ORIGINAL ARTICLE

An Assessment of Awareness Towards Diabetic Retinopathy among Diabetic Patients of DHQ Hospital Jhelum, Punjab

UMAIR TARIQ MIRZA[1], SIDRAH RIAZ[2], ABEER QAMAR[3], MIRZA SAAD ULLAH BAIG[4], TARIQ MEHMOOD[5], MUHAMMAD TARIQ KHAN[6]

[1]Assistant Professor Ophthalmology, Mohi-uddin Islamic Medical College Mirpur AJK
[2]Associate Professor Ophthalmology, AkhterSaeed Medical & Dental College, Lahore
[3]Medical Officer Medicine, DHQ Hospital, Jhelum
[4]Final Year MBBS Student Medicine, Mohi-uddin Islamic Medical College Mirpur AJK
[5]Senior Consultant Ophthalmologist, Al Ehsan Eye Trust Hospital
[6]Professor of Ophthalmology, AkhterSaeed Medical and Dental College Lahore
Correspondence to Dr. Umair Tariq Mirza, Email: utmirza@gmail.com, Cell: 03009523007

ABSTRACT

Aim: To assess awareness about diabetic retinopathy among diabetic patients

Place and duration of study: The patients coming at Medical OPD, District Headquarter Hospital Jhelum, fulfilling inclusion criteria were included, over the period six months from1st October 2019 to 30th March 2020.

Methods: A predesigned questionnaire of twenty (20) questions was developed keeping the objectives in mind. A total of 102 patients were included for the study fulfilling inclusion criteria. A Cross sectional survey. Non-probability conventional sampling method was used. The results were analyzed by SPSS 20. The frequencies were presented in form of tables and bar charts.

Results: There were 54(53%) males and 48(47%) females. Age range was 20 to 79 years. Family history of diabetes was positive in 60 (58.80%) patients. Duration of diabetes was up to 5 years in 31 (30.4%), 5 to 10 years in 35(34.3%), 11 to 20 years in 29(28.4%) and above 21 years in 7(6.9%). Out of 102 patients 53 (52%) were known hypertensive. The education level was primary or below 59 (57.8%) and 43(42.2%) had secondary school degree or above. About 20% patient had opinion that diabetic retinopathy can cause irreversible visual loss. The fact that ocular complication can result in diabetic patients was known by 69(67.6%) patients. Nearly 33 (32.4%) known diabetics had no idea about need of ocular examination whereas 31(30.4%) thought monthly ocular examination is required, it was annual 11(10.8%) or two yearly for 4 (3.9%) and 23 (22.5%) patients thought to seek medical advice when there is some visual complaint.

Conclusion: The middle-aged diabetics patients are more aware of the fact that diabetes can affect eyes. The main source of information for diabetic patients regarding awareness of diabetes and its ocular effects are medical persons, family and friends. According to our study, in this district of Punjab, hypertension was important association among diabetic patients and education level seems to play an important role regarding awareness of the fact that diabetes can affect visual acuity. There is a need to enforce strategies and measures to raise the understanding and acknowledgement of diabetic retinopathy among diabetic patients.

Keywords: Diabetes Mellitus, Awareness, Diabetic Retinopathy, Hypertension.

INTRODUCTION

Diabetes mellitus is a systemic disease. Diabetes mellitus has been categorized into four types depending upon insulin resistance and insulin deficiency. Based on findings from various states, the global incidence of diabetic mellitus was certified to be 8% in 2011 and will most probably increase to 10% by 2030[1]. Uncontrolled diabetic mellitus, and hypertension are some of the risk factors that have been observed in diabetic patients for diabetic retinopathy[2]. Being a major public health issue in 21st century, diabetes has taken a huge toll on resources and health of human beings. However, diabetes and other chronic conditions including heart disease, schizophrenia, depression and HIV/AIDS are still overlooked by individuals, communities and states[3]. The developing countries hold ¾ of global strain for diabetes. The prevalence of diabetes in our country Pakistan ranged from 7.6 to 11%[4].

