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Original Research Paper

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STUDY ON THE AWARENESS ABOUT EYE COMPLICATIONS AMONG TYPE 2 DIABETIC PATIENTS

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ABSTRACT

Background and rationale : Diabetic Retinopathy (DR) is the leading cause of blindness worldwide. Lack of awareness about diabetic retinopathy is the main factor responsible for the late detection of DR.

Objectives : To determine the level of awareness among diabetic population regarding the blinding complications of diabetic retinopathy.

Setting and Design: A cross sectional study was conducted among 384 patients who had been diagnosed with diabetes mellitus in various medical camps and diabetic clinics at Thiruvananthapuram.

Methodology :. Level of awareness was assessed among diabetic population regarding the eye complications using structured self administered questionnaire. Data was entered into excel sheet and analysis was done using statistical software (SPSS version 20).

Results : Among total 384 subjects, only 3.4% (13) had good awareness, 54.4% (209) had moderate awareness and 42.2% (162) had poor awareness about eye complications of diabetes.

Conclusion : Good/Moderate level of awareness about eye complications of diabetes mellitus was demonstrated in 57.8%.

KEYWORDS : Eye complications, diabetes, diabetic retinopathy

INTRODUCTION

Diabetic retinopathy is emerging as one of the major causes of blindness in India. The occurrence of diabetic retinopathy cannot be prevented but the complications causing severe visual impairment can be reduced by early detection and timely treatment. There is a requirement of high level of awareness about diabetic retinopathy in the community to provide education to the diabetic patients about the risk factors for diabetic retinopathy and also regarding its sight threatening complications. Thus a main challenge to the health care providers in India is to spread awareness and knowledge about diabetic retinopathy and thus reduce the social burden of the disease. In a population based study to determine knowledge, awareness, and practices (KAP) relating to diabetic retinopathy among non medical persons in a south Indian population, it was found that over half the respondents were not aware of risk factors for diabetic retinopathy. Only one fifth of paramedics and one tenth of the people from the community were aware that uncontrolled diabetes was a risk factor for retinopathy. Although 80 % of respondents from the community felt that yearly eye examinations were essential, only 43.5 % had ever visited an Ophthalmologist[1]. Being a disease with sub clinical period, DR can be diagnosed earlier with prompt screening and can offer some form of treatment. The awareness and adherence to periodic eye check up is poor even in highly literate and educated population in developed countries like Japan and USA. So the scenario in developing countries like India where the literacy level is much lower is expected to be worse. The Diabetic Retinopathy Study and Early Treatment of Diabetic Retinopathy study[2,3] have conclusively advocated the role of regular eye examination to ensure early detection and treatment of DR and prevention of severe visual loss. . While several advances have taken place in the treatment of DR, little has been done at the national level in India to initiate any mass awareness program on diabetes and its microvascular complications such as DR. Unlike other states in India, Kerala has high health care indices and literacy rate. Even with this background the diabetes related ocular morbidity is on the rise. Hence the purpose of the present study was to determine the level of awareness among diabetic population regarding the blinding complications of diabetic retinopathy.

PATIENTS AND METHODS

This was a community based cross sectional study conducted at various medical camps and diabetic clinics in Trivandrum from April 2017 to March 2018.All consecutive patients diagnosed with Diabetes Mellites were included in the study .Patients who were already diagnosed to have diabetic retinopathy and were on treatment/follow up were excluded from the study. Institutional ethical committee clearance was obtained prior to the study .After obtaining informed written consent the patients was asked to respond to a self administered questionnaire. The questionnaire included specific questions regarding awareness and knowledge of diabetes complications especially retinopathy, eye screening. Each question carried 1 mark. For those questions having multiple answers, each correct had equal fraction of 1. Data was entered in excel sheet. A score of more than 75% is considered good awareness, moderate 50-75% and poor <50%. Statistical analysis were performed using a statistical software package SPSS, version 20.0.

