Clinical Study on Hypertensive Retinopathy

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Introduction :

- Systemic hypertension is one of the most common disease in adult population.
- Hypertensive retinopathy represents the ophthalmic finding of end organ damage secondary to systemic hypertension.
- It commences asymptomatically, so its early detection & thence the quality of life.
- Retinal vessels can be assessed because of their unique accessibility & inference can be made as to the condition of vessels of similar size elsewhere in the body.

Aim of this study cont :

- Relation of retinopathy with age of the individuals.
- To study the fundal changes in relation to the duration of hypertension.
- To classify these fundal changes according to its severity & correlate the finding with magnitude & duration of hypertension & systemic hypertensive complication.

Material and Methods :

- This study was conducted in the department of Ophthalmology, M.K.C.G., Berhampur, from Dec. 2009 to Sept. 2010.
- A total of 226 hypertensive patients were examined out of which 100 were found to manifest hypertensive retinopathic changes.
- These 100 patients were further evaluated and analyzed.

Prevalence of Hypertensive systemic Complications A cross Hypertensive Retinopathic Gradings

Grading	LVH	CAD	CVA	MICROABU-LUMINURIA
Grade I	3(6.38%)	3(6.38%)	0	5 (10.63%)
Grade II	3(8.22%)	3(8.22%)	2(5.887%)	7(20.58%)
Grade III	2(11.76%)	3(17.64%)	4(23.52%)	11(64.70%)
Grade IV	0	0	0	1(50.0%)

- Higher percentage of patients with LVH along with CAD was noted with grade II compaired to grade III
- CVA was more common in grade III patients (23.52%).
- Microalbuminuria was strongly related to the presence of grade III hypertensive retinopathy and was found in 64.70% of cases with grade III retinopathy.

Discussion :

- In the present study, the prevalence of microalbuminuria was 24% in the overall study group. But with individuals with duration of hypertension < 10yrs, the prevalence was 18.91%.
- Grade III hypertensive retinopathy was associated with microalbuminuria in 64.70%. (Shantha GP, Bhaskar E, and et al., in their study showed that, Microalbuminuria showed a strong association with retinopathy (P< 0.0001).

Source of Data

1 Hypertensive patients who fulfill the inclusion and exclusion eriteria, attending the outpatient section at the department of Ophthalmology, M.K.C.G., Berhampur.

2 Hypertensive patients who fulfill the inclusion and exclusion criteria, referred from other departments to the Department of Ophthalmology, M.K.C.G.< Berhampur.

3 Sample size : 100 patients of hypertensive retinopathy.

4 Sampling method : Cross-sectional survey study.

5 In the present study KWB classification was used to grade retinopathic changes and Scheie's classification for retinal arteriolosclerosis.

6 Inclusion criteria :

1 All hypertensive patients presenting with features of hypertensive retinopathy of varying severity.

Essential hypertension : Systolic BP > 140mmHg.
Diastolic BP>90mmhg.

Malingant hypertension : Systolic BP>240mmHg.
Diastolic BP > 140mmHg.

2. Hypertension associated with ocular complications like retinal venous obstruction, neovascularisation, arterial obstruction.

Exclusion Criteria :

- All the patient who deny consent for Fundus examination.
- All patient with media opacities.
- Diabetic retinopathy / Individuals with hyperglycemic status.
- Ocular ischemic syndrome & Bilateral CRVO
- Collagen vascular disease; Hyper viscosity syndrome.
- Anemic retinopathy, sickle cell retinopathy, Radiation retinopathy.

7. Investigation done in this study

Results :

Distribution of Retinopathic Grading (Keith Wagner's & Barker's Grading)

Grading	No. of Cases	% Age
Grade I	47	47%
Grade II	34	34%
Grade III	17	17%
Grade IV	2	2%

In the present study maximum percentage of cases (47% had Grade I hypertensive retinopathy.

A higher percentage of Grade II and Grade III was noted in the age group of individuals > 70yrs, than Grade I, whereas Grade I constituted the bigger fraction among other age groups.

A higher percentage of patients with chronic hypertension manifested with Grade II and Grade III retinopathic changes than grade I changes, which constituted the major fraction among patients with hypertension of lesser duration.

In the present study highest percentage of patients (35%) had stage II systemic blood pressure.

- Controlled blood pressure levels manifested with Grade I hypertensive retinopathic changes in 56.25% of cases, but also manifested with Grade II in 31.25% and Grade III in 12.50%.
- Stage I hypertension manifested with Grade I retinopathic changes in 53.57% of patients and 35.71%, 10.71% with Grade II and Grade III retinopathic changes respectively.
- Stage II hypertension manifested with Grade I retinopathic hypertension in 42.85% of patients. Grade II retinoathic changes were as common and manifested in 37.14% of these patients.
- 26.31% of patients with severe hypertension showed Grade III hypertensive retinaoathy, compared to 12.50% of patients with controlled blood pressure and 10.71% with stage I disease.

SIGNS	NO. OFCASES	%AGE
Arterial Narrowing Gr I	15	44.12%
Arterial Narrowing Gr II	17	50.0%
Arterial Narrowing Gr III	2	5.88%
Arterial Narrowing Gr IV	2	11.76%
Aycrossing Changes	17	100%
Gunn'ssign	32	94.11%
Gunn'ssign only	8	29.42%
Salu'ssign only	2	5.89%
Microaneurysms	2	5.89%
Proximal Venous Congestion	5	14.70%
Focal Arteriolar Narrowing	2	5.89%
Segmental Arterial Narrowing	2	5.89%
Memoprhages	16	94.11%
Dot & Blot Haemorrhages	4	23.52%
Cotton Wool Sports	13	76.147%
Exudates Soft & Hard	7	41.17%
Brvo	2	11.76%
Retinal Oedema	1	5.88%

- A-V Crossing changes were noted in allmost all cases.
- Gunn's sign & Haemorrhages was the most common finding of the AV crossing changes (94.11%)
- Salu's sign manifested in (70.58%) of cases and was seen as the sole AV crossing change in 2 cases (5.89%).
- Proximal venous congestion was noted in 5 cases (14.70%).
- Haemorrhages was the most common finding in Grade II, III retinopathy.
- Single hemorrhages was noted in 4 cases (11.76%).
- A single vein occlusion (2.94%) in the suporeotemporal region was noted.
- Cotton wool spots were noted in 13 cases (76.47%)
- Soft & hard exudates was noted in 7 cases (41.17%)

Conclusion :

- Hypertensive retinopathy is present in less than half of the patients examined and Grade I hypertensive retinopathy (47%) is the most common type noted.
- There is a significant correlation between increasing age, blood pressure levels and severity of sclerotic changes with severity of netinopathy.
- Patients with CVA and Microalbuminuria show significant association with increasing grades of Hypertensive retinopathy, indicating microvascular damage.
- This warrants an evaluation concerning these systems in patients, especially with grade III hypertensive retinopathy.

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You cannot believe in God until you believe in yourself.

The more we come out and do good to others, the more our hearts will be purified, and God will be in them.

All the powers in the universe are already ours.
It is we who have put our hands before our eyes and cry that it is dark.

YOU know, I may have to be born again, you see, I have fallen in love with mankind.

BY the study of different RELIGIONS we find that in essence they are one.

- Vivekananda