

Frequency of Retinopathy in Newly Diagnosed Diabetes Mellitus Type II Patients

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ABSTRACT

Objective: To record the frequency of retinopathy in newly diagnosed diabetes mellitus type II patients.

Study Design: Cross Sectional survey

Place and Duration of Study: This study was conducted at the Department of Ophthalmology, Helper's Eye Hospital, Quetta from 1st July 2015 to 31st December 2016.

Materials and Methods: A total of 200 newly diagnosed Type II diabetes mellitus patients of both gender and age between 30-65 years were enrolled in the study. Fundoscopy was performed by single consultant ophthalmologist to avoid any biasness while diagnosing retinopathy. The frequency of retinopathy in cases with newly diagnosed diabetes mellitus type II was noted.

Results: In our study, out of 200 cases, 80%(n=160) were between 30-50 years of age while 20%(n=40) were between 51-70 years of age, mean age was 47.13 ± 6.10 years, 55% (n=110) were male and 45% (n=90) were females, 19.5%(n=39) had diabetic retinopathy in newly diagnosed cases of type II diabetics.

Conclusion: Frequency of diabetic retinopathy shows a significant incidence in type 2 diabetes mellitus, these findings will be helpful for timely management of the morbidity for saving our patients from visual loss.

Key Words: Type II diabetes mellitus, Newly diagnosed, Frequency, Diabetic retinopathy

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INTRODUCTION

Diabetes mellitus is known as one of the chronic diseases; 1.82 out of every 1,000 young subjects are suffering with this disorder.¹ Pakistan stands at 7th position among those countries with the highest number of hyperglycemic cases.

The estimation of diabetics in our country was 6.9 million in 2007 and it was projected as 11.5 million by 2025 and it will improve the ranking IDF list by reaching at 5th number. It also has association with micro-vascular complications, including diabetic retinopathy (DR). It is one of the major causes of visual loss in cases between the age of 20-60 years of age while it is found present in >70% of cases with diabetes mellitus type 2 who survived for more than two decades with this disease.³

In Western world, diabetic retinopathy is estimated between 4.7 to 13.3% of the partial sight and blind registered population.

The retinopathy is steadily progressive and advances from mild to moderate abnormalities then it advances to severe non-proliferative diabetic retinopathy and then lastly proliferative retinopathy.

This morbidity may ends up in haemorrhage of retina, retinal detachment, glaucoma and lastly blindness. Various factors include types and diabetes is identified as an element for the development of diabetic retinopathy and its progression.

Duration and types of diabetes mellitus, gender, age of the patients, glycosylated haemoglobin, BMI, hypertension, smoking and positive micro-albuminuria are included as risk factors of this morbidity.⁴

Increasing evidence also indicates that after 15 years with diabetes, around 2% of cases develop blindness, and around 10% may become visual handicap.⁵⁻⁶ Approximately all cases with type1 diabetes mellitus and >60% with type 2 during their first two decades of disease, have retinopathy irrespective of their control of glycemia.

The rate of visual loss is 25 times higher in diabetic patients. Among numerous markers of retinopathy, glycosylated hemoglobin level is an important factor. Vast majority of the patients remain undiagnosed or not diagnosed for retinopathy, however, this study was planned with the view that variability also exists regarding frequency of diabetic retinopathy in newly diagnosed diabetes mellitus in data on DR nationally and internationally, however, this trial was aimed to reassess the frequency of diabetic retinopathy in newly diagnosed type II diabetics, the results of our study will be helpful for timely management of the disease.

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MATERIALS AND METHODS

In this cross Sectional survey, we enrolled 200 newly diagnosed Type II diabetes mellitus patients of both gender and age between 30-65 years. We excluded those cases already diagnosed with diabetic retinopathy. This study was conducted in Ophthalmology Department, Helper's Eye Hospital, Quetta from 1st July 2015 to 31st December 2016. An informed consent of the patients was obtained to include their data in the study. Demographic information like name, age, gender & address were noted, patient's detailed history about diabetes mellitus was asked and fundoscopy was performed by single consultant ophthalmologist to avoid any biasness for diagnosis of retinopathy. The frequency of retinopathy in cases with newly diagnosed diabetes mellitus type II was noted, all this information was taken on a proforma. SPSS 16.0 was used to compute the data of this study.

RESULTS

In our study, out of 200 cases, 80% (n=160) were between 30-50 years of age while 20% (n=40) were between 51-70 years of age, mean age was 47.13 ± 6.10 years. There were 55% (n=110) were male and 45% (n=90) were females, 19.5% (n=39) had diabetic retinopathy.

Table No.1: Frequency and percentage of the patients

| Variable | Number | Percentage |
|-----------------------------|--------|------------|
| Age | | |
| 30-50 | 160 | 80.0 |
| 51-70 | 40 | 20.0 |
| Gender | | |
| Male | 110 | 55.0 |
| Female | 90 | 45.0 |
| Diabetic retinopathy | | |
| Yes | 39 | 19.5 |
| No | 161 | 80.5 |

DISCUSSION

According to World Health Organization(WHO) data, our country has 5.2 million diabetic patients, and this magnitude is forecasted to increase and reach upto 5th highest in the world by the year 2030.⁷ The frequency of diabetic retinopathy in our setup was required to be re-evaluated so that timely management of the disease may be possible by setting a regular criteria of follow up to save our populations from this disability.

Majority of the patients in our study were between 30-50 years i.e. 80% (n=160) and 47.11 ± 7.36 was mean age of the patients, it is in accordance with a local study conducted at Karachi recorded 58.32% of the cases between 30 to 40 years, mean \pm sd was 42 years.⁸

In our study, 55% of the cases were male and 45% were females, these findings are similar to Agarwal et al recorded male cases in (60%) and female in 40%.⁹ We recorded 19.5% (n=39) of the cases having diabetic retinopathy, these findings are comparatively slightly higher than reported in other trials. Agarwal et al⁹ found 11.71% of the cases with diabetic retinopathy in newly diagnosed type II diabetic, which is comparable. Another study by Wahab and others 15% of the cases were having diabetic retinopathy within 60 days of diagnosis of type 2 diabetes mellitus(DM), this data is also near to our results.¹⁰

Many other trials are showing variant incidence; Abdollahi and co-workers¹¹ recorded 13.8%, while Rema and colleagues reported these findings as 5.1% and 7.3% respectively.^{12,13} Klein et al recorded 10.2% cases of diabetic retinopathy in newly discovered type 2 diabetic cases in Beaver Dam Eye Study. Kohar and associates¹⁴ reported 39% prevalence of retinopathy.

Two other studies conducted in Australia recorded 14%-20% diabetic retinopathy in newly diagnosed type 2 diabetics.

The variation in the literature regarding retinopathy in newly discovered type 2 diabetics might be due to the fact of variation in time duration between onset and detection of DM.

CONCLUSION

Frequency of diabetic retinopathy shows a significant incidence in type 2 diabetes mellitus, these findings will be helpful for timely management of the morbidity for saving our patients from visual loss.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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