

A Research Study on Frequency of Retinopathy in Recently Diagnosed Type 2 Diabetes Mellitus

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Abstract

Objective: The purpose of this study is to find out how common retinopathy is in newly diagnosed patients with type 2 diabetes.

Methods: This cross-sectional research included 100 newly diagnosed patients with type 2 diabetes patients who attended the diabetic health center at Federal Govt. Polyclinic, postgraduate medical institute, Islamabad from 1st March 2022 to 31st July 2022. The research precluded those who had type-1 diabetes, high blood pressure, retinal artery obstruction, retinal venous obstruction, renal glomerulonephritis, or hemoglobinopathies retinopathy. Following pupillary dilation with Mydriacyl, a comprehensive fundoscopic examination had been performed, and retinopathy was classified as background, preproliferative, or proliferative.

Results: The respondents' average age had been 47 years, with 65% men and 35% women. At the onset of the disease, 9% of patients had been diagnosed to have retinopathy.

Conclusion: The said research reveals a greater incidence of retinopathy in recently diagnosed people with type 2 diabetes. This highlights the significance of performing a thorough ophthalmic examination on all diabetic individuals at the time of assessment.

INTRODUCTION

Globally, the prevalence of diabetes is a serious human healthcare issue that is almost epidemic in scope. Globally, an estimated 462 million individuals are affected by type 2 diabetes, corresponding to 6.28% of the world's population.¹ One of the most prevalent and harmful effects of diabetes mellitus is diabetic retinopathy.²⁻³ In Pakistan as well as the rest of the world, it is one of the main causes of blindness. It is usual to observe type 2 diabetes mellitus' micro vascular problems at the time of identification because the condition may already exist even before definitive diagnosis is obtained.¹²⁻³¹ At the time of type 2 diabetes identification, the total incidence of diabetic retinopathy range from 5 to 35%.⁴ The onset of diabetic retinopathy-related blindness can be postponed with prompt diagnosis and effective treatment. As early identification and treatment might reduce its severity, recently diagnosed diabetes individuals should be checked for retinopathy.⁶ The goal of this research was to ascertain the prevalence of retinopathy in patients with type-2 diabetes who had just received a diagnosis in a secondary healthcare setting.

PATIENTS AND METHODS

From 1st March 2022 to 31st July 2022, the research was carried out at Federal Govt. Polyclinic, postgraduate medical institute, Islamabad. 100 type 2 diabetes mellitus patients who regularly visited the Federal Govt. Polyclinic diabetic clinic made up the study group. The research would include all individuals who had just received a type 2 diabetes mellitus diagnosis. The study excluded patients who had hypertension, retinal artery obstruction, retinal vein obstruction, retinal vasculitis, or sickle cell

retinopathy. A thorough clinical examination was conducted, which included computing body mass index. The WHO research subject on diabetes' diagnostic criteria had been used to identify type 2 diabetes mellitus.

Mydriacyl was instilled into each eye one drop at a time until pupillary dilation, and slit lamp ophthalmoscopy was used to do a thorough fundoscopic examination. Background, preproliferative, and proliferative retinopathy were the three classifications for retinopathy (see below). Monofilaments were used to test for neuropathy. Proteinuria was checked in the urine for either presence or absence. The SPSS version 23 was used for the statistical analysis.

Background retinopathy had been classified as having microaneurysm, dot/blot haemorrhages, hard exudates, and retinal edoema. Venous loops/beading, cotton wool patches, black blot haemorrhages, and intra-retinal micro vascular anomalies were all seen in preproliferative retinopathy. Neovascularization, vitreous haemorrhages, and ocular and retinal rupture were all symptoms of proliferative retinopathy.

RESULTS

One hundred patients participated in the trial over a six-month timeframe. Ages ranged from 35 to 65, with the bulk falling into the fifth decade (Table 1). There were 35 female individuals and 65 male participants. At the time of assessment, the average patient was 47 years old (men 46.17, women 48.36). Males had a mean BMI of 25.2kg/m²0.663 while females had a mean BMI of 26.1kg/m²0.515.

Fig 1. Types of Retinopathy.

