

Incidence of Diabetic Retinopathy Amongst Persons who Screened Positive for Diabetes in five Neighborhood Eye Camps in Northern Multan Pakistan

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ABSTRACT

Aim: Lack of community data on diabetes-related blindness in Pakistan. In five neighborhood eye camps in northern Multan, Pakistan, we assessed the incidence of diabetic retinopathy amongst persons who screened positive for diabetes.

Methods: In Multan, Pakistan's largest metropolis, five community-based eye camps were created in the May of 2021. Study participants had to be at least 32 years of age. They were tested for diabetes and go to an eye doctor for assessment of their diabetic retinopathy. We identified five eye clinics in Pakistan's largest metropolis, Multan, between May 2020 and April 2021 in Multan eye Hospital. All respondents were required to give verbal informed permission at the time of the assessment. It was determined that diabetic retinopathy was the most important outcome measure, which was classified into no proliferative, serious NPDR, and diabetic nephropathy retinopathy. It must have been predicated on a patient assessment.

Results: There were 925 people tested for diabetes. 18% had diabetes: 2.9% had type I and 16.8% had type II. There were 138 individuals who went to the hospital for an ophthalmological checkup. Diabetic Retinopathy was found in 16.8% of the patients. There was a higher increase of diabetic retinopathy among persons with type I diabetes, those who had been diabetic for longer periods of time, and women. One of the most prevalent types of diabetes. Maculopathy (18.7 percent) and proliferative diabetic retinopathy were the two most prevalent forms of diabetic retinopathy, respectively (6.8 percent).

Conclusion: We need more systematic study and population-based studies to establish the occurrence of diabetic retinopathy in Pakistan and the potential things that affect to it.

Keywords: Diabetic Retinopathy, Screened Positive for Diabetes, Northern Multan Pakistan.

INTRODUCTION

Having diabetes, the probability of blindness increases by 27 times compared to healthy persons. When it comes to diabetic retinopathy, it is the main source for new instances of vision problems and blindness in individuals aged 23 to 77 [1]. Nearly 26% of patients with type 1 diabetes will develop diabetic retinopathy during the first six years, as well as about 100% within two decades [2]. There are around 23 percent diabetic retinopathy cases diagnosed at the time of diagnosis, and more than 62 percent develop the condition over the first two decades of diabetes. Asian Member states have a considerably higher prevalence of diabetes than advanced societies [3]. In Pakistan, there are more than 151 million residents. Lack of community data on diabetes-related blindness in Pakistan. In five neighborhood eye camps in northern Multan, Pakistan, we assessed the incidence of diabetic retinopathy amongst persons who screened positive for diabetes. Despite Pakistan's ranking as the 7th-highest burden of diabetes, inhabitants' data on diabetic retinopathy and vision problems in Pakistan show that more than 12 percent of the adult population has diabetes [4]. Unfortunately, there is no information about retinal degeneration (retinopathy). Surgery center data is provided. Individuals with diabetes who attended five neighborhood eye camps in Northern Multan, Pakistan, were examined for diabetic retinopathy [5].

METHODOLOGY

We identified five eye clinics in Pakistan's largest metropolis, Multan, between May 2020 and April 2021 in Multan eye Hospital. As a multi-ethnic metropolis, Multan's 15 million residents represent all of Pakistan's main ethnic groupings, including Sindh is, Pashtoon and Balochis. Participants in the research had to be at least 32 years old and have attended one of the eye camps. Nine hundred and twelve of them (n=925) consented to participate. It was determined whether or not they had diabetes, and those confirmed to have the condition were referred to an eye doctor for diabetic retinopathy testing centers.

All respondents received their verbal agreement. To assess intraocular pressure and undertake a dilated external resource funduscopy, an ophthalmologist used a 91-diopter portable equipment and Topcon slit light to examine the anterior portion of the participants' eyes. Whenever peripheral abnormalities were detected or anticipated, oblique ophthalmoscopy was used in addition to this diabetic retinopathy was either present or absent. Ophthalmoscopy was used to determine whether significant clinical macular edema existed. It was possible to get high-quality stereoscopic pictures of the macula and optic disc by using a Topcon fundus camera on diabetes patients. The ocular fundus was not photographed in all of its typical photographic areas. Photographs were taken, nevertheless, of the most relevant results for the categorization of diabetic retinopathy. It was based on patient evaluation, with photographs being used to verify the categorization. This study was conducted using Epi Info 7.1 to collect and analyze the data. For the response variable, basic probabilities were computed for each group, as well as percentages for each type of diabetes.

