

Original Research Article

ASSESSMENT OF DIABETIC RETINOPATHY AMONG THE DIABETES MELLITUS TYPE –II PATIENTS AT TERTIARY CARE HOSPITAL OF HYDERABAD

ABSTRACT:

Background: Diabetes Mellitus is the major and leading cause of mortality among the local population of Asian countries. Routinely increase in the number of diabetes mellitus can produce financial and health crises.

Aim and Objective: This study aims to evaluate the diabetic retinopathy among the diabetes mellitus type-II at tertiary care hospital of Hyderabad.

Materials and Methods: The current research was conducted for the period of 06 months at Department of Medicine, tertiary care hospital of Hyderabad. Total 158 patients were selected with confirmed report of diabetic retinopathy. Demographic data was taken from all participants. Eye examination was performed by ophthalmologist and results were analyzed.

Results: After proper collection of data, results were compiled accordingly, total 158 participants were included in the study, from them 92 were males, 66 females. 49 patients were fall in the category of 33-39years of age group, 87 patients were having less than 1 year diabetic history, 66 participants had moderate level of HbA1c, 79 people only use Oral medicine for diabetic control, 109 patients had hypertension, 01 patients was reported with heart failure, whereas 81 patients had reported NPDR (Non-Proliferative Diabetic Retinopathy) and 77 had PDR (Proliferative Diabetic Retinopathy)

Conclusion: It was concluded from the current study that diabetic retinopathy was associated with long term complication of diabetes and considered as indication for severe type of diseases associated with diabetes. Patients of NPDR with very low care can develop PDR. So the patients of NPDR were closely monitored through Ophthalmologist and Diabetologist.

KEY WORDS: HbA1c, Retinopathy, Diabetes, Ophthalmologist, PDR

INTRODUCTION:

Diabetes Mellitus is the major and leading cause of mortality among the local population of Asian countries. [1] Routinely increase in the number of diabetes mellitus can produce financial and health crises. [2, 3] Diabetes is actually a metabolic syndrome associated with polyurea, polyphagia and polydipsia, due to dysfunction of beta cells of pancreas. Diabetes mellitus can be managed through different oral hypoglycemic agents, diet control, exercise and insulin therapy. [4] If it is not managed properly on time, it can produce severe type of complication such as neuropathy, retinopathy, nephropathy and heart related problems. [5] Diabetic retinopathy can cause by the over

accumulation of glucose molecules in the retina and causes impaired vision and sometime blindness. [6] In United States of America, Diabetic retinopathy is the leading cause of blindness among the adults with different age. Diabetic retinopathy is more common among the DMT1 patients as compared to DMT2 patients. [7] According to latest survey, the newly diagnose case of retinopathy are more among type-ii patients. The Wisconsin epidemiologic study of retinopathy and DCCT (Diabetes Control & Complication Trials) elaborates that if the level of sugar is under given control limits, the chances of complication may also decreased. [8, 9] According to various association working on diabetes and its management, gave the similar type of consequences. There is no any authenticate literature available which proof that control glycemic level cannot produce any type of micro and macro complications in either type of diabetes. [10] The major reason for such type of condition is the adaptation of various intensive therapies such as restriction on dietary products, severe type of exercise and self medication of herbal therapies. Generally, Diabetic retinopathy is divided in to two major classis including NPDR (Non-Proliferative Diabetic Retinopathy) and PDR (Proliferative Diabetic Retinopathy) and these can be further divided into number of classes, depending on clinical and pathological condition of eye. [11, 12] Non-Proliferative Retinopathy is characterized by abnormalities in retinal blood vessel and hemorrhages that leads to Ischemia & hypo-perfusion of retina. In this type of retinopathy, patients did not report any type of symptoms or complain. They only have impaired vision or color blindness. [13] If the ischemic damage occur within retina due to angio-genic factors that leads to Neo-vascularization of the retinal surface. Neo-vascularization raptures the blood vessel which leads to bleeding within retinal surface and in vitreous body.[14] This bleeding induces retinal detachment and irreversible visual impairment occurs. Micro complication of diabetes can be managed properly, if these are diagnosed properly on time. So, the proper diagnosis is the major tool to get rid of such type of complication or loss of vision in retinopathy.