RESULTS

59.4% were aware about the normal fasting blood sugar value 60.9% were aware that diabetes can be controlled by drugs, 57.0% by exercise and 56.8% by diet control.

66.7% were aware that diabetes causes kidney diseases, 51.8% is aware about diabetes affecting eye and 48.7% is aware that diabetes can cause heart attack.

45.3% were aware that diabetes can cause cataract and only **30.7%** is aware that diabetes causes retinopathy

37.0% were aware that annual screening for retinopathy is needed for all diabetic patients.

59.1% were aware that every diabetic should undergo eye examination even if vision is not affected.

58.6% were aware that retina is affected in diabetic retinopathy. Only **10.2%** were aware that there would not be any symptoms at early stages of diabetic retinopathy.

72.7% were aware that diabetic retinopathy is not curable.

82.0% were aware that diabetic retinopathy is related to blood sugar control.

75.0% were aware that diabetic retinopathy is related to duration of diabetes.

37.0% were aware that blindness due to diabetic retinopathy is irreversible.

Treatment options for diabetic retinopathy **:** 43.0% were aware about surgery, 33.6% about laser treatment and 26.6% about injections into eye (intravitreal injections).

Advice from primary care physician **:** 61.5% of the patients were advised by the treating physician about need for eye screening.

3.4% had good awareness, 54.4% moderate and 42.2% had poor awareness about eye complications of diabetes.

Table 1 : Awareness about eye complications of diabetes

Awareness about eye complications of diabetes	Count	Percent
Poor	162	42.2
Moderate	209	54.4
Good	13	3.4

Table 2 : Awareness about different aspects of diabetic retinopathy

Awareness about DR	Count	Percent
Annual screening for DR	142	37.0
Need screening for DR	227	59.1
Retina affected in DR	225	58.6
No symptoms for early DR	39	10.2
Not curable	279	72.7
DR Related to glycemic status	315	82.0
DR Related to duration of DM	288	75.0
Blindness irreversible	142	37.0

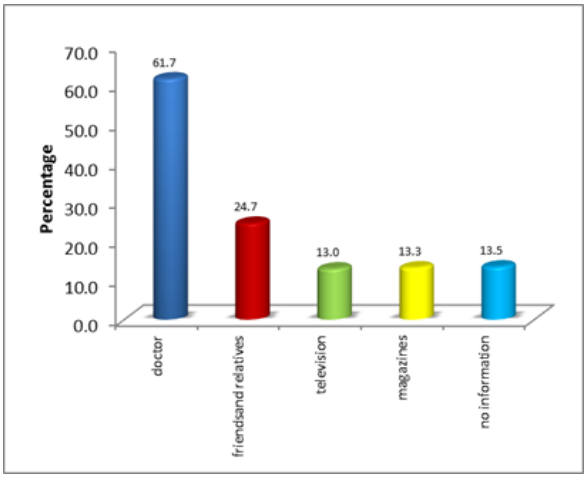

Figure 1 : Distribution of the sample according to source of information

DISCUSSION

Sequential surveys from India indicate that the prevalence of diabetes has risen steadily since the 1970s and thus Diabetic Retinopathy (DR) is also on the rise.[4,5,6,7] The lack of awareness about DR is considered a major health problem that could interfere with proper management and prevention of possible visual impairment. There seems to be a worldwide trend of a lack of awareness of DR in the population. Prolonged duration of disease results in various disease-associated complications mainly as a result of ignorance and poor disease control, thus contributing to the disease-related morbidity.

During one year study period , 384 diabetic patients were interviewed using a self administered questionnaire. Our study revealed moderate-good awareness levels in 57.8% (222) of the participants. According to the **Chennai Urban Rural Epidemiology Study**, only 19.0% (4951/26,001) of the total population and only 40.6% (621/1529) of diabetics were aware that DM could produce some complications[15]. The study conducted by **Dandona et al.**[8] in South India revealed 60 patients (59.4%) out of 101 had awareness that screening was necessary for DR, whereas 40.6% were unaware of necessity of screening for DR. The source of awareness were exclusively doctors in majority of patients (n=46).

