ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 04 | April - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A STUDY 0F PREVALENCE OF ANEMIA IN CKD PATIENTS ADMITTED IN GUWAHATI MEDICAL COLLEGE AND HOSPITAL.

General Medicine

Ajay Kalita* Post Graduate Trainee Guwahati Medical College and Hospital, Assam, India. *Corresponding Author

Bipul Ch Kalita Professor of Medicine. Guwahati Medical College and Hospital, Assam, India.

ABSTRACT

Background: Chronic kidney disease (CKD) is characterised by impaired kidney function, a persistent decline in glomerular filtration rate (GFR), and a spectrum of diverse pathophysiologic processes. Anemia in CKD may be treated and identified early, which may reduce cardiovascular morbidity and mortality. Early anemia treatment in CKD patients may delay the onset of ESRD and increase survival. **Materials And Method:** A hospital based observational study was conducted in different units of Medicine department of Guwahati Medical College and Hospital during the period from 1st July 2021 to 30th June 2022 enrolling 100 patients who fulfilled the inclusion criteria. **Results:** In the present study anemia was present in all cases. The hemoglobin (Hb) level ranged from 3.5 to 11gm/dl with mean of 7.97 gm/dl. Majority (61%) of the cases had Hb level between 7-10 gm/dl and 32% had Hb level less than 7gm/dl. The hemoglobin distribution was categorized into mild, moderate and severe and then prevalence of anemia in different stages of CKD was obtained. It showed Stage 5 CKD to have statistically significant anemia for Hb<9gm%. **Conclusion:** It was found that all the subjects in the study group had anemia. The severity of anemia progressed with stage of the disease. I Therefore, it is crucial to handle anemia in chronic kidney disease patients so that the appropriate measures can be taken to stop the progression of CKD.

KEYWORDS

Anemia, Hemoglobin, CKD.

BACKGROUND:
Chronic kidney disease (CKD) is characterised by impaired kidney function, a persistent decline in glomerular filtration rate (GFR), and a spectrum of diverse pathophysiologic processes. The Kidney Dialysis Outcomes Quality Initiative (K/DOQI) guideline from the US National Kidney Foundation defines CKD as kidney disease or an estimated glomerular filtration rate (eGFR) of less than 60 ml/min/1.73 m2 for more than three months.[1] The Kidney Dialysis Outcomes Quality Initiative (K/DOQI) of the National Kidney Foundation advises a workup for anemia if the hemoglobin level is less than 12.0 g/dL in women and less than 13.0 g/dL in adult men.[2]

Anemia in CKD may be treated and identified early, which may reduce cardiovascular morbidity and mortality.[3] Early anemia treatment in CKD patients may delay the onset of ESRD and increase survival.

Treatment of anemia in CKD when indicated may involve iron therapy, use of erythropoietin, and correction of anemia to a target hemoglobin of 11- 12 gm /dl.[1]

AIM AND OBJECTIVE OF THE STUDY:
To study the prevalence of anemia in patients with chronic kidney disease admitted in Guwahati Medical College and Hospital.

METHODS:
A hospital based observational study was conducted in different units of Medicine department of Guwahati Medical College and Hospital during the period from 1st July 2021 to 30th June 2022 enrolling 100 patients who fulfilled the inclusion criteria.

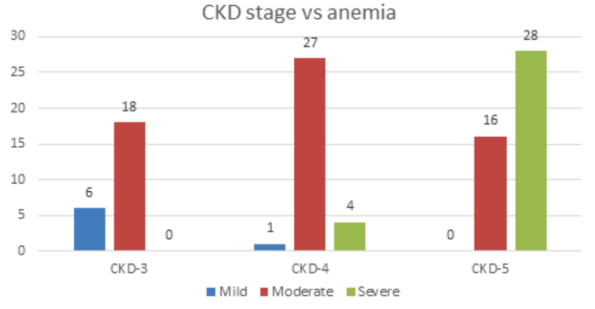
Inclusion Criteria:
All adults of age 18 years to 60 years fulfilling the diagnostic criteria of Chronic Kidney Disease.

Diagnostic Criteria:
1. Bilateral contracted kidneys
2. GFR <60 mL/min/1.73m2.

Exclusion Criteria:
1. Age less than 18 years
2. Evidence of acute infection or trauma in the last four weeks
3. History of parenteral iron injection in the last 14 days
4. History of blood transfusion in the last 3 months
5. On dialysis, post-transplant status
6. Steroid therapy
7. Patients receiving EPO therapy.

