

A Study of Patient Preferences with Regard to Laser versus Intravitreal Injections in the Treatment of Diabetic Macular Edema

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1. Introduction

- Diabetic retinopathy (DR) is a major cause of blindness among the working age group.
- According to the World Health Organization, India will become one of the major hubs of diabetic population during the next 2 decades; the number of cases of adult-onset diabetes mellitus will grow to nearly 80 million in 2030 from 18 million in 1995.¹
- Diabetic macular edema is the most common cause of visual loss in those with diabetic retinopathy and is increasing in prevalence globally.
- The prevalence of DME in patients with diabetic retinopathy is 2.7%–11%.²
- It depends on the type of diabetes and the duration of the disease, but for both types 1 and 2 after 25 - years duration, it approximates 30%.
- Systemic factors associated with diabetic macular oedema include longer duration of diabetes, higher systolic blood pressure, and higher hemoglobin A1C. The sole ocular factor associated with diabetic macular oedema is diabetic retinopathy severity as increasing severity is associated with increasing prevalence of diabetic macular oedema.³

Aim and Objectives

Aim

To identify treatment preferences of patients with diabetic macular edema having undergone laser and intravitreal injections.

Objectives

- 1) To find out the treatment preference (laser or injections).
- 2) To find out how often patients are willing to be treated, and how much vision they will sacrifice to avoid being treated every month.

2. Material and Methods

66 diabetic patients who attended the department of ophthalmology, tertiary hospital between September 2020 to November 2021 were included in this prospective case series. All cases were thoroughly evaluated on the basis of a detailed history and recorded examination including vision,

intraocular pressure (IOP), anterior segment examination, and fundus evaluation.

Study Setting:

- Study design: Prospective case series.
- Study population: All diabetic patients attending department of ophthalmology
- Study Place: MIMS hospital.
- Study duration: 15 months (September 2020 – November 2021)
- Sample size: 66 patients

Inclusion Criteria:

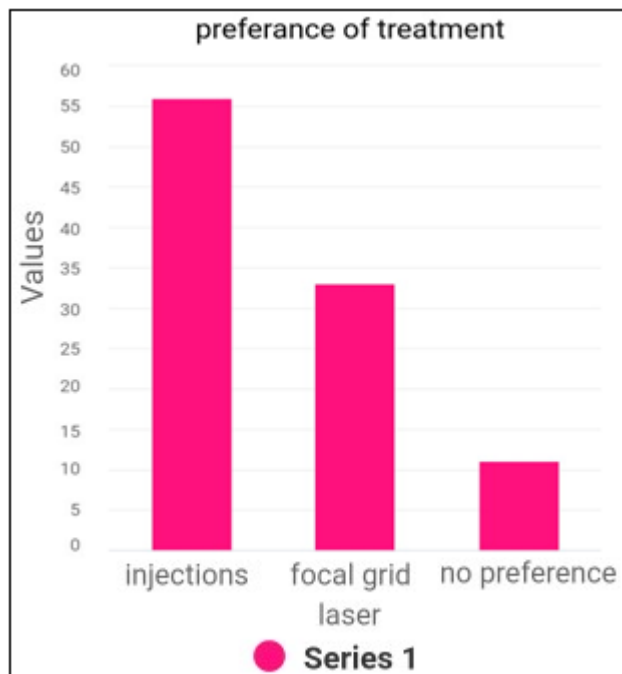
- Patients of age above 18 yrs.
- Patients who were diagnosed with diabetic macular oedema.
- Patients who are treated with focal grid laser treatment and intravitreal injections for diabetic macular oedema.

Exclusion Criteria:

- Patients who took prior panretinal photocoagulation (PRP) for proliferative diabetic retinopathy (PDR).

3. Results

- The mean patient age was 63 (range 30–91), with 34 (52%) males and 32 (48%) females participating.
- Results showed that 56% (37/66) of patients preferred injections, 33% (22/66) preferred focal grid laser, and 11% (7/66) had no preference.



- 50% (33/66) of patients also reported that focal grid laser treatment was easier for them to undergo, second to 38% (25/66) who reported injections were easier for them to undergo, and 12% (8/66) who had no preference.
- Regarding vision, 83% (55/66) of patients said that they would be willing to have 15 - 16 injections to gain 2 lines of vision. When asked to pick monthly injections with slightly better vision or 4 visits with laser and slightly less vision, 78% (52/66) chose monthly injections with better vision, as opposed to 21% (14/66) who chose fewer visits with less visual gain.
- 86% (56/66) of patients reported that they would be willing to sacrifice zero lines on the Snellen eye chart to receive 4 lasers as opposed to 15 - 16 shots, followed by 8% (5/66) who answered that they would sacrifice 2 lines and 6% (4/66) who would sacrifice one line on the Snellen eye chart.

4. Discussion

- Diabetic macular edema is one of the leading causes of vision loss in diabetics.
- DME has a vast impact on the quality of life in patients suffering with this disease due to visual acuity loss over time. This vision loss can lead to inability to drive or hold a job, leading to psychological symptoms of depression and anxiety.
- Rees et al. examined the association between vision loss and DME with psychological outcomes such as symptoms of anxiety and
- Depression in patients with diabetes.⁴

5. Results

- The results of the survey show that there is no statistically significant difference between patient preferences for laser or intravitreal injection treatment.

- 76% of patients are willing to be treated a maximum amount of times in order to maintain their vision, and 91% would not give up any vision to receive fewer treatments.
- Patients express a strong overall preference for treatment schemes that allow the highest degree of visual acuity and stability that can be achieved. Treatment schemes that result in optimal visual outcomes are preferred, even if it involves a high treatment burden.⁵

References

- [1] Wild S, Roglic G, Green A, et al. Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. *Diabetes Care* 2004; 27: 1047–53.
- [2] Klein R, Klein BE, Moss SE, Cruickshanks KJ. The Wisconsin epidemiologic study of diabetic retinopathy. XV. The long - term incidence of macular edema *Ophthalmology*.1995; 102: 7–16.
- [3] Browning DJ, Fraser CM, Clark S. The relationship of macular thickness to clinically graded diabetic retinopathy severity in eyes without clinically detected diabetic macular edema *Ophthalmology*.2008; 115: 533–900
- [4] G. Rees, J. Xie, E. K. Fenwick et al., “Association between diabetesrelated eye complications and symptoms of anxiety and depression, ” *JAMA Ophthalmol.*, vol.134, no.9, pp.1007–1014, 2016.
- [5] G. Miller, G. Budoff, K. W. Jeng - Miller, H. F. Fine, D. B. Roth, and J. L. Prenner, “Retina specialists treating diabetic macular edema recommend different approaches for patients than they would choose for themselves, *Ophthalmic Surgery, Lasers and Imaging Retina*, vol. 47, no.6, pp.544–554, 2016.