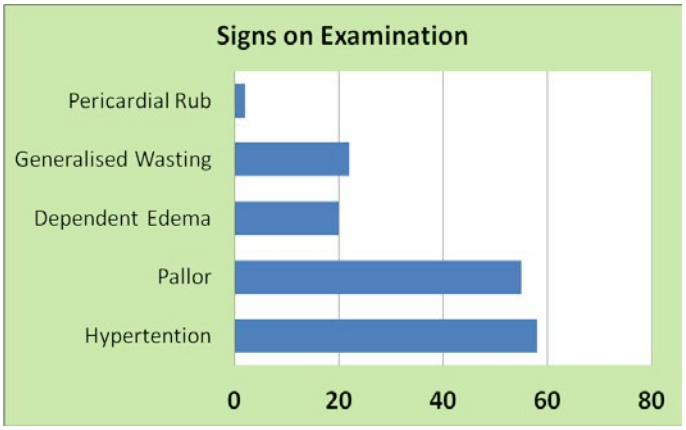
Table – 1: Predominant Presenting Symptoms of the Patients of CKD.

	No of Patients	Percentage
General symptoms (Anorexia, fatigue, Generalized weakness, lethargy)	50	73.52
Nausea / Vomiting	22	32.35
Abdominal Pain	20	29.41
Burning Chest Pain (due to acute reflux)	22	32.35
Edema	18	26.47
Neurological symptoms (seizure, Drowsiness, unconsciousness	5	7.35
Hiccups	3	4.41
Decreased urinary out put	25	36.76

This table shows that general symptoms in form of anorexia, general weakness, fatigue and lethargy predominated as the presenting symptoms in our patients of chronic renal failure. Nausea and vomiting were the predominant presenting symptom in case of 32.35% patients. Hiccups in patients of CKD which signifies uremia was seen in 4.41% of patients.

Hypertension (*85.29%*) and pallor (*80.88%*) were the most common examination finding in our study group. Pericardial friction rub suggestive of pericarditis were found only in 2.94% of patients, as shown in the following Figure -2.

Figure -2:



Most of the patients in the study were having hemoglobin in between 6-8 gm/dl (54.41%).Only 19.11% of patients were having hemoglobin level more than 8. This is shown graphically in the following Figure -3.

Figure -3:

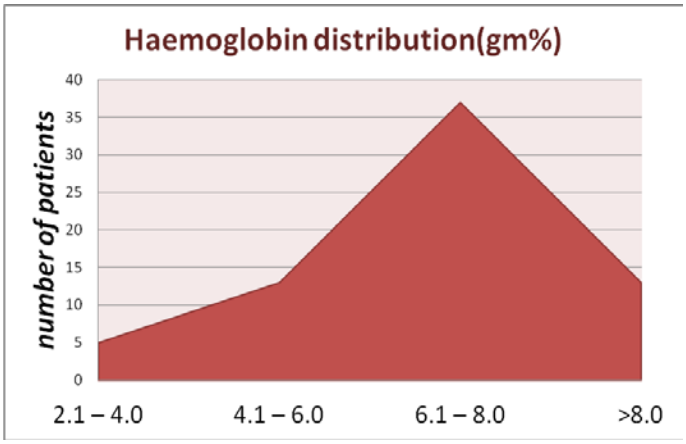


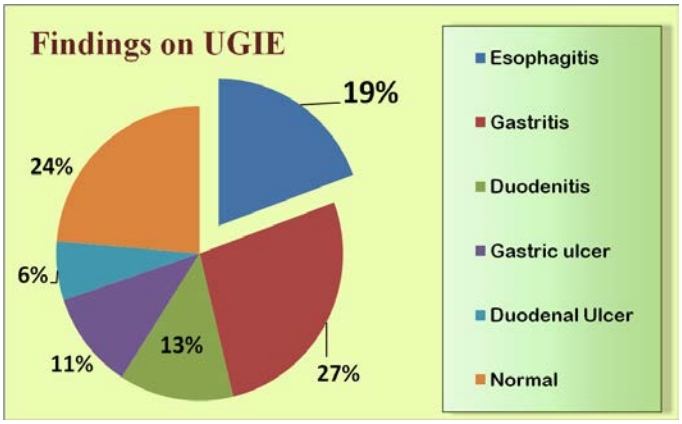
Table – 2

Upper Gastrointestinal Endoscopy Findings in Patients of Chronic Renal Failure in This Study.

OGD Findings	No of Patients	Percentage
Esophagitis	18	26.47
Gastritis	25	36.76
Duodenitis	12	17.64
Gastric ulcer	10	14.70
Duodenal ulcer	6	8.82
Normal findings	22	32.35

The above table shows gastritis (36.76%) was the most frequent finding on upper gastrointestinal endoscopy in patients of CKD included in this study. Esophagitis and Gastro-Esophageal Reflux Disease (26.47%) was the second most common finding followed by duodenitis (17.64%). 22 patients (32.35%) had normal upper gastrointestinal findings on endoscopy.

Figure – 4:



Discussion:

CKD has become challenge to a medical world due to various diverse complications that it inflicts to the body. Various undervalued complications associated with CKD are now gaining attention of medical world like gastrointestinal problems, renal bone disease and psycho-social implications.

Patients of CKD often have multitude of gastrointestinal problems. Majority of these symptoms are as a result of acid peptic disorders induced by uremic toxins and hypergastrinemia.