Diabetic retinopathy is the most significant factor in causing vision impairment mostly among diabetic patients of working age group. Eye vessels establish clots, leaks, close off, thicken and develop micro aneurysms[5]. The microangiopathy leads to tractional retinal detachment, vitreous hemorrhage and fibrovascular proliferation[6].

According to guidelines diabetic people should be comprehensively examined for dilated eye once in a year because the longer an individual suffers from diabetes; more are the chances for him to get diabetic retinopathy[7]. Recent surveys have proved that monitoring random sugar levels can result in effective diabetes management[8] but nearly 21% of patients don't go for routine retinal examination as recommended by NICE guidelines[9]. Different levels of alertness among diabetic patients have been suggested from various countries around the globe. For instance, 37% of diabetic patients in Australia were aware of eye diseases related to diabetic mellitus and even minor level of consciousness (27%) was observed among diabetic patients of India in contrast to findings in US being 65% diabetic patients[10]. Different risk factors are found to associated with diabetic retinopathy are gender, smoking, duration of diabetes, hypertension, diabetic kidney disease, cardiac disease, age, glycemic control, dyslipidemia, microalbuminuria and anemia[11].

Received on 30-09-2020
Accepted on 28-12-2020

MATERIALS AND METHOD

The awareness of diabetic retinopathy was studied in District Health Quarter hospital Jhelum, located in province of Punjab (Pakistan). Diabetic patients were selected on basis of convenient sampling technique from Outpatient department (OPD). The duration of study was six months from October 2019 to March 2020. All known diabetic patients above 20 years of age were included in study whereas patients below 20 years or above 80 years were excluded. Male and female diabetic patients of all age groups were included in the study. All diabetic patients who came in eye department but could not complete the form were subsequently excluded from the study.A total of 102 patients were finalized for the study. A structured questionnaire, in English, was given to all patients and assistance was provided for translating the desired questions in Urdu in case of any difficulty. Approval for the study was obtained from the Ethical Review Committee of the concerned hospital before starting the study. A consent form was provided to the patients and only those who agreed to participate were included in the study. Pilot testing was done on 20 patients to assess the reliability of questionnaire. Demographic profile and information relating to disease including gender, age, source of information regarding complication of Diabetes, family history and duration was recorded on questionnaires. Questions relating to knowledge, attitude and practice were asked and patient's response was categorized as Yes, No or Don't know. Two questions included more than 3 options were, frequency of a diabetic patient undergoing eye checkups and treatment options available for diabetic retinopathy.

RESULT

There were 54 (53%) males and 48(47%) females (table 1). Age rang was 20 to 79 years (table 2). Family history of diabetes was positive in 60 (58.80%) patients (table 3). Duration of diabetes was up to 5 years in 31(30.4%), 5 to 10 years in 35(34.3%), 11 to 20 years in 29 (28.4%) and above 21 years in 7(6.9%) (table 4). Out of 102 patients 53 (52%) were known hypertensive (table 5). The education level was primary or below 59(57.8%) and 43 (42.2%) had secondary school degree or above. About 20% patient had opinion that diabetic retinopathy can cause irreversible visual loss. The fact that ocular complication can result in diabetic patients was known by 69(67.6%) patients. Nearly 33 (32.4%) known diabetics had no idea about need of ocular examination whereas 31(30.4%) thought monthly ocular examination is required, it was annual 11(10.8%) or two yearly for 4 (3.9%) and 23 (22.5%) patients thought to seek medical advice when there is some visual complaint.

