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Awareness Regarding Diabetic Retinopathy Amongst Medical Interns

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Abstract

Background: Diabetes is a global health burden and diabetic ocular complications are among common causes of blindness. Early diagnosis and prompt treatment can prevent blinding complications of diabetes. The purpose of the study was to assess the awareness regarding diabetic retinopathy amongst medical interns.

Material and Method: A questionnaire regarding awareness of diabetic retinopathy is administered to 80 medical interns of Sri Siddhartha Medical College & Research Centre, Tumkur.

Results: There was good level of knowledge but most of the interns were not aware about the proper referral guideline, blinding complications and treatment options of diabetic retinopathy.

Conclusion: Medical personnel play a crucial role in the community in the prevention and early treatment of diabetic retinopathy.

Keywords: Awareness , Diabetes , Diabetic Retinopathy

Introduction

Diabetic retinopathy (DR) can be defined as damage to microvascular system in the retina due to prolonged hyperglycaemia. Diabetes Mellitus (DM) is a global health problem.[1]

India is set to emerge as the diabetic capital of the world.[2] According to the WHO, 31.7 million people were affected by diabetes mellitus (DM) in India in the year 2000. This figure is estimated to rise to 79.4 million by 2030, the largest number in any nation in the world. Almost two-third of all Type 2 and almost all Type 1 diabetics are expected to develop diabetic retinopathy (DR) over a period of time.[3,4,5,6] The morbidity caused by its ocular complications has placed this disease as the fourth leading cause of world blindness.[7]

Diabetes is also associated with early progression & maturation of senile cataract and can lead to true diabetic cataract when blood sugar levels poorly controlled.

Prevalence of Diabetic Retinopathy was 50.1% in Wisconsin Epidemiological Study of Diabetic Retinopathy (WESDR) among diabetic patients, 54.2% in the Diabetes Control and Complications trial (DCCT) in type-I DM patients and 35-39% in the United Kingdom Prospective Diabetes Study (UKPDS) in type-II DM patients.[8,9,10]

In India prevalence of diabetic retinopathy was found 21.7% among diabetics in a study conducted by All India Ophthalmological society (AIOS) in 2014.[11]

Fortunately, the visual loss and the blindness due to diabetic retinopathy can be prevented or at least delayed with early detection and timely intervention. Due to the social disease burden and subsequently the economic implication as a result of the diabetic eye disease, a high level of awareness is needed to educate diabetic patients with regards to this debilitating complication.

In a study of an urban general population in India where the prevalence of diabetic retinopathy was high, Dandona et al.[12] observed a low level (27.0%) of awareness about this dreaded