The AGE of the patients of CKD included in our study ranged from 15 to 74 years, majority belonging to 4th, 5th and 6th decade of life (comprising almost 2/3rd of the patients). Age is an important risk factor for CKD. ***Iseki K et al (1996)*** [4], ***Epic – Norfolk*** study [7] in UK, ***MONIKA*** study [6] is Germany all showed the prevalence of albuminuria to be significantly higher in elderly. ***Chadban SJ et al (2003)*** [5] in ***AusDiab*** study from Australia commented older age was an independent predictor of hematuria and reduced GFR.

The SEX distribution of patients of CKD was in favor of male patients which comprised (66.17%) of the study group. There are number of studies showing higher incidence of CKD and ESRD in males and faster progression of CKD from early stages to ESRD in males compared to females. It can explain the higher number of male patients (66.17%) in this study.

General Symptoms in the form of generalized weakness, lethargy, fatigue, lassitude, anorexia predominated (23.52%) as the presenting symptom in the patients in this study. Anemia which is very common in patients of CKD can explain the predominance of above symptoms. Nausea and vomiting were the predominant presenting symptom in case of (32.35%) of patients. Hiccups which signifies uremia was present in (4.41%) as a predominant presenting symptom.

Hypertension (85.29%) was the most common examination findings in the patients of CKD at the time of presentation to us. Pulmonary edema was seen in (17.64%) of patients on physical examination. Pericardial friction rub suggestive of pericarditis was found in (2.94%) of the patients.

Most of patients in our study were having ANAEMIA with hemoglobin level between 6-8 gm/dl (54.41%), and pallor (80.88%) was the second most common finding on examination Only 13 patients (19.11%) were having hemoglobin more then 8. The cause of anemia in patients of CKD & ESRD is multifactorial which may be due to nutritional factors, erythropoietin deficiency, inadequate diet due to anorexia, gastrointestinal blood loss and hemodialysis.

Although hypertension was the etiology of CKD in (14.70%) of patients, during a regular follow up hypertension was found in 58 patients (85.29%). Blood

pressure was normal in 10 patients (14.70%) of CKD even during regular follow up. Between 50% to 75% of individuals with CKD stages 3-5 have hypertension defined as systolic BP ≥ 140 mm Hg or diastolic BP ≥ 90 mm Hg (**KDOQI, 2004).**

Majority of the patients of CKD in our study who underwent endoscopy had abnormal UGIE findings (67.64%). 22 patients (32.35%) had normal endoscopy findings The prevalence of GERD in our study is CKD patients was to be 26.47% out of which maximum prevalence was seen in patients who were either not on dialysis or on irregular dialysis with serum creatinine more that 5 (35%) **.**

In the Indian study by ***Sreelatha M.(2017)***[8] 50 patients with CKD Stages III-V were evaluated for UGI manifestations. Patients with GI symptoms had higher incidence of GI abnormalities (78%) when compared to those without symptoms (61%). Erosive gastritis is the predominant UGI lesion (27%). Erosive esophagitis and duodenal ulcer occupy the next place at 12% each.

In the Indian study by ***Gupta M. (2017)*** [9] on 50 patients the most common upper GI lesion were gastritis (28%), oesophagitis (16%) and duodenitis (12%).

In the Indian study by ***C.C.Umayal(2016)***[19]**,** 42% of subjects had dyspeptic symptoms ; 57% of CKD patients had abnormal UGI endoscopy, 77% had histopathological abnormalities&43% had *Helicobacter pylori* infection. He concluded that the UGI mucosal inflammatory lesions and H pylori infection are common in CRF patients, and all of them need to have a detailed pretransplant UGI endoscopic evaluation & Histopathological examination, including H pylori detection, to prevent post-transplant complications.

In the Indian study by ***Goyal M.(2014)*** [10] on 100 patients 68% patients had gastritis, 42% had esophagitis, 22% had gastric ulcer and 14% had no GI lesions.

A Senegalese study of UGIE in CKD patients by ***Daounda Dia (2014)*** [11]**,** Upper digestive endoscopy was abnormal in 76% of the 50 patients studied. Peptic esophagitis was noted in 7 patients.

In a Japanese study by ***Kawaguchi Y.(2009)*** [12] in 156 patients on CKD, he found that compared to the reported prevalence of GERD in Japanese adults (16.3%), the prevalence of GERD in CRF patients(34%) was increased, even more so in those who underwent hemodialysis (50.0%).

Other older studies by Cekin AH (2002) [13], Prakash J.(1991) [14] ,Al Mueilo SH et al (2004) [15] ,Sotoudehmanesh et al (2003)[16] ,Hans strid et al (2002) [17] , Verma PP et al (1999) [18] , Hammer J et al (1998) , Moustafa FE et al (1997) , Benzo J et al (1994) , Goenka MK et al (1989) , A Chachati et al (1987) , Zuckermann GR et al (1985) , Milito G et al (1983) , Ray JF, Lombart J et al (1982) and Franzin G et al (1982) , Margolis DM et al (1978) and Mitchell CJ et al (1979) all support the notion that upper gastroesophageal lesions are very common in CKD.

Conclusion:

From above discussion of our study we conclude that gastrointestinal symptoms consistent with acid peptic disorders such as esophagitis, gastritis, Duodenitis, GERD, gastric ulcer, duodenal ulcer are common in patients of CKD. UGI endoscopy is abnormal in majority of the patients of CKD, both symptomatic and asymptomatic, and may correlate with the degree of renal impairment.

In light of this understanding we recommend that all symptomatic patients diagnosed with CKD undergo an initial UGIE evaluation. It may be considered even in CKD patients with no upper gastrointestinal symptoms, especially those patients who are being worked up for renal transplantation, so that addressing these findings can

reduce risk of catastrophic bleeding, chronic malnutrition and blood loss, longterm complications and distressing symptoms, so as to improve the general quality of life and boost feeling of wellbeing.

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