Table 1:Gender distribution

Gender	Number	%age
Male	54	52.90
Female	48	47.10
Total	102	100

Table 2: Age groups

Age	Number	%age
20-29	4	3.90
30-39	9	8.80
40-49	22	21.60
50-59	33	32.40
60-69	21	20.60
70-79	13	12.70
Total	102	100

Table 3: Family history of diabetes

Family H/O Diabetes	Number	%age
Yes	60	58.80
No	42	41.20
Total	102	100

Table 4: Disease duration

Duration of Diabetes	Number	%age
1-10 Years	66	64.71%
11 Years & Above	36	35.29%
Total	102	100.00%

Table 5: Hypertension in diabetic patients

HTN	Number	%age
Yes	53	52
No	49	48
Total	102	100

Table 6: Education Levels

Education	Number	%age
Uneducated	35	34.30
Primary	24	23.50
Secondary	28	27.50
Graduate	15	14.70
Total	102	100

Table 7: Socioeconomic status

Socioeconomic Status	Number	%age
Poor	32	31.40
Middle	66	64.70
Rich	4	3.90
Total	102	100

Table 8: Sources of awareness

Source of Awareness	Number	%age
Internet	8	7.80
Newspaper	3	2.90
Family & friends	22	21.60
Doctors	34	33.50
Hospital	13	12.70
Paramedic	3	2.90
Don't get any	19	18.60
Total	102	100

Half of patients 51(50%) were unaware about treatment options for diabetic ocular complications and laser was most popular option for patients 15(14.7%) who had some knowledge about ocular treatment. The sources of awareness regarding knowledge of diabetic eye disease were doctors for 34(33.3%), friends and family member for

22 (21.6%), hospital for 13(12.7%) and internet for 8(7.8%). 61 (59.80%) patients were aware that early treatment can prevent visual loss in such patients and 41(41.20%) had no idea about that (table 6). Total 63 (61.8%) had no history of previous ocular examination. Out of 102, 66(64%) belonged to middle class, 4(3.9%) were rich and remaining 32 (31.4%) were poor (Table 7). The table 8 showed level of awareness and doctors were main source of information regarding diabetic retinopathy. Most of patients were aware of diabetic ocular complications irrespective of education levels (Fig 1). Awareness level of different socioeconomic classes is shown in bar chart (Fig 2).

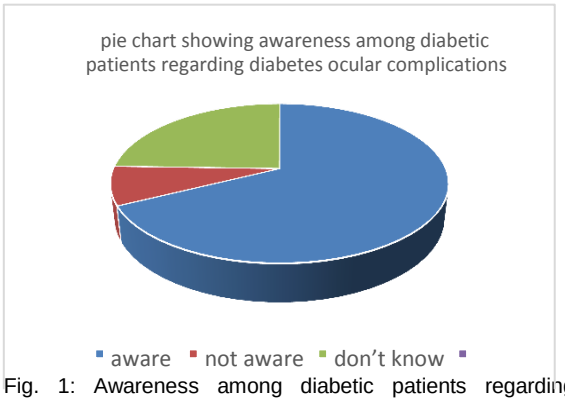

Fig. 1: Awareness among diabetic patients regarding diabetes ocular complications

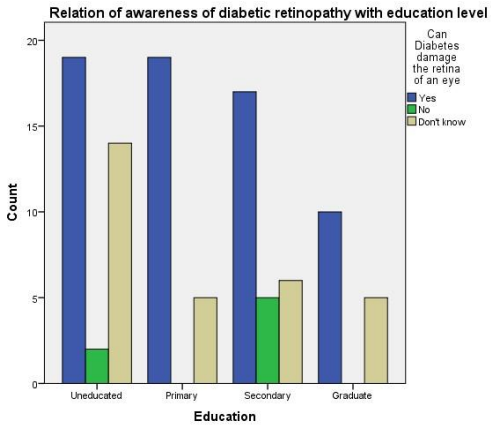

Fig. 2: Relationship of awareness and education level

DISCUSSION

The lack of adequate awareness about diabetic retinopathy is a significant factor that could cause interference in appropriate management of diabetes related visual complications. Health is a wealth, but patients don't appreciate the worth of this wealth till its lost. The best strategy is prevention, that is better than cure.

According to WHO guidelines there is a well-developed health care strategy and referral instructions regarding diabetic retinopathy at primary health care level in some developed countries[12]. The early referral can save the patients from blinding ocular complications.

