

A Case Study of Diabetic Retinopathy-Risk Factors, Clinical Staging And Preventive Measures oo Prevent Vision Loss

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Abstract: This study was done on 100 eyes of 50 patients at Government General Hospital, Guntur. The primary aim of the study is to evaluate, Clinical staging of the disease at presentation and to manage it and to evaluate the visual outcome after medical management including anti VEGF agents and laser.

Inclusion Criteria

- Diabetic patients attending ophthalmology outpatient department
- All patients who are known diabetics (type 1 and type 2)
- Duration of diabetes more than 3 years
- Visual acuity of 6/9 to PL+

Exclusion Criteria

- 1. Patients with no PL.
- 2. patients who are not compliant for followup for 2 years.
- 3. patients with hazy media-in grade 4 nuclear cataracts.
- 5. diabetic patients associated comorbid conditions
- Patients who underwent PRP previously.

Methodology

Methods : The clinical examination comprises of general examination and local ocular examination

Type of study: Retrospective study.

Place Of Study: Government generalhospital, GMC, Guntur.

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I. Aims And Objectives

- To determine the risk factors for the diabetic retinopathy,
- To determine the clinical staging of the case at which it is presented
- To determine the measures to be taken to reduce the visual loss.

Period Of Study

- January 2015 to january 2016

II. Materials And Methods

- After examining the cases at dark room, the DR cases are instructed to attend retina clinic for proper fundus examination with dilated pupils.. All the patients are investigated thoroughly first for anterior segment after recording detailed history, then posterior segment is evaluated with +90D lenses under slit lamp, Direct and Indirect Ophthalmoscope, at the end we take fundus photographs. The patients are asked to get investigated for blood sugar (fasting/PP), HbA1C, renal function tests & Lipid profile.
- After getting investigated the patients were informed to attend the Retina clinic where Fundus Florescein Angiography was done after informing about the complications of florescein and written consent is taken and after the diagnosis was established, the patient is asked to attend at prefixed dates.

Followup-For Fundus Examination

- Mild NPDR -every 12 months.
- Moderate NPDR- every 6 months.
- Severe NPDR-every 3 months.

- PDR –every 2 months
- Severe NPDR cases were explained about the complications of DR and its course. After analyzing the FFA pictures PRP was done in 3 sittings at 250mw power, 0.1ms, 500microns of spot size. Every time after PRP IOP was recorded.
- For PDR cases the schedule is done as above and evaluated not only for visual function but also for NVE/NVD and any macular edema. We used to start treatment for all patients immediately after investigations are over and complete the treatment.

III. Results

Clinical staging of diabetic retinopathy	
Clinical stage of diabetic retinopathy	-No.Of Eyes
• Mild npdr	21
• Moderate npdr	27
• Severe npdr	23
• Non high risk pdr	15
• High risk pdr	14
Total	100 Diabetic Maculopathy-No Of Eyes
• Fm	7
• Dm	8
• Csme	15

IV. Observation

In the present study of 50 patients, out of 100 eyes most of the eyes are in the stage of Moderate NPDR followed by Severe NPDR, least of the eyes fall in Stage of High risk PDR. Diabetic maculopathy found in 26 eyes, of which most of them are in stage of CSME.

Management Of Diabetic Retinopathy Result Analysis

All the results are tabulated after 1 year study *SEVERE NPDR & PDR CASES*

Total no. Of eye -	improved	-status quo	-worse
• PDR	29	18	6
• NPDR	71	48	21
• TOTAL	100	66	27

- Total no. of patients: 50 patients (100 eyes)
- (excluding the cases those lost for follow up) From the above data the following conclusions are drawn:
- Improvement of vision is 62.09 % in PDR eyes
- Improvement of vision is 67.60 % in NPDR eyes.
- Vision is maintained at base line in 20.69 % PDR eyes.
- Vision is maintained at base line in 29.58 % NPDR eyes.
- Visual condition is deteriorated in 17.24 % PDR eyes.
- Visual condition is deteriorated in 2.82 % NPDR eyes.
- Improvement is seen in 66.00 % of patients, vision is maintained at base line in 27.00 % and 7.00 % showing deterioration irrespective of the stage of diabetic retinopathy.
- Altogether 93.00 % benefited with stable vision as against 7.00 % worsening.
- 97.19 % attained stable vision in NPDR group as against 82.76 % in PDR group.
- 2.82 % worsening in NPDR group as against 17.24 % in PDR group.

Mild & Moderate Npdr Cases

Total No Of Eyes	Improved	Status Quo
48	27	21

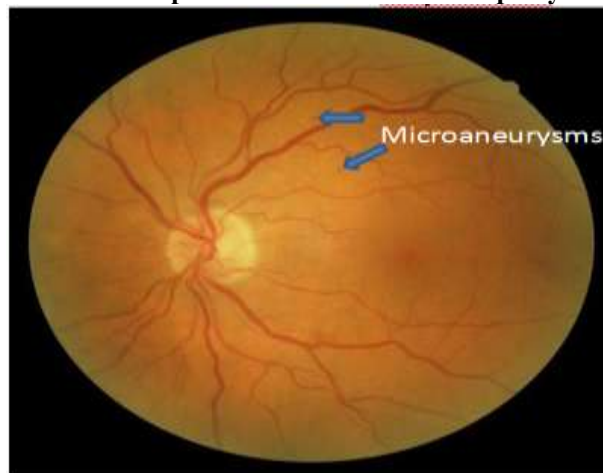
Managed on Conservative method by

- a. Strict Glycemic control by Oral hypoglycemic drugs & Insulin.
- b. Strict dietary habits & Regular exercise.
- c. Control of Hypertension.
- d. Tab Calcium Dobesilate.
- e. Tab Aspirin.
- f. Hypolipidemic drugs (Statins)

