IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 3 Ser.2 (March. 2021), PP 01-03
www.iosrjournals.org

Role of Panretinal Photocoagulation in Diabetic Retinopathy

Dr.Kosti Ravi Naini
Dr.N.Lakshmi Chowdary, M.S, HOD.
Department of Ophthalmology,NRIMC/GH,Guntur

Date of Submission: 20-02-2021 Date of Acceptance: 04-03-2021

I. Introduction:

- Diabetes mellitus is a chronic disorder characterized by persistent hyperglycemia, Which progressively damages every system of the human body including eye.
- The nerves, retina and kidneys are the main targets affected by glucotoxicity resulting in "microangiopathy triad"
- In India, the prevalence of diabetic Retinopathy was 18% in urban population[1] and the prevalence of PDR varied from 2.0% to 15.5% depending on duration of diabetes.[2]
- Diabetic Retinopathy is an important acquired cause of visual loss in individuals world wide.
- It is one of the most common cause of blindness leading to vitreous haemorrage,tractional retinal detachment,clinically significant macular oedema.

AIM: The aim of this study is to evaluate the effect of panretinalphotocoagulation(PRP) in Diabetic Retinopathy(DR).
To Study the visual outcome in patients who had undergone PRP.

II. Materials And Methods

In this prospective study,total number of 53 eyes out of 30 patients were included in the study. The diagnosis of very severe NPDR and PDR was done based on slit lamp biomicroscopy and FFA. Visual Acuity was recorded by snellens chart at each visit. Regression of PDR was done by using slit lamp biomicroscopy and FFA in doubtful cases.PRP was done in three divided sittings using oculus 160 degrees panretinal contact lens. A total number of 1500-1800 spots weregiven in each eye with 500-600 spots in each sitting. Power was decided to a moderate white burn on retina. A spot size of 200 microns with gap of one spot size in between adjacent spots.

INCLUSION CRITERIA:

- Patients who are having type 2 Diabetes mellitus.
- Patients who need laser photocoagulation in PDR were included.
- Patients with very severe NPDR who needed early PRP due to uncontrolled Diabetes Mellitus,Hypertension,Nephropathy and extensivecapillary Non-perfusion areas on FFA were included.

EXCLUSION CRITERIA**:**

- The following groups of patients were excluded in this study

- Patients with type 1 Diabetes Mellitus,
-patients with mild,moderate,severe NPDR andCSME
-patients with tractional(macular or extra macular)retinal detachment.
- Advanced PDR patients

III. Results:

Total 53eyes out of 30 patients had received PRP during thestudy period for one year. Out of these 53eyes ; 36eyes(68%) were with PDR and 17 eyes (32%) with very severe NPDR.

Post PRP, VA was improved by 2 lines from baseline VA in 5(9.4%) eyes.

VA was maintained at the baseline from 6/36 to 6/12 in 39eyes(73.3%).
VA was reduced to 6/36-6/12in 9 eyes(17.3%) from base line VA. where out of 9 eyes 5 are with macular oedema and 4 are with vitreous Haemorrage.

Out of 53 eyes, in 30(56.6%) eyes, there is Regression of New vessels after 6 weeks follow up.Remaining 23(43.4%) eyes needed additional sittings,out of them 13(56.6%) needed additional one PRP sitting,5(27.7%) eyes
needed 2 sittings and 5(27.8%) eyes needed vitrectomy for non clearing
vitreous Haemorrage.

Category 1
Regression of newvessels
Category 2
Additional onesitting nedded
Category 3
Additional twosittings needed
Category 4
For vitrectomy

IV. Discussion:

With changing life style and more urbanization diseases like diabetes and have became more common,leading to a greater prevalence of diabetic retinopathy. DR is a leading cause of loss of vision,as its manifestations like macular oedema,vitreous haemorrhage,tractional retinal detachment,leads to visual mortality.PRP was first performed by

Meyer-Schwickerath and still remains the most effective treatment for diabetic retinopathy .It had a significant effect in stabilizing the disease and increasing the VA.