There are multiple factors which affect level of awareness of patients regarding diabetes complications like socioeconomic status[13], level of education, culture and ethnic variations but our study found that the main influential factor is education. As a matter of fact, high levels of qualification are strongly connected with higher levels of awareness of diabetic mellitus. The diabetic patients with higher qualification are more concerned about diabetic retinopathy as compared to diabetic patients with relatively low levels of qualification[14]. Level of qualification was an integral reason that was strongly connected with awareness of diabetic retinopathy[15].

Our study shows that out of total 102 respondents 69(67.6%) knew that diabetes mellitus affects eyes. Awareness among males was slightly higher than females (54% in males and 46% in females). There are different sources of knowledge of ocular complications of diabetes like general practitioner doctors, mass media and relatives of diabetic patients. In our study it was found that 42% of the patients got the information from their doctors, followed by 27.5% from family and friends. Despite the great level of knowledge and consciousness about diabetic retinopathy in the studies, the level of compliance by diabetic patients with attitudes to decrease the risk of diabetic retinopathy was quite low. Most of research findings revealed that the diabetic patients should be referred to routine eye testing after every six months or at least once in a year. Globally, low compliance of patients has been observed regarding attendance of eye clinics on routine basis[16]. In our study 66 (67.6%) patients believed that a diabetic patient needs an eye check up on regular bases.

The main reason of diabetic patients for not having early diabetic retinopathy screening was lack of knowledge and awareness about diabetic retinopathy. According to various reports, other factors include cost of testing, being afraid of knowing bad things concerning their eyes and lack of enough time to opt for examination. The finding warrants more investigation to convince diabetic patients to comply with vision assessment in addition to retinal examination after every 12 months as prescribed international instructions[17]. This study finds that 36.2% of the respondents believed there should be a monthly eye check, followed by 18.8% only when affected and 14.5% yearly. 24.8% of the respondents did not know when to go for their eye checkup.

The general practitioners need to follow guidelines and an adequate approach for imperative referral to ophthalmologists. The complications of diabetic retinopathy gradually get severe with prolonged duration of diseases and it becomes mandatory for general practitioners to spread information and awareness on diabetic retinopathy at early stage of diagnosis[18]. Moreover, campaigns in terms of public health consciousness are required to be carried based on adequately planned strategies. The diabetic retinopathy is evidently the main factor of vision impairment and blindness around the globe[19]. Factors for noncompliance with drugs, poor follow-up and guarded visual outcomes despite available treatment options should be subjected to further research[20].

CONCLUSION

The middle-aged diabetic patients are more aware of the fact that diabetes can affect eyes. The main source of information for diabetic patients regarding awareness of

diabetes and its ocular effects are doctors, family and friends. According to our study, in this district of Punjab, hypertension was important association among diabetic patients and education level seems to play an important role regarding awareness of the fact that diabetes can affect visual acuity. There is a need to plan and adopt comprehensive strategies and measures to raise the understanding and acknowledgement of diabetic retinopathy among diabetic patients.