RESULTS

In the eye camps, we examined a total of 925 individuals. 163 of them (18.6%) had diabetes, of which 2.9 percent had type I and 17.8 percent had type II (Table-1). More over half the diabetes patients (109/163) attended the hospital and had their condition checked. Table-2 lists their age, gender, and other features. These were the ones we looked at. Diabetic retinopathy was seen in 18 of the participants (16.8%). (Table 3). Nine of them (48.3%) have been between ages of 35 and 52. There had been a higher increase of diabetic retinopathy in those with Type I diabetes (45.5%) comparing to those with Type II Diabetes (27.9%). (15.2 percent). As a result ($p = 0.45$), there was no statistically significant increase between them. On average, females had an increased chance of developing diabetic retinopathy (17.5 percent) than males (15.6%), but statistically irrelevant ($P = 0.84$). One percent, 14.3 percent, 19.8 percent, 38.6 percent and 43.9 percent, respectively, of diabetic retinopathy cases were found among

individuals diagnosed as well as those who had diabetes mellitus for 12-15 years and those who had it for >16 years. The nonproliferative form of diabetic retinopathy accounted for 77.6 percent of cases, following by maculopathy (18.7 percent) and proliferative diabetic retinopathy (6.8 percent) (Table 4). In a study of 17 patients having diabetic retinopathy, one required pan-retinal photocoagulation and follow-up and strict diabetes control, while three required focused lasers + grid to macula + follow-up and strict control of diabetes."

Table 1:

| Type of DM | % | Frequency |
|---------------|------|-----------|
| Non-diabetics | 2.8 | 19 |
| IDDM | 17.9 | 21 |
| NIDDM | 84.8 | (n = 925) |

Table 2:

| Features | No | Percentage |
|--------------------|----|------------|
| Age group | 13 | 12.2 |
| 29-40 | 36 | 33.5 |
| 41-50 | 37 | 34.5 |
| 51-60 | 21 | 19.6 |
| 61-70 | 7 | 6.7 |
| = 71 | 48 | 44.7 |
| Gender | 62 | 57.6 |
| Man | 64 | 57.6 |
| Woman | No | % |
| Profession | 14 | 14.2 |
| Housewife | 36 | 33.5 |
| Working | 24 | 24.3 |
| Jobless | 25 | 22.5 |
| Type of diabetes | | |
| IDDM | 97 | 9.4 |
| NIDDM | 24 | 92.8 |
| Period of Diabetes | 36 | 23.4 |
| Afresh identified | 37 | 31.7 |
| < 6 years | 12 | 32.6 |
| 6-10 years | 9 | 11.3 |
| 11-15 years | 26 | 7.6 |
| = 16 | 24 | 9.4 |

DISCUSSION

Diabetic retinopathy occurrence in this research was 17.9% (17/119), which really is less than the 24-65 percent observed in these other studies performed in Multan, Pakistan, as well as other places. Many of the other studies were conducted in hospitals and were not performed under the same conditions, which might explain the discrepancies [6]. This is due to the decreased random sample and non-representative character of the sample [7]. First, patients with eye problems were tested for diabetes. Diabetics are more susceptible to eye problems than non-diabetics. One-third of people with diabetes didn't get screened, which can contribute to an overstatement or underestimating of the prevalence of diabetic retinopathy, depending on how many no responders had diabetic retinopathy [8]. A slightly greater occurrence of diabetic retinopathy was seen in females than in males in our research (16745),

however the difference is not significant ($p = 0.09$). 78.5 percent of diabetic retinopathy patients were NPDR, and it was the most prevalent type. A research done by Khan in Multan found that 78% of cases had NPDR, compared to 93 percent, 87.4-96.1 percent, and 67% in studies undertaken in Canada, Bangladesh, and Yemen. Among all retinopathies, the frequency of PDR was quite low, we observed (6.9 percent). In Pakistan and wherever else, care facility investigations have shown lower rates [9]. Patients with dm and sensitivity to different internal and external eye variables depend on the severity of diabetic retinopathy. It's possible that the fact that the overwhelming majority of our subjects being young explains the decreased frequency of maculopathy. Diabetic retinopathy has been linked to diabetes for a long time. Around 60% of patients with Type 1 and 40% among those with Type 2 diabetes have proliferative diabetic retinopathy after 20 years [10].

CONCLUSION

This study confirmed that the occurrence of diabetic retinopathy was greater in persons who prolonged having prolonged time of the illness. Additional inhabitants research is needed to investigate the occurrence of diabetic retinopathy in Pakistan, as well as the warning processes that influence to it.

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