METHODOLOGY:

The current research was conducted for the period of 06 months at Department of Medicine, tertiary care hospital of Hyderabad. Total 158 patients were selected with

confirmed report of diabetic retinopathy. Demographic data including gender, socio-economic values, diabetes history, treatment options, history of obesity and hypertension, smoking history and chronic diseases, glycemic control level according to HbA1c level was taken from all participants. Eye examination was performed by ophthalmologist at Department of Ophthalmology that includes eye fundus examination by ophthalmoscopy with slit-lamp and mediocrisis of eyes were taken by using oral drops prior to inspection. Data was analyzed by using statistical software SPSS. 24.00 version.

RESULTS:

After proper collection of data, results were compiled accordingly. All demographic data was assembled in various tabular forms as given as under.

GENDER	NUMBER	FREQUENCY
MALE	92	58.22%
FEMALE	66	41.77%

Table no 01: gender wise distribution of participants.

AGE GROUP	NUMBER	FREQUENCY
18-25	12	7.59%
26-32	35	22.15%
33-39	49	31.01%
40-46	34	21.51%
47-53	21	13.29%
54-60	07	4.43%

Table no 02: Age wise distribution of study subjects

DIABETES	NUMBER	FREQUENCY
TYPE-I	43	27.21%
TYPE-II	118	74.68%

Table no 03: Types of Diabetes among study subjects

SOCIO-ECONOMIC VALUE	NUMBER	FREQUENCY
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LOW	71	44.93%
MODERATE	64	40.5%
HIGH	23	14.55%

Table no 04: Socio economic values of study subjects

DIABETIC HISTORY	NUMBER	FREQUENCY
1 year or less	87	55.06%
5 year or less	42	26.58%
10 years or less	29	19.35%

Table no 05: History of Diabetes among study subjects

HbA1c	NUMBER	FREQUENCY
LOW	19	12.02%
MODERATE	66	41.77%
HIGH	73	46.20%

Table no 06: HbA1c level of participants

TREATMENT OPTIONS	NUMBER	FREQUENCY
DIET CONTROL	15	9.49%
EXCERCISE	24	15.18%
ORAL MEDICINE	79	50%
INSULIN	40	25.31%

Table no 07: treatment options adopted by participants

CO-MORBIDITES	NUMBER	FREQUENCY
HYPERTENSION	109	68.98%
ISCHEMIC HEART DISEASE	17	10.75%
VASCULAR DISEASE	28	17.72%
HEART FAILURE	01	0.63%
RENAL FAILURE	03	1.89%

Table no 08: co-morbidities observed among participants

BMI	NUMBER	FREQUENCY
LOW	22	13.92%
MODERATE	97	61.39%
SEVERE	39	24.68%

Table no 09: Body Mass Index of study subjects

DIABETIC RETINOPATHY	NUMBER	FREQUENCY
NPDR	81	51.26%
PDR	77	48.73%

Table no 10: Diabetic Retinopathy condition among study subjects.

DISCUSSION:

A study was carried out on the incidence of diabetic retinopathy in a selective community was almost 19%. These findings are compatible with other studies. In United Kingdom 22% diabetic people develop retinopathy. Another study was carried out for the period of 9 years that develop the retinopathy up to 30%. DME detected 42% of eyes with proliferated diabetic retinopathy. [6, 7] Current study was related to reduce the risk level of diabetes with specified control level of glycemic level in the blood. For the better control of diabetic complication, Insulin therapy was given to the patients with Non-proliferative diabetic retinopathy. Disease ratio was quite less among the patients with poor control of glycemic level. [9, 10] Various factors were also associated for the development of non-proliferative diabetic retinopathy that includes age, gender and socio-economic values. These fluctuating factors were diagnosed by the ophthalmologist. Many medicines were too much expensive and patients develop adherence by dropping the doses. [12, 13] 14 current studies also support the complications of diabetes that were developed through improper control. If the protein excretes from the kidneys, so might cause kidney failure. 15 Framingham study showed that there was no any authentic relation in the ischemic heart failure and diabetic complication 16. Higher rate of heart disease was observed among the patients with very low glycemic control. [15] Retinopathy was also considered as indication of severe complication. Screening for retinopathy helps physician to diagnose the diabetic condition and patients without any authentic sign and symptoms of retinopathy might control their diabetes for longer period of time and control their glycemic level in order to reduced complications.

CONCLUSION:

It was concluded from the current study that diabetic retinopathy was associated with long term complication of diabetes and considered as indication for severe type of diseases associated with diabetes. Patients of NPDR with very low care can develop PDR. So the patients of NPDR were closely monitored through Ophthalmologist and Diabetologist.

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