REFERENCES

1. Chua J, Lim CXY, Wong TY, Sabanayagam C. Diabetic retinopathy in the Asia-Pacific. The Asia-Pacific Journal of Ophthalmology. 2018;7(1):3-16.
2. Bakkar MM, Haddad MF, Gammoh YS. Awareness of diabetic retinopathy among patients with type 2 diabetes mellitus in Jordan. Diabetes, metabolic syndrome and obesity: targets and therapy. 2017;10:435.
3. Alzahrani SH, Bakarman MA, Alqahtani SM, Alqahtani MS, Butt NS, Salawati EM, et al. Awareness of diabetic retinopathy among people with diabetes in Jeddah, Saudi Arabia. Therapeutic advances in endocrinology and metabolism. 2018;9(4):103-12.
4. Basit A, Fawwad A, Qureshi H, Shera AS. Prevalence of Diabetes , pre diabetes and associated risk factors: second national diabetes survey of pakistan (NDSP), 2016-2017. BMJ open. 2018; 8(8): e020961.
5. Alasiri RA, Bafaraj AG. Awareness of diabetic retinopathy among diabetic patients in King Abdulaziz University Hospital, Jeddah, Saudi Arabia. AnnlInt Med Dental Res. 2016;2:42-5.
6. El Khatib B, AlHawari H, Al Bdour M. Assessment of awareness of diabetic retinopathy among patients with Diabetes Mellitus attending the endocrine clinic at Jordan University Hospital. Madridge J Ophthalmol. 2017;2(1):1721.
7. Sabanayagam C, Yip W, Ting DS, Tan G, Wong TY. Ten emerging trends in the epidemiology of diabetic retinopathy. Ophthalmic epidemiology. 2016;23(4):209-22.
8. Karter AJ, Ackerson LM, Darbinian JA, D,AgostinoJr RB, Ferrara A, Liu J, Selby JV. Self monitoring of blood glucose levels ans glycemic control: the Northern California Kaiser Permanente diabetes registry. Am J Med. 2001;111 (1): 1-9.
9. Saaristo T, Moinlanen L, Korpi-Hyovalti E et al. Lifestyle intervention fo prevention of type 2 diabetes in primary health care: one year follow up of the Finnish National Diabetes prevention Program (FIN-D2D). Diabetes Care 2010;3: 2146-2151.
10. Konstantinidis L, Carron T, de Ancos E, Chinet L, HagonTraub I, Zuercher E, et al. Awareness and practices regarding eye diseases among patients with diabetes: a cross sectional analysis of the CoDiab-VD cohort. BMC endocrine disorders. 2017;17(1):56.
11. Gupta S, Gupta I, Kalra S. Study of awareness of diabetic retinopathy among the patients of type 2 diabetes mellitus: A prospective study. Indian Journal of Clinical and Experimental Ophthalmology. 2018;4(4):483-6.
12. Fallatah MO. Knowledge, awareness, and eye care-seeking behavior in diabetic retinopathy: a cross-sectional study in Jeddah, Kingdom of Saudi Arabia. Ophthalmology and therapy. 2018;7(2):377-85.
13. Mario S, Diez RAV, Boykin S, Sarpong D, Gebreab Samson Y, Wyatt Sharon B , et al. The socieconomic gradient of diabetes prevalence, awareness , treatment and control among African Americans in Jackson heart study. Ann Epidemol. 2011; 21: 892-8.
14. Pan C-W, Wang S, Qian D-J, Xu C, Song E. Prevalence, awareness, and risk factors of diabetic retinopathy among adults with known type 2 diabetes mellitus in an Urban Community in China. Ophthalmic epidemiology. 2017;24(3):188-94.
15. Al Rasheed R, Al Adel F. Diabetic retinopathy: Knowledge, awareness and practices of physicians in primary-care centers in Riyadh, Saudi Arabia. Saudi Journal of Ophthalmology. 2017;31(1):2-6.
16. Srinivasan NK, John D, Rebekah G, Kujur ES, Paul P, John SS. Diabetes and diabetic retinopathy: knowledge, attitude, practice (KAP) among diabetic patients in a tertiary eye care centre. Journal of clinical and diagnostic research: JCDR. 2017;11(7):NC01.
17. Al Zarea BK. Knowledge, attitude and practice of diabetic retinopathy amongst the diabetic patients of AlJouf and Hail Province of Saudi Arabia. Journal of clinical and diagnostic research: JCDR. 2016;10(5):NC05.
18. Cavan D, Makaroff L, da Rocha Fernandes J, Sylvanowicz M, Ackland P, Conlon J, et al. The diabetic retinopathy barometer study: global perspectives on access to and experiences of diabetic retinopathy screening and treatment. Diabetes research and clinical practice. 2017;129:16-24.
19. Murthy G, Das T. Diabetic care initiatives to prevent blindness from diabetic retinopathy in India. Indian journal of ophthalmology. 2016;64(1):50.
20. Mian LS, Moin M, Khan IH, Manzoor A. Awareness of diabetic retinopathy among diabetic patients. Pakistan Journal of Ophthalmology. 2017;33(3).