Hindrances in management of diabetic retinopathy

Shrikant Deshpande[1], Prachi Shah[2,*], Yash Gala[3]

[1]Associate Professor, [2,3]Junior Resident, Dept. of Ophthalmology,

***Corresponding Author:**
Email: drprachi@live.com

Abstract

Aim: The aim of this study is to analyse the treatment modalities for diabetic retinopathy and their efficacy in a rural setting.

Materials and Methods: Patient selection: 50 patients who presented with diabetic retinopathy and who were treated for the same in the last 2 years were taken into consideration. All the patients were thoroughly evaluated which included careful history taking, vision assessment at the time presentation and after receiving treatment on 7th day, 1 month and 3 months, anterior segment examination, intro-ocular pressure measurement, posterior segment examination using indirect ophthalmoscopy and OCT analysis for quantitative assessment of macular edema.

Results: We found that patients having diabetes for around 10 years had milder retinopathy changes while the patients having diabetes for more than 15 years had more severe retinopathy changes. There was significant reduction in visual acuity of patients with retinopathy changes compared to their age normal values. Improvement in vision was significantly more in patients treated with intravitreal bevacizumab.

Conclusion: Diabetic retinopathy is a chronic progressive disorder. It takes several years to develop and further more years to manage. Due to the lack of awareness regarding the severity of this condition in a rural setting like ours the patients present at a very late stage. Early detection and early treatment is the crux of managing DR. It is therefore essential to educate the masses and motivate them for regular check-ups with an ophthalmologist once they are diagnosed with diabetes mellitus. It is important to counsel the patients that diabetic retinopathy cannot be cured in days or weeks. It takes months to years to control this condition. Besides the mainstay of the treatment is to prevent further damage. Patients are unaware about this and they expect a speedy visual recovery. This leads to dissatisfaction and hence patients fail to follow-up. Despite the fact that diabetic retinopathy is a curable condition we still face a lot of difficulties in managing it in a rural setting in developing countries.

Keywords: Diabetic retinopathy, Visual acuity, Macular edema, Bevacizumab, Rural setting

Introduction

Diabetic retinopathy (DR) is a common complication of diabetes and is a leading cause of visual impairment worldwide.[1] Recent studies have shown that one third patients with diabetes develop DR and approximately 7% patients develop diabetic macular edema.[2]

Diabetic retinopathy is a microvascular disorder involving the retina leading to changes such as hemorrhages, vascular leakage and neovascularization.

Diabetic macular edema is characterized by thickening of the retina in macular region due to leakage of fluid through the damaged capillaries.[2]

The impairment of vision and the degree of retinopathy changes is directly proportional to the duration of diabetes.[2] Therefore early detection and prompt treatment of diabetic retinopathy is the need of the hour. Apart from treatment a careful monitoring and regular follow up along with a strict control of blood glucose levels is essential to manage this chronic condition.

There are variable treatments available for management of diabetic macular edema which include laser photocoagulation and pharmacological measures such as intra-vitreal injections of bevacizumab and triamcinolone.[3]

In this study we have retrospectively analyzed the data of patients with diabetic retinopathy and the efficacy of treatment given.

Materials and Methods

This study was approved by the Institution for usage of the data before enrolling it.

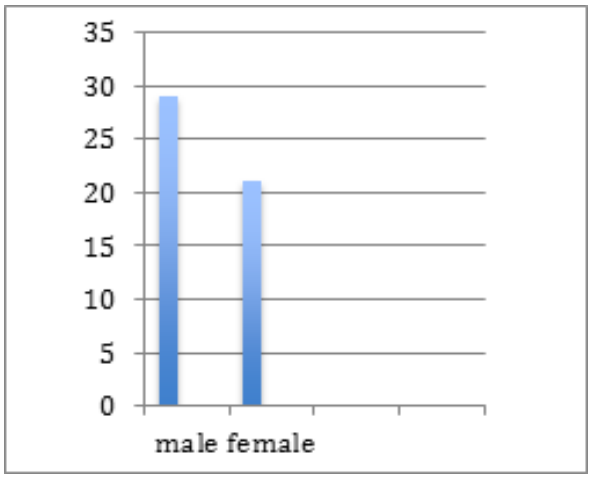
Patient selection: 50 patients who presented with diabetic retinopathy and who were treated for the same in the last 2 years were taken into consideration.

All the patients were thoroughly evaluated which included careful history taking, vision assessment at the time presentation and after receiving treatment on 7th day, 1 month and 3 months, anterior segment examination, intro-ocular pressure measurement, posterior segment examination using indirect ophthalmoscopy and OCT analysis for quantitative assessment of macular edema.

