ORIGINAL ARTICLE

Frequency of Diabetic Retinopathy in Type II Diabetics presenting at DHQ Hospital Sahiwal

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ABSTRACT

Aim: To find out the Frequency of diabetic retinopathy in type II diabetics presenting at DHQ Hospital Sahiwal

Methods: This study was cross sectional and conducted at the Department of Ophthalmology DHQ Hospital Sahiwalfrom December 2014 to June 2015. Total 340 patients with history of DM either male or female were recruited for this study.

Results: Mean age of the diabetics was 47.55±9.13 years. Diabetic retinopathy was found in 57(17%) patients followed by nonproliferative retinopathy was found in 50(87.72%) patients and proliferative retinopathy was found only in 7(12.28%) patients. More male diabetics 37(26.43%) were victim of DR as compare to female diabetics 20(10%). Highly significant (P=0.001) association of DR with duration of DM was seen.

Conclusion: It is concluded in this study that DR was commonly prevalent in Southern Punjab and the most common type of DR was non-proliferative retinopathy. DR frequently prevalent in male diabetics as compare to female diabetics and significant association of duration of DM with DR was found.

Keywords: Diabetes mellitus; diabetic retinopathy; macular edema.

INTRODUCTION

With a continuously increasing incidence, diabetes mellitus (DM) is one of the most common endocrine disease globally. According to W.H.O, there were 171million individuals throughout the world living with DM in the year 2000. In year 2030, this number may increase to 366 million individuals with the most significant increase occurring in developing countries.[1] While the most of the individuals affected with DM in developed countries are elderly, the majority of individuals in developing countries are relatively younger (46 years to 64 years of age), which intensifies the consequences of DM in these societies.[2]

Diabetic retinopathy(DR) is one of major causes of DM and it is also one of the leading cause of blindness among the working population of developed and developing countries.[3] The clinical signs of DR depend on the type of diabetes and occur in nearly all individuals who have had type-1 DM for 20 years and in nearly 80 percent of those having type-2 DM with the same duration[4].

Loss of quality of life and productivity for the individuals with DR can lead to additional socio-economic burdens on the community[5]. However, the loss of vision due to DR can be decreased by up to 90% by appropriate and timely treatment[6]. The type of DM and duration of DM, gender, glycemic control, systemic hypertension, age, BMI, smoking, serum lipids and microalbuminuria are associated with the progression and development of DR[2].

Among the individual with type IIDM, 21% have retinopathy at diagnosis and more than 60% have DR during the first two decades of the disease[7]. DM occurs at a much younger age in South Asian countries than it does in developed countries[8]. More than 10% of the adult Pakistani population has DM and the country ranks 6thamong the countries having the highest burden of this disease[9].

This study is aimed to determine the frequency of DR in type II diabetics presenting at DHQ Hospital Sahiwal. Results of this study may help for the early management of DR in type II diabetics and to reduce the morbidity of such patients.

MATERIALS AND METHODS

This study was cross sectional and conducted at the Department of Ophthalmology DHQ Hospital Sahiwalfrom December 2014 to June 2015. Total 340 patients with history of DM either male or female were included in this study. Patients with heart disease and hypertension were excluded from the study. Permission was taken from Institutional

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Review Committee before the start of study and written informed consent was taken from every patient.

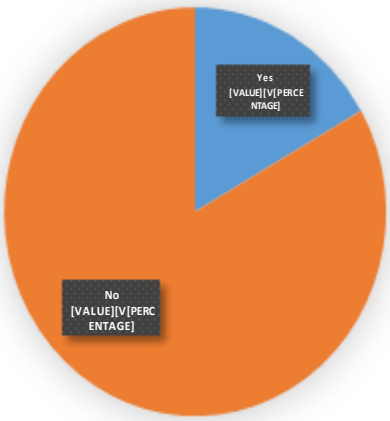
Examination of the anterior and posterior segments of the patient's eyes by using a slit-lamp and a 90-dioptre hand held, indirect fundus viewing lens was done. The presence or absence of any DR was recorded. DR was classified as Nonproliferative Retinopathy and Proliferative Retinopathy. Nonproliferative Retinopathy was further graded as mild, moderate and severe. Grading of the DR was based on clinical examination and according to the early treatment of diabetic retinopathy study (ETDRS) protocol.

All the collected data was entered in SPSS version 18 and analyzed. Numerical variables were presented as mean and SD and categorical variables were presented as frequencies and percentages. Chi-square test was used to assess the associations between the different variables. P-value ≤0.05 was taken as significant.

RESULTS

In this study 340 patients with type-II DM were included. Mean age of the patients was 47.55±9.13 years. Out of 340 type-II diabetics, retinopathy was seen in 57(17%) patients (Fig. 1).Out of 57 patients with DR, non-proliferative retinopathy was found in 50(87.72%) patients followed by mild non-proliferative retinopathy in 23(46%) patients, moderate non-proliferative retinopathy in 17(34%) patients and severe non-proliferative retinopathy in 10(20%) patients. Proliferative Retinopathy was seen only in 7(12.28%) patients (Table 1).

