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DIABETIC RETINOPATHY AWARENESS AMONG DIABETICS – A QUESTIONNAIRE BASED STUDY

Dr. P Bharath Kishore* Junior Resident, Department Of Ophthalmology, Alluri Sitaramaraju Academy Of Medical Sciences, Eluru, Andhra Pradesh -534005, India. *Corresponding Author

Dr. M S S Keerthi Assistant Professor, Department Of Ophthalmology, ASRAM, Eluru, Andhra Pradesh, 534005, India.

ABSTRACT

AIM: To assess the awareness of diabetic retinopathy in individuals with type 2 diabetes mellitus.

METHODS: A cross-sectional observational study with a total of 150 patients with pre-existing diabetes were included in the study. The study duration was from July 15th, 2019, to 31st December 2019. An 11-point questionnaire was used to collect data including demographics, duration of disease, awareness of ocular complications, and presence of ocular symptoms.

RESULTS: 89 patients (59.4%) out of 150 had the awareness that screening was necessary for DR, whereas 61 (40.6%) were unaware of the necessity of screening for DR. Statistically significant association was seen between literacy and awareness regarding screening for DR ('p' value=0.009). A significant association was seen between control of diabetes and eye problems ('p' = 0.005).

CONCLUSIONS: There is a need for awareness of DR among patients to minimize ocular complications.

KEYWORDS : Diabetic Retinopathy, Awareness, Literacy.

INTRODUCTION

Diabetes is one of the leading causes of blindness in developed and in the developing world. Rapid urbanization and lifestyle changes have brought about an increase in diabetes. Diabetes leads to a number of systemic complications that cause significant morbidity and mortality. Diabetic retinopathy is a common and significant complication, with some studies reporting prevalence rates of around 20 % among diabetic patients.[1] Diabetic retinopathy is also one of the leading causes of ocular morbidity in India, according to several studies.[2,3] Awareness of the ocular complications among patients is essential for early and regular screening and treatment of complications.

MATERIALS AND METHODS

The present study was a cross-sectional observational study which was conducted at the Department of Ophthalmology, Alluri Sitaramaraju Academy of Medical Sciences, Eluru, which is a tertiary care hospital. A total of 150 patients with pre-existing diabetes were included in the study. These included both in- and out-patients who presented for ophthalmological evaluation. The study duration was from July 15th, 2019, to 31st December 2019. A written informed consent was taken from all patients before including them into the study. Necessary demographic data, including age, education status, and occupation, were recorded for all patients. An 11-point questionnaire was put forward to the study subjects. It included specific questions including duration of disease, awareness of ocular complications, and presence of ocular symptoms. Some of the questions were in 'yes' or 'no' format, while others required appropriate answers. The questionnaire was administered by the doctor, well versed in English, Telugu.

STATISTICAL ANALYSIS

Statistical analysis is performed with SPSS v 24 (SPSS Inc; Chicago, IL, USA). P<0.05 was considered statistically significant.

RESULTS

A total of 150 patients are included in the study. These included 98 males (65.3%) and 52 females (34.7%). The age of patients ranged from 30 to 83 years, with a mean of 61.3 years. Further analysis of age distribution revealed the highest number of patients in the 61-70 years age group (35.6%) followed by more than 70 years age group (23.8%) and 51-60 years age group (21.8%). The least number of patients were found in 30- 40 years age group (3%). Patients included had varied occupations from farming to teaching to business people to homemakers and others. A total of 19 patients (12.9%) were illiterate, whereas 53 patients (35.6%) had primary education, 45 patients (29.7%) had secondary education, and 33 patients (21.8%) had finished graduation or higher. Patients had diabetes for an average period of 10.59 years, with a range of 2 months to 28 years. Seventy-four patients (49.5%) had a family history of diabetes. 82 patients (54.5%) had good control of diabetes (FBS 80-139mg/dl & PPBS <180mg/dl) and 68 patients (45.5%) had poor control of diabetes (FBS >130mg/dl &/or PPBS >180mg/dl). Sixty-two patients (41.6%) had eye problems like blurring of vision, dark spots and floaters, foreign body sensation etc. with diabetes, and 88 patients (58.4%) did not have any eye problems. Eighty patients (53.5%) had one or more systemic diseases other than diabetes, whereas 70 patients did not have any systemic diseases (46.5%). Hypertension was the most common systemic disease in association with diabetes and was found in 47 patients. 89 patients (59.4%) out of 150 had awareness that screening was necessary for diabetic retinopathy, whereas 61 patients (40.6%) were unaware of necessity of screening for diabetic retinopathy (Figure 1). The source of awareness was only doctors in 68 patients and doctors, along with some other source of awareness was found in 25 patients. Fifty-two patients (34.7%) knew of somebody who had lost vision due to diabetes, whereas 98 patients (65.3%) did not know of anybody who had lost sight due to diabetes. On performing chi-square analysis, a statistically significant association was seen between literacy and awareness regarding screening for diabetic retinopathy, with a 'p' value of 0.009. Also, a statistically significant association was seen between control of diabetes and eye problems, with a 'p' value of 0.005 (Table 1). There was no statistically significant relationship between the duration of disease and the presence of eye symptoms in our study ('p'= 0.084).