Results

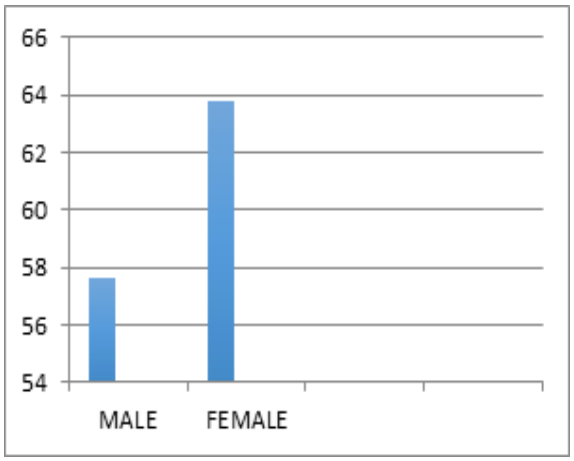
Sex distribution of the patients:

Our study comprised of more male patients than female patients.



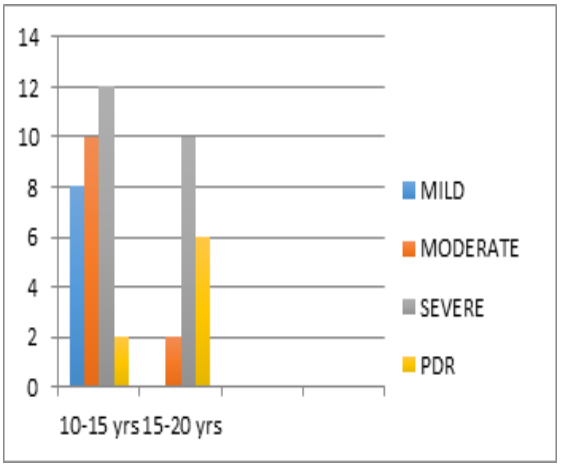
Mean age group of patients

The mean age group of patients showed that men presented at an earlier age group compared to women. Also men had less severe retinopathy changes than women. This could be because men are the working class in our population making them more vigilant and agile in diagnosing the fall in visual acuity.



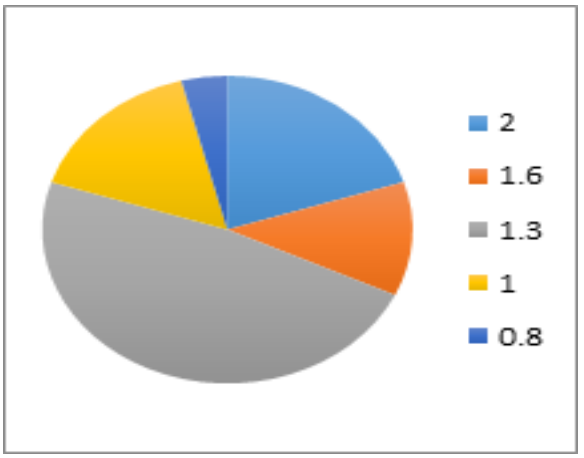
Duration of diabetes and grade of diabetic retinopathy

We found that patients having diabetes for around 10 years had milder retinopathy changes while the patients having diabetes for more than 15 years had more severe retinopathy changes.



Visual acuity distribution: (in LogMAR)

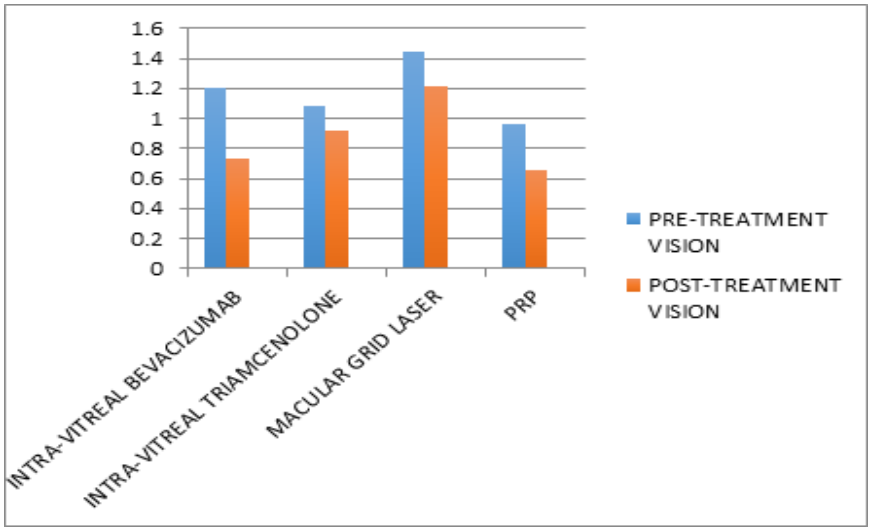
There was significant reduction in visual acuity of patients with retinopathy changes compared to their age normal values suggesting that diabetic retinopathy is a vision threatening disorder.