In another KAP study by **Rani et al.**, 966 (49.9%) individuals had knowledge about DM and 718 (37.1%) about diabetic retinopathy[9]. A study by **Rameez et al** showed awareness about diabetic retinopathy among 55.6% of the participants from Kerala, which is very close to our result.[10] Though most of the participants (51.8%) were aware about diabetes affecting the eye, only 30.7% knew that retinopathy is the complication of diabetes; majority (45.3%) thought cataract is the complication of diabetes.. In a study conducted by **Saikumar et al**, 84 % knew that DM could affect the eye. Among those who were aware that DM could affect the eye, 51 % did not know exactly which part of the eye could be affected, 28.3 % thought that cataract was the main eye complication, and 19 % thought that DM mainly affected the nerves in the eye (presumably retinopathy). Around 50 % of the patients knew that routine eye checks were necessary even if DM was well controlled, while the remainder thought that routine eye examinations were not necessary in that case.[11] In our study 59.1% were aware that diabetic patients should undergo eye check up even if vision is not affected and 37.0% were aware about the need of annual check up. Majority of the participants (>70%) in our study were aware that control of glycemic status and duration of diabetes is associated with diabetic retinopathy.

In a pan India study done by **Indian Council for Medical Research** only 43.2% (6160/14,274) of the overall study population had heard about a condition called diabetes. Regarding complications, 51.5% of the general population and 72.7% diabetic population knew that diabetes could affect other organs[12] .

In a population based study by **Rameez et al**[10] in Kerala 6211 people (3528 [56.8%] women and 2683 [43.2%] men) with a mean age of 55.6 ± 11.7 years (range 21-98years) were included. Good knowledge and positive attitude were observed in 3457 (55.6%) and 3280 (52.8%) people. Among 1538 (25.4%) people known to have DM, only 619 (40.7%) had good knowledge, 828 (53.8%) had a positive attitude, and 886 (57.6%) had good practice patterns. Although half of them followed general diabetic care, only 9.6% had undergone screening for retinopathy.

The study conducted in South India found that, in terms of knowledge and awareness, 37.4% had heard about the eye complications of diabetes and 62.6%

never heard about it. Out of 37.4% only 24.9% know the relationship between diabetes and diabetic eye disease; 29.5 % have heard that vision can be affected due to high blood sugar levels. 32% of 200 participants go for regular eye check-ups while 68% never go for check-ups[13].

In a study conducted by **Aditi Dubey et al**[14] in Central India, 23.5% (53) patients were aware that strict blood sugar control

can prevent the visual impairment due to DR and only 11.5% (26) knew that early intervention (laser photocoagulation) can prevent the progression of vision loss. None of the cases were aware about intra- vitreal anti vascular endothelial growth factors (Anti-VEGF) as a treatment modality of DR.

In the study by **Saikumar et al**[11] only 46.9 per cent of those interviewed knew that retinopathy was related to the control of DM, and only 40.3 per cent knew that it was related to the duration of DM[60]. About the treatment option 72.7% knew that the condition is treatable, and majority (43.6%) believe surgery is the treatment option. The knowledge about intravitreal injection seems to be low. 61.5% of the participants revealed that their treating physician had informed them about need of screening. About the source of information, 61.7% got information from doctors and 24.7% from friends and relatives. The role of mass media as a source of information is sub optimal (13% from television; 13% magazines). Public should be made aware about the vision threatening complications of diabetic retinopathy and mass media should be increasingly utilized to spread awareness.

CONCLUSION

The study concluded that Good level of awareness about eye complications of diabetes was present in 3.4% , Moderate level of awareness was present in 54.4% and Poor level of awareness was present in 42.2%.

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