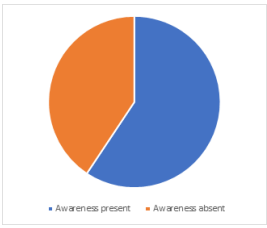

Figure 1: Awareness of diabetic retinopathy among study subjects

Figure 2: Association of the presence of eye problems with control of diabetes

Table 1: Association of literacy status with awareness regarding screening for diabetic retinopathy.

Awareness of diabetic retinopathy	LITERACY STATUS				Total
	Illiterate	Primary	Secondary	Graduate	

Present	Number	4	29	25	27	85
	Percentage	23.1	55.6	56.7	81.8	57.4
Absent	Number	15	24	20	6	65
	Percentage	76.9	44.4	43.3	18.2	42.6
Total	Number	19	53	45	33	150
	Percentage	100	100	100	100	100

X2=11.686, p=0.009

DISCUSSION

Diabetic retinopathy is a well- established complication of diabetes, which contributes to the morbidity. Therefore, there is an urgent need to increase the awareness of diabetes and its complications. In the present study, 112 patients (75%) had the awareness that diabetes causes loss of vision. This is significantly higher than other studies done in India wherein about 37.1% of the patients had an awareness of diabetic eye complications.[4]

In that study, the respondents were chosen across the rural population. This is also higher than awareness rates noted in studies done in developed countries like Australia (37%). A similar study done in Malaysia showed an awareness prevalence of about 86.1%.[5] The authors attributed the high awareness to the fact that the screening was done in patients who had been referred for eye screening by other physicians who had informed about eye complications. A similar phenomenon may explain the high awareness rates in our study. On further analysis of factors that influence the level of awareness, it was found that the level of education had a significant impact with a 'p' value of 0.009.

On subgroup analysis, it was found that the percentage of patients with awareness was least in the illiterate group (23.1%) and gradually increased with the highest rate among graduates (81.8%). Similarly, high level of awareness was found to be associated with level of education in studies done by Rani et al[5] in India and in Malaysia by Tajunisah et al.[6] Similarly, education was shown to increase the level of awareness in a study done by Cetin et al.[7] Eighty nine patients (59.4%) in our study knew that screening was necessary for prevention of diabetic retinopathy. This is lower than 75.3% of patients who knew regular screening was necessary, as reported by Rameez Hussain et al[8] in their study. That study was done in town in Kerala with a high literacy rate, which may contribute to better awareness.

The source of awareness was doctor alone in 68 patients, and in the other 25 patients press, internet, friends, and family etc. were sources. Dervan et al[9] showed in their study that the physician's recommendation was the most crucial factor which made patients undergo eye screening for diabetic retinopathy. This underscores the role of physicians in spreading awareness among newly detected and existing patients. All the patients were readily willing to spread awareness of DR among family and friends, which underscores the importance of patient education, which can act as an efficient and inexpensive method of public health education.

CONCLUSION

Diabetes and Diabetic retinopathy are major health problems in the present world. There is a need for awareness among patients to minimize complications. Healthcare personnel has a major role in spreading awareness, but the role of mass media, including the internet and television, cannot be underestimated. Also, improvement in the healthcare system is necessary for the prevention/ treatment of diabetes-related complications.

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