RESULTS AND OBSERVATION
Table 1: HB and CKD Stages

			CKD_STAGE			Total	P value
			3.00	4.00	5.00		
Anemia	Mild	Count	6	1	0	7	0.0001
		% of Total	6.0%	1.0%	0.0%	7.0%	
	Moderate	Count	18	27	16	61	0.0001
		% of Total	18.0%	27.0%	16.0%	61.0%	
	Severe	Count	0	4	28	32	0.0001
		% of Total	0.0%	4.0%	28.0%	32.0%	
Total		Count	24	32	44	100	Signifi
		% of Total	24.0%	32.0%	44.0%	100.0%	cant

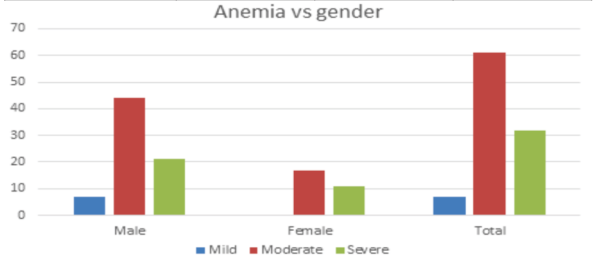


Graph 1:

The study presented with 28 patients with CKD patients with severe anemia. There was statistically significant correlation between CKD stages and severity of anemia.

Table 2: Anemia Vs Gender

Anemia	Male	Female	Total
Mild	7	0	7
Moderate	44	17	61
Severe	21	11	32
Total	72	28	100

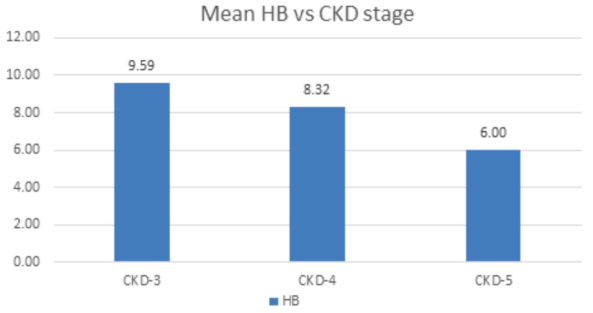


Graph 2: Anemia Vs Gender

Anemia was present in all the patients in our study.

Table 3 : Mean Hemoglobin Vs CKD Stage

CKD_STAGE	HB	P value
CKD-3	9.59	0.0001 significant
CKD-4	8.32	
CKD-5	6.00	



Graph 3: Mean Hemoglobin Vs CKD Stage

In our study the mean Hemoglobin was 7.97. The mean hemoglobin level decreased as the stages of CKD progressed. The decrease in hemoglobin is statistically significant.

DISCUSSION:

CKD And Anemia

In the present study anemia was present in all cases. The hemoglobin (Hb) level ranged from 3.5 to 11gm/dl with mean of 7.97 gm/dl. Majority (61%) of the cases had Hb level between 7-10 gm/dl and 32% had Hb level less than 7gm/dl.

The present study is comparable to the study of Talwar et al [4] where the mean Hb level was 7.1 gm/dl and prevalence of anemia in 94%. This study result is in concordance with Chinwuba et al [5], Islam et al [6].

The hemoglobin distribution was categorized into mild, moderate and severe and then prevalence of anemia in different stages of CKD was obtained. It showed Stage 5 CKD to have statistically significant anemia for Hb<9gm% which was similar to study done by Dewan et al[7].

The association of severity of anemia with the stage of CKD were hugely significant (p value =0.0001). The study done by Callen IR [8] et al also showed that anemia becomes more severe as CKD progresses34. This is because, as CKD progresses, inhibition of bone marrow, deficiency of EPO, deficiency of iron and bleeding tendencies increase as a result of an increase in the circulating uremic toxins.

REFERENCES

1. Levey AS, Coresh J, Bolton K, Culleton B, Harvey KS, Ikizler TA, Johnson CA, Kausz A, Kimmel PL, Kusek J, Levin A. K/DOQI clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratification. American Journal of Kidney Diseases. 2002;39(2 SUPPL. 1):i-i+.
2. Cameron JS. European best practice guidelines for the management of anaemia in patients with chronic renal failure. Nephrology, dialysis, transplantation: official publication of the European Dialysis and Transplant Association-European Renal Association. 1999 Jan 1;14(suppl_2):61-5.
3. Sarnak MJ, Levey AS. Cardiovascular disease and chronic renal disease: a new paradigm. American journal of kidney diseases. 2000 Apr 1;35(4):S117-31.
4. Talwar VK, Gupta HL. Clinicohaematological profile in chronic renal failure. The Journal of the Association of Physicians of India. 2002 Feb 1;50:228-33.
5. Ijoma C, Ulasi I, Ijoma U, Ifebunandu N. High prevalence of anemia in predialysis patients in Enugu, Nigeria. Nephrology Research & Reviews. 2010;2(1):61-5.
6. Islam MN, Ferdous A, Zahid AZ, Alam M, Islam MN. Haematological profile of patients with chronic kidney disease in Northern Bangladesh. Dinajpur Med Col J. 2015 Jan;8(1):21-7.
7. Dewan P, Nanda P, Mamta B. Hematological Profile In Cases Of Chronic Renal Diseases. IOSR Journal of Dental and Medical Sciences. 2017;16:1-3.
8. Callen IR, Limarzi LR. Blood and bone marrow studies in renal disease. American Journal of Clinical Pathology. 1950 Jan 1;20(1):3-23.