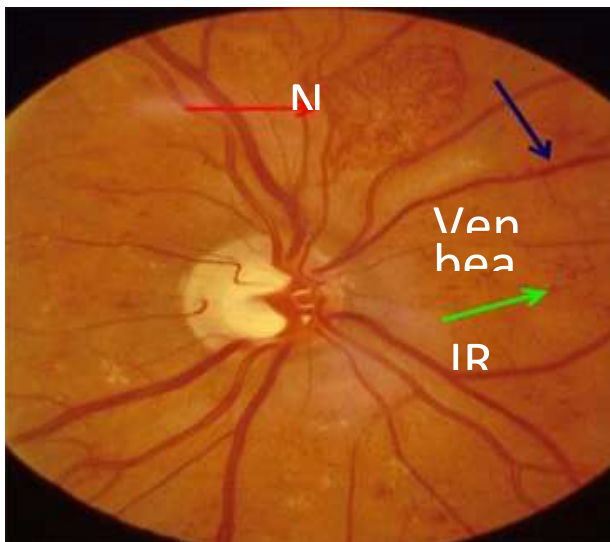
- Total no of High risk PDR cases managed with surgery is 11
- Total no of eyes 11

- Eyes with Improved visual acuity 6
- Eyes with Status quo visual acuity 1
- Eyes Worsened after S_x 5
- Percentage of Eyes improved is 54.45%
- Percentage of Eyes maintaining their preoperative vision 9.1%
- Percentage of eyes worsened regarding visual status 45.46%
- Total no of Eyes treated with Panretinal Photocoagulation (medical R_x) : 40
- Total no of eyes Underwent PRP 40
- Improved their vision 31
- Maintained their vision 6
- Worsened their Vision 3
- Percentage of improved eyes among treated eyes treated with PRP: 77.50%
- Percentage of eyes that maintained their prePRP vision is : 15%
- Percentage of eyes which have worsened visual acuity is : 7.5%
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Mild Nonproliferative Diabetic Retinopathy



- On fundus examination-
Be Media-hazy due to pseudophakic fundus OPTIC DISC-normal in size,shape,color.magginsclear.
Cdr 0.3:1
Vessels-venous dilatation&beading +
Irma + microaneurysms+
Macular Region-Fr dull
Background Retina-neovascularization elsewhere seen in superior quadrant of retina
Imp:Be Pdr Without Hrc



V. Summary & Conclusion

- Although diabetes mellitus is the leading cause of blindness in adults most diabetic visual loss can be prevented. However, there are many individuals with diabetes and few individuals trained to evaluate and treat the disorder. Therefore, an effective screening strategy would be a major public health advantage.
- Many studies demonstrate that implementing screening and treatment programs for patients with diabetes mellitus is beneficial to the patients and is cost effective to the country. In this manner, it was discovered that if all such patients received appropriate care, more than 79,000 person-years of sight would be saved.
- Therefore, the following clinical screening programs have been suggested for patients with diabetes mellitus
- Beginning 5 years after the onset of diabetes, all patients with type I diabetes mellitus should receive a detailed retinal evaluation.
- Patients with type II diabetes mellitus should have an initial detailed retinal evaluation shortly after the diagnosis of diabetes.
- After these initial examinations, these patients need repeated, detailed retinal examinations on a yearly basis and intervention when appropriate.
- We have to gear up all possible approaches (mass ,group & individual) to motivate and educate the people to obtain this goal.
- The role of Diabetologist or a Physician in the prevention of Diabetic Retinopathy is more, the primary health care Physicians need to take a more active role in overseeing and managing their ophthalmic care ,making sure that every patient with diabetes receives an eye examination with pupil dilated to screen for retinopathy at least once a year.
- The method of screening for diabetic retinopathy may involve one or more of the strategies like the Physicians, Diabetologists, Ophthalmologists, Optometrist and Ophthalmic assistants.
- In my study also patients who have poor vision are mostly have the associated risk factors which caused the irreparable ocular morbidity.
- As Diabetic Retinopathy is a blinding disorder, it was included in the NPCB programme to have awareness of the disease in the public.
- In conclusion the concomitant treatment of predictive risk factors like smoking, hyperlipdemia, hypertension and nephropathy will result in better visual prognosis.
- Intersectoral coordination encompassing community nutritional workers, anganwadi workers and teachers and also the mass media participation with support of non governmental organizations may be involved to create awareness and help in organizing screening camps for diabetes and detect diabetic retinopathy.
- Patients should be of aware that irregular intake of drugs, poor dietary control and sedentary life style with smoking habits will definitely aggravate diabetes morbidity both systemic and ocular complications producing irrecoverable blindness.
- In my study also patients who have poor vision are mostly have the associated risk factors which caused the irreparable ocular morbidity.
- As Diabetic Retinopathy is a blinding disorder, it was included in the NPCB programme to have awareness of the disease in the public.
- Early detection ,regular treatment, Diabetologist counselling and avoidance of the risk factors like Smoking, Hyperlipidemia and renal disease will definitely make the Diabetic individual to live with good health and have a fruitful vision in their life time.

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