ORIGINAL ARTICLE

Frequency of Diabetic Retinopathy in Newly Diagnosed Cases of Type 2 Diabetes Mellitus

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ABSTRACT

Aim: To determine the frequency of Diabetic Retinopathy (DR) in newly diagnosed cases of type 2 Diabetes Mellitus.
Settings: Department of Medicine, Combined Military Hospital, Bahawalpur.
Duration of study: From: July 2016 to December 2016.
Methodology: A total of 100 newly diagnosed cases of type II diabetes mellitus between 30-65 years of age of either gender were include in the study. Patients were followed for detailed history and then fundoscopy was performed. We ensured to perform fundoscopy by a single consultant ophthalmologist so that any bias may be avoided while diagnosing diabetic retinopathy.
Results: Mean age was calculated as 45.31±8.14 yeas, 54(54%) were male and 46(46%) were females. Frequency of diabetic retinopathy in newly diagnosed type II diabetes mellitus was recorded in 14(14%) cases.
Conclusion: The frequency of retinopathy in newly diagnosed cases of type 2 diabetes mellitus not as higher but early identification in newly diagnosed cases is necessary and every newly diagnosed case should be examined properly.
Keywords: Newly diagnosed cases of type II diabetes mellitus, diabetic retinopathy

INTRODUCTION

Diabetes mellitus (DM) is included among global epidemics, and authors[1] hypothesized that by 2030 diabetes mellitus may be recorded in more than 550 million people and among them 90% of the cases will have type II diabetes mellitus. Yau JW, Rogers SL and others[2] recorded that around 35% (93 million people) are having diabetic retinopathy whereas vision-threatening DR was recorded in 28 million (around 10%), worldwide[2]. Among working aged population in UK, Diabetic retinopathy was found as a leading cause of blindness[3]. However, early diagnosis and management of modifiable etiological factors may reduce its progression.

A number of risk factors are associated with the progression of diabetic retinopathy, it includes hyperglycemia,[4] hypertension, duration of diabetes mellitus, and dyslipidemia.[5-7] However, univariate logistic regression models recorded the following variables as associated with retinopathy at the time of first screening: lower socioeconomic status, lower BMI, male sex, , increased levels of HbA1c, a longer in screening to first retinopathy and hypertension[8].

Eight population-based trials suggested that the diabetic retinopathy is found positive in 28.7% (approximately) in diabetics[9]. Tapp RJ and others are of the view that diabetic retinopathy varies between 5-35% of the cases with newly diabetic type II diabetes[10]. However, a local study recorded these findings in 15% of the cases[11]. In another local study there are also similar results by calculating diabetic retinopathy in 12.75% cases presenting with newly diagnosed type II diabetes[12].

The above conflicting findings were required to be re-evaluated so that recent data may be recorded.

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MATERIAL AND METHODS

A total of 100 newly diagnosed cases of type II diabetes mellitus (who diagnosed for type II diabetes mellitus for the first time in their life) between 30-65 years of age of either gender were include in the study. We excluded cases with vitamin B deficiency, lead poisoning and those who were already diagnosed with diabetic retinopathy. The informed consent of the patients was obtained. We recorded demographic information e.g., age of the patients, gender, contact No. and residential address. Patients were followed for detailed history and then fundoscopy was performed. We ensured to perform fundoscopy by a single consultant ophthalmologist so that any bias may be avoided while diagnosing diabetic retinopathy. The frequency of retinopathy in patients with newly diagnosed diabetes mellitus type II was noted, all this information was taken on a Performa. All required statistical analysis test was performed to analyze the data.

RESULTS

Age distribution of the patients was done, it shows that 34(34%) were between 30-40 years of age, 29(29%) were between 41-50 years of age, 32(32%) were between 51-60 years of age while 5(5%) were between 61-65 years of age, mean±sd was calculated as 45.31±8.14 years (Table 1).

Gender distribution of the patients shows that 54(54%) were male and 46(46%) were females (Fig. 1)

Frequency of diabetic retinopathy in newly diagnosed type II diabetes mellitus was recorded in 14(14%) cases while 86(86%) had no findings of diabetic retinopathy (Table 2).

Fasting plasma glucose (mg/dl) in diabetic retinopathy was calculated as 211.45±47.58 while those without diabetic retinopathy had 139.24±28.54, HbA1c (%) in diabetic retinopathy was 9.1±2.4 while 7.6±1.8 in those without diabetic retinopathy (Table 3).

Type of retinopathy was recorded as 9(9%) for background retinopathy, 3(3%) had preoperative retinopathy and 2(2%) had proliferative retinopathy.

