



FUNDUS OCULI CHANGES IN PATIENTS OF CHRONIC KIDNEY DISEASE

V Elisha Raju	Assistant Professor of Ophthalmology, Gandhi Medical College, Hyderabad, Telangana
D Kesava Rao	Assistant Professor of Ophthalmology, Gandhi Medical College, Hyderabad, Telangana
K Ravi Shekar Rao	Professor and HOD of Ophthalmology, Gandhi Medical College, Hyderabad, Telangana
Mohammed Ather*	Professor of Ophthalmology Bhaskar Medical College Yenkapally Moinabad RR District, Telangana *Corresponding Author

ABSTRACT **Aim:** To study fundus oculi changes in cases of Chronic Kidney disease.

Materials and Methods: This is a Prospective Observational study conducted at the department of Ophthalmology of Gandhi Medical college/Gandhi Hospital during June 2015 to May 2016. 50 patients of Chronic Kidney disease (CKD) referred to the department of Ophthalmology for fundus examination were included in the study. Patient who were not willing to be part of study were excluded. All patients were examined by an experienced Ophthalmologist using Snellen's chart, Slit lamp, Direct and Indirect Ophthalmoscope.

Result: Of 50 patients included 27 were males, 23 females. Age group varied from 18 years to 80 years. Etiology of CKD includes, 16 Diabetic Nephropathy, 9 Pyelonephritis, 1 Pregnancy induced Hypertension, 24 Primary Hypertension. 5 patients had Proliferative diabetic Retinopathy, 15 had Mixed picture of Diabetic Retinopathy and Hypertensive Retinopathy. 25 patient had Grade III to grade IV Hypertensive Retinopathy. 5 patients had no significant fundus changes.

KEYWORDS : Fundus Oculi, CKD, Diabetic Retinopathy, Hypertensive Retinopathy.

INTRODUCTION:

Chronic kidney disease occurs as a result of loss of renal function over a period of time. The common systemic disease which can cause CKD are Diabetes Mellitus, Hypertension, Pyelonephritis, Renal Lithiasis, Renal artery Stenosis, Chronic Glomerular Nephritis and Pregnancy induced Hypertension. Normal kidneys can filter 90 ml/min (Normal GFR). Estimated Glomerular filtration rate of less than 60ml/min/1.73m² or Proteinuria is considered as Chronic Kidney disease¹.

Eye gets involved in CKD by the systemic disease itself like Diabetes Mellitus which causes both Diabetic Nephropathy and Diabetic Retinopathy as a result of microangiopathy as long term complication of diabetes². CKD because of any reason will cause secondary hypertension which also effects eye by causing complications like Hypertensive retinopathy, Central retinal artery occlusion, central retinal vein occlusion, Branch retinal vein occlusion, Vitreous hemorrhage³.

MATERIALS AND METHODS:

This is a Prospective observational study conducted at the Department of Ophthalmology of Gandhi medical college/ Gandhi Hospital during June 2015 to May 2016. 50 consecutive patients of CKD referred from department of Nephrology for Fundus Oculi evaluation were included in the study. Patients with acute renal shut down who were liable to recover were excluded from study. Informed consent obtained from all patients. All patients were examined by an experienced Ophthalmologist using Snellen's chart, Slit lamp, Direct and indirect ophthalmoscope. After recording visual acuity patient's anterior segment was examined by slit lamp biomicroscopy. Then pupils of the patients was dilated by a combination of 0.5% Phenyl ephrine and 1% Tropicamide eye drops instillation two times with a gap of 15 minutes. Then patients Fundus oculi was examined by Direct and indirect Ophthalmoscope and 90 D Slit lamp biomicroscopy. Fundus photographs was taken in all cases.

RESULTS:

Of 50 cases included in the study 27 were males 23 were females. Age group of the patient varied between 18 years to 80 years. 35 cases were in age group of 4th to 6th decades. Etiology of CKD was as follows: 16 cases had diabetic nephropathy, 24 cases had Hypertension, 9 had Pyelonephritis, 1 case had Pregnancy induced Hypertension. Fundus Oculi changes seen was as follows: 5 cases had Proliferative diabetic retinopathy, 15 cases had Mixed changes of NPDR or PDR with Hypertensive retinopathy, 25 cases had Hypertensive retinopathy of grade III or Grade IV and 5 cases didn't show any Fundus oculi changes.

Table 1 showing etiology of CKD

Etiology of CKD	No. of cases	Percentage
Diabetic Nephropathy	16	32%
Pyelonephritis	9	18%
Prenancy induced Hypertension	1	2%
Hypertension	24	48%

Table 2 showing Fundus oculi changes

Fundus Oculi changes	No. of cases	Percentage
Proliferative diabetic retinopathy	5	10%
NPDR or PDR with Hypertensive Retinopathy	15	30%
Hypertensive retinopathy	25	50%
No changes	5	10%

DISCUSSION:

Bixia Gao et al⁴ studied more than 9000 cases in Chinese population. They found 61% males were affected and 39% females. In our study there is no significant difference between the two genders. They found 60% patient had Hypertensive retinopathy and 20% had Diabetic retinopathy. These findings are matching with our study.

P Dahal et al⁵ studied 238 cases of CKD. The commonest cause of CKD was Hypertension and second commonest is Diabetic nephropathy. This is in consistent with our study.

CONCLUSION:

It is concluded that CKD can cause sight threatening complications in the eye. So all patients of CKD should be evaluated by an Ophthalmologist to prevent and treat the sight threatening complications by timely intervention.

Financial support: Nil

Conflict of interest: Nil

REFERENCES:

- Dennis Kasper et al, Harrison's Principles of internal medicine 19th edition, McgrawHill 1741-45
- Stuart Ralson et al, Davidson's Principles and Practice of Medicine, 23rd edition, Elsevier 1340-47
- A K Khorana, Text book of Ophthalmology, Jaypee Brothers, 6th edition, 670-75
- Bixia Gao, Ling Zhu et al, Ocular Fundus Pathology and CKD in Chinese population, Biomed central Nephrology, 2011, 12-62
- P Dahal et al, Ocular findings in Chronic Renal failure, Journal of college of medical sciences-Nepal, 2014; 10-2pg 18-24