In our study out of 53 eyes,36 eyes(68%) were with PDR and 17 eyes(37%) were with very severe NPDR.However in similar studies made by Shreshta s[3],JJ.Kanski[5] , there is more incidence of NPDR than PDR. Probably most of our patients are from rular background they would have approached us in the later stages of DR,which may be the apt explanation for higher incidence of PDR.

In our study post PRP, VA was maintained within the baseline range in 39 eyes(73.3%),it was improved by 2 lines from baseline VA in 3 eyes(9.4%) and it was reduced to 6/36-6/12 in 9 eyes(17.35%) from the baseline VA. This

was correlated with Mohan Rema, ; Purushothaman Sujatha[4] the studies show that in (73%) eyes with good visual acuity (6/9) at baseline maintained the same vision at one-year follow-up.and in(27%) the causes of visual loss due to vitreous haemorrhage ,progression of cataract,pre retinal haemorrhage in macula,chronic macular odema and pre retinal fibrosis in macula .PRP produces destruction of hypoxic retina which is responsible for the production of vasoformative factors,their by converting it into anoxic retina.So by doing PRP procedure VA was maintained and improved without further deterioration.

After 6 weeks follow up there is regression of new vessels in 30 eyes (56.6%) suggesting that by doing PRP. Remaining 23(43.4%) eyes needed additional sittings,out of them 13(56.5%) eyes needed additional 1 PRP sitting,5 (21.7%)eyes needed 2 sittings and 5(21.8%) for non clearing vitreous Haemorrage. According to Arvid kumar Dubey[6] et all.. studies show there is regression of new vessels in 74 eyes out of 100 eyes and done additional sittings in 26 eyes.

V. Conclusion:

- The Visual stability after pan retinal Argon laser photocoagulation stressed the need of this treatment in Diabetic Retinopathy.
- Vision stabilized in majority of patients with very severe NPDR and PDRwhich are done in time.
- It played a major role to preserve the visual function,Regression of Neovascularization and prevention of further complications in DR.

References

[1]. Prevalence of diabetic retinopathy in India: Sankara Nethralaya Diabetic Retinopathy Epidemiology and Molecular Genetics Study report 2.

[2]. Raman R[1], Rani PK, Reddi Rachepalle S, Gnanamoorthy P, Uthra S, KumaramanickavelG, Sharma T.

[3]. Prevalence and Risk of Diabetic Retinopathy when Age at Diagnosis Is 30 or More years.Ronald Klein,MD:Barakara E.K.Klein,MD;Scot E.Moss,Matthew D.Davis,MD;David L.DeMets,PhD Arch Ophthalmol 1984;102(4):527-532,doi:10.1001/archopht.

[4]. Visual outcome of laser treatment in diabetic retinopathy Shrestha S1 , Karki DB2 , Byanju R3 , Malla OK4 , Shrestha SM5 et all Consultant Ophthalmologist, Nepal Eye Hospital.Kathmandu University Medical Journal (2007), Vol. 5, No. 1, Issue 17, 72-80.

[5]. Visual Outcomes of Pan-retinal Photocoagulation in Diabetic Retinopathy at

[6]. One-year Follow-up and Associated Risk Factor;Mohan Rema, DO, PhD; PurushothamanSujatha**,** DO; Rajendra Pradeepa, M Sc

[7]. Jack J Kanski ;Clinical Ophthalmology: Fifth Edition ;2003;439-455.

[8]. A proposed new classification for Diabetic Retinopathy:The concept of primary and secondary vitropathy.Arvind kumar dubey,MS,Pran Nath Nagpal,MS.and Benu Dubey,MS.Indian J of Ophthalmology.

Dr.Kosti Ravi Naini, et. al. "Role of Panretinal Photocoagulation in Diabetic Retinopathy." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(03), 2021, pp. 01-03.