Table 1: Age distribution (n=100)

Age (in years)	n	%age
30-40	34	34
41-50	29	29
51-60	32	32
61-65	5	5
Mean±SD.	45.31±8.14	

Fig. 1: Gender

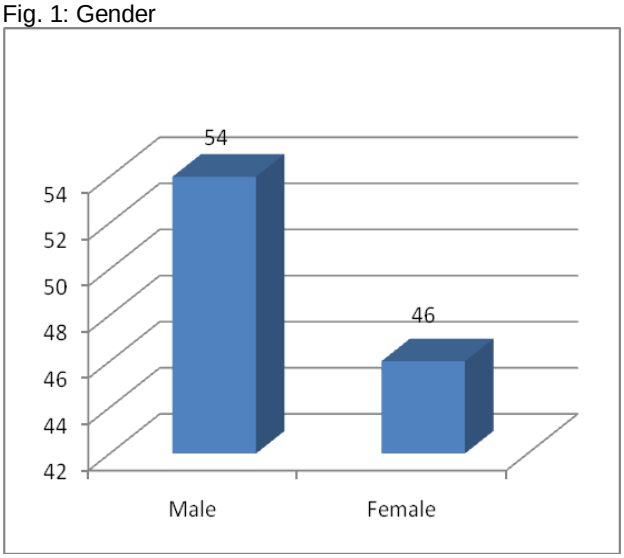


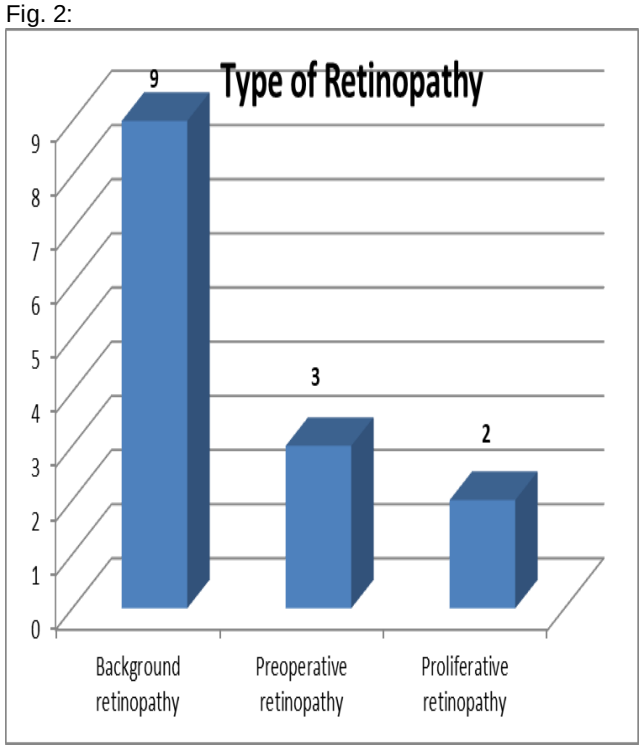
Table 2: Frequency of diabetic retinopathy in newly diagnosed type ii diabetes mellitus (n=100)

Diabetic retinopathy	n	%age
Yes	14	14
No	86	86

Table 3: Comparison of fasting plasma glucose and hba1c level in patients with and without diabetic retinopathy (n=100)

Parameter	Diabetic retinopathy	Without diabetic retinopathy
Fasting plasma glucose (mg/dl)	211.45±47.58	139.24±28.54
HbA1c(%)	9.1±2.4	7.6±1.8

Fig. 2:



DISCUSSION

Diabetic retinopathy is considered to be a major complication in diabetics. In our country, DM in last decade was recorded as 5-7%.[13] However, the rate of diabetic retinopathy in diabetics was recorded as 12%.[11] In this study, we recorded 14% of the cases with diabetic retinopathy. In literature, there are studies comparable with our findings, and few of the local studies were done in our local population.

Agarwal et al[14] compare the occurrence of diabetic retinopathy in newly diagnosed diabetic patients in general practice and recorded 11.71% of the cases with diabetic retinopathy in newly diagnosed type II diabetes mellitus, which is comparable.

The epidemics from Brazil (35.4%)[15], Sri Lanka (31.3%)[16] and Saudi Arabia[17] were recorded as 30%. A higher rate was recorded in South African population i.e., 40.3%[18]. The possible reason may be a younger age of that population and the shorter duration of disease.

Various other studies have shown varied incidence; Rema et al[19] reported 5.1%, Abdollahi et al[20] recorded 13.8%. Klein et al reported the prevalence of 10.2% in newly discovered type 2 diabetic patients in Beaver Dam Eye Study. Kohar and associates[21] have reported 39% prevalence of retinopathy.

The importance of blood pressure, glycaemia, and duration of diabetes mellitus as risk factors for diabetic retinopathy are well established.[22-23] Male gender is also recorded as a significant risk factor in other trials[22]. Results regarding the association between Body Mass Index and risk for diabetic retinopathy are not consistent, with both negative[24] and positive associations[25,26].

Though, in our study, the frequency of retinopathy in newly diagnosed cases of type 2 diabetes mellitus not as higher as in South Africa, Saudi Arabia and Sri Lanka but early identification in newly diagnosed cases is necessary and every newly diagnosed case should be examined properly.

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