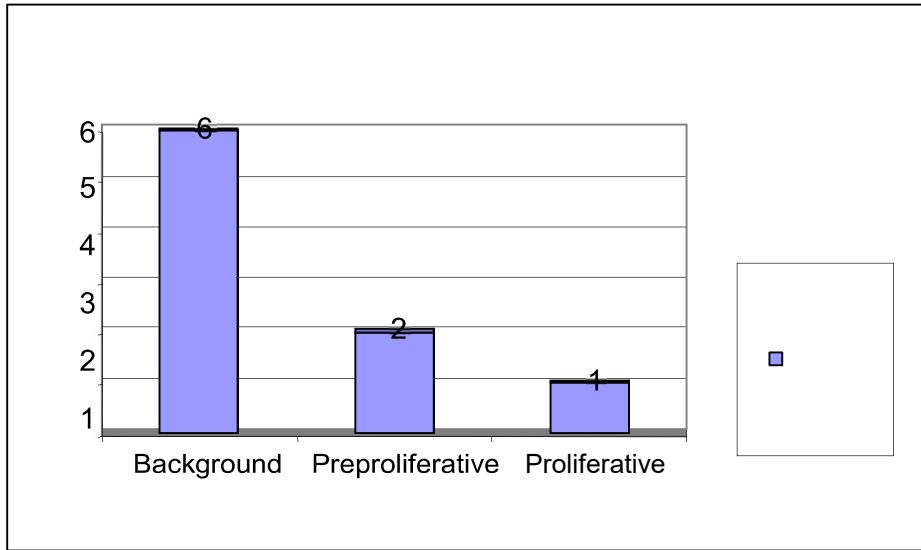


Table 1. Age allocation of patients

Age in years	No of Patients	Percentage (%)
16-40 Years	07	7%
41-60 years	57	57%
61-80 years	36	36%

Ultimately, diabetic retinopathy was discovered in 9 persons. Of these, three have been female and six have been male (Table 2). Six out of nine individuals had preexisting retinopathy, with two having preproliferative and one having proliferative retinopathy (Fig 1).

Table 2. Gender Percentage of Diabetic Retinopathy in Study Group

	No. of patients	Percentage (%)
Male	06	6%
Female	03	3%

There were 4 men and 2 women among the 6 cases with preexisting retinopathy. One participant had preproliferative retinopathy, one had proliferative retinopathy, and there were two individuals overall with preproliferative retinopathy.

DISCUSSION

This study's finding that 9% of recently identified type 2 diabetic individuals had diabetic retinopathy is comparable to research from South India⁷ and Australia. 8 15% of recently identified diabetics in Pakistan, according to a related research, had retinopathy at the time of their identification. ¹ One theory is that type 2 diabetes may have gone untreated for a greater amount of time in the UK. In our analysis, the mean age of the individuals at assessment had been significantly lower than in the UKPDS study. Another possibility would be that because Pakistan and the UK have various healthcare administrations, patients in Pakistan and patients in the UK may pursue healthcare help at various times. Even though it can be challenging to pinpoint the causes of such disparities in occurrence percentages across human demographics, other influencing factors such as race, age, the method used to diagnose diabetic retinopathy, access to medical care, and other variables may also have had a role. The fact that this research was clinic-based and had a limited sample size had been its constraints. This study's advantage is that it is founded on a thorough fundoscopic investigation.

CONCLUSION

In this study, there was a very higher incidence of retinopathy in people with recently established type 2 diabetes mellitus. This underlines how crucial it is for all diabetic individuals to undergo a thorough eye evaluation at the time of identification.

Ethnic difference is likely the reason of this discrepancy. At the time of type 2 diabetes identification, retinopathy is more common in some Europeans than others⁸. In the United Kingdom Prospective Diabetes Study (UKPDS), 35% of participants with type 2 diabetes had been found to experience retinopathy. This is a lot higher than what our analysis found. Hence, it would seem that our individuals' incidence of retinopathy at the time of type 2 diabetes identification is smaller than that documented in the UK¹⁰ and USA¹¹ but comparable to that described from Australia⁷ and India. ⁶

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