`Fig. 1: Prevalence of DR in type II Diabetics



Stratification in relation to gender was done and among the 140(41.18%) male patients, retinopathy was found in 37(26.43%) patients and among the 200(58.82%) female patients, retinopathy was found 20(10%) patients. Significant (Pvalue 0.001) association of retinopathy with gender was seen (Table 2).

Patients were divided according to duration of DM and two groups were made. In group with1-7 years duration of DM, out of 136(40%) patients, retinopathy was found in 12(8.82%) patients. In group with8-15 years duration of DM, out of 204 (60%) patient's retinopathy was seen in 45 (22.06%) patients. Significant (Pvalue 0.001) association of retinopathy with duration of DM was seen (Table 3).

Table 1: Types of diabetic retinopathy (n = 57)

Type of diabetic retinopathy	**n**
Nonproliferative Retinopathy	50(87.72%)
Mild Nonproliferative Retinopathy	23(46%)
Moderate Nonproliferative Retinopathy	17(34%)
Severe Nonproliferative Retinopathy	10(20%)
Proliferative Retinopathy	7(12.28%)
Total	57(100%)

Table 2: Association of diabetic retinopathy with gender

Gender	**Diabetic Retinopathy**		**Total**
	Yes	No	
Male	37(26.43%)	103(73.57%)	140(41.18%)
Female	20(10%)	180(90%)	200(58.82%)
Total	57(17%)	283(83%)	340

P value 0.001

Table 3: Association of DR with duration of DM

Duration of DM(yrs)	**Diabetic Retinopathy**		**Total**
	Yes	**No**	
1-7	12(8.82%)	124(91.18%)	136(40%)
8 - 15	45(22.06%)	159(77.94%)	204(60%)
Total	57(17%)	283(83%)	340

P value 0.001

DISCUSSION

DR is a costly and progressive condition which is associated with chronic hyperglycemia and is potentially vision threatening.[11]Microangiopathy and capillary occlusion underline the pathogenesis of the disease[12]. It is one of the major causes of blindness in type II diabetics globally[13].

In our study mean age of thediabetics was47.55 ± 9.13 years which is comparable with the study of Jamilet al[13] who reported mean age of diabetics as 50.95±10.12 years. In our study prevalence of DR was 17% similar (15.7%) prevalence of DR was documented by Jamal et al[15].In another study Hussainet al[16] also reported

prevalence of DR in 12% type II diabetics. Some other studies were also reported comparable prevalence of DR[17,18].ButKayaniet al[19]reported higher (26.1%) prevalence of DR in type II diabetics. Some international studies also reported a higher prevalence of DR as 35% and 36% respectively[10,20]. Variations could primarily be attributed to the different settings and the different base of population involved.

In this study the commonest (87.72%) form of DR was non-proliferative followed by mild in 46%, moderate in 34 % and severe in 20% and 12.28% patients found with proliferative DR. In study of Bharathiet al[21] non-proliferative DR was present in 85.3% patients which are similar with our study. Some other studies also reported same results[20,22]. Mahar et al, reported frequency of non-proliferative DR as 72.61% which is not in favour of our study[23]. Jamal-u-Din et al reported that in 76.5% patients non-proliferative DR was found in which is alsonot in favour of our study. Same study was also reported Mild non-proliferative DR in 35.3% patients, Moderate non-proliferative DR in 29.4% patients and severe non-proliferative DR in 11.8% patients[15].

In present study, male diabetics are more victim of DR as compare to female diabetics (26.43% vs 10%) and the difference was statistically significant (P value 0.001). Similarly Ramanet al[24] reported significantly (P. value 0.002) higher proportion of male diabetics with DR as compare to female diabetics (21.1% vs 14.6%). But in one study, female diabetics had a slightly greater prevalence of DR than male diabetics (16.4% vs. 14.9%) although the difference was not statistically significant (p: 0.83)[15].

In this study, a statistically significant difference (P value 0.001) in the prevalence of DR between those diabetics with less years of disease duration and those with longer disease period. Several studies have found duration of DM to be an important predictor of DR[25]. In one study by Memon et al[26] DR was found in 21.2% patients with having duration of DM <5 years, 27.15% patient having DM 5-10 years and 27.15% patients having 11-15 years of duration of disease. Findings of this study were in favor of our study.

CONCLUSION

It is concluded in this study that DR was commonly prevalent in Southern Punjab and the most common type of DR was non-proliferative retinopathy. DR frequently prevalent in male diabetics as compare to female diabetics and significant association of duration of DM with DR was found.

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