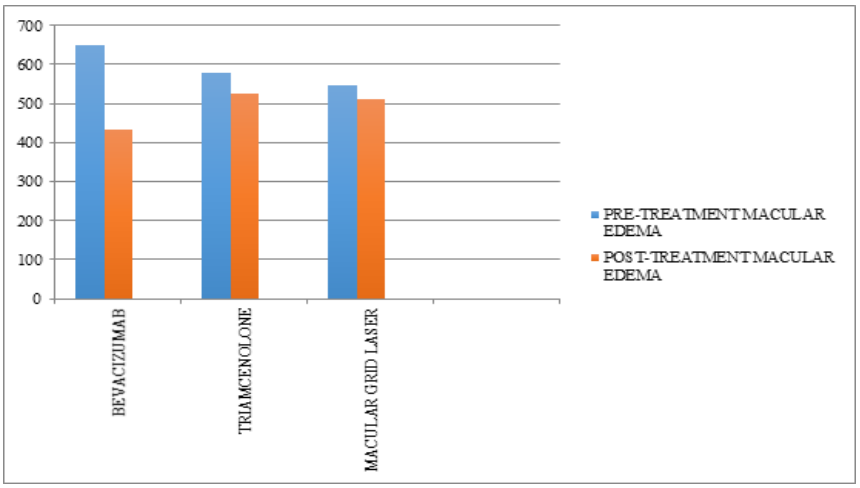


Pre and post treatment assessment

Our treatment algorithm was based on the severity of disease and tailored according to each individual patient. Milder cases were advised regular follow-ups and strict glycemic control. Patients with moderate to severe NPDR were taken up for a PRP. Patients with macular edema were treated with intra-vitreal injections or macular grid laser. Intra-vitreal bevacizumab (1.25mg) was the first choice of treatment and patients had dramatic improvement in their visual acuity and reduction in their macular edema. Patients who could not afford bevacizumab were given intra-vitreal injection of triamcinolone (4mg/0.1ml). Intravitreal steroids also improved the visual acuity of patients however the improvement was not as significant as that in bevacizumab. Injections were no repeated in the 3 months follow-up. In patients who did not come for regular follow-ups were treated with macular grid laser. Our study revealed that the amount of improvement in

vision was significantly more in patients treated with intravitreal bevacizumab.





Discussion

Diabetic retinopathy is a significant cause of visual disturbance worldwide. With the help of recent advances in the management of this condition, it is now possible to treat it. However there are a number of factors that decide the success rate of these treatment strategies.

The duration of diabetes was directly proportional to the grade of retinopathy changes and hence the visual acuity as well. Visual acuity was found to be less in patients having more severe DR changes and greater macular thickness.

The glycemic control of patients also had a direct relation to the severity of diabetic retinopathy. Patients not complying with the systemic treatment had more sever DR changes in lesser duration of time.

Most of the patients presented to us in a very late stage of the disease when the vision had fallen down to below 1 LogMAR unit i.e. at counting fingers. With the advancement of the severity of disease the prognosis becomes worse.

From the treatment strategies adapted by us, intra-vitreal anti-VEGF (bevacizumab) had the maximum success rate in terms of improving visual acuity.

The biggest difficulty we faced was the follow-ups. Few patients completely failed to follow up beyond a month while few came to us for follow-ups irregularly.

Conclusion

Diabetic retinopathy is a chronic progressive disorder. It takes several years to develop and further more years to manage. Due to the lack of awareness regarding the severity of this condition in a rural setting like ours the patients present at a very late stage. Early detection and early treatment is the crux of managing DR. It is therefore essential to educate the masses and motivate them for regular check-ups with an ophthalmologist once they are diagnosed with diabetes mellitus. It is important to counsel the patients that diabetic retinopathy cannot be cured in days or weeks. It takes months to years to control this condition. Besides the mainstay of the treatment is to prevent

further damage. Patients are unaware about this and they expect a speedy visual recovery. This leads to dissatisfaction and hence patients fail to follow-up.

Despite the fact that diabetic retinopathy is a curable condition we still face a lot of difficulties in managing it in a rural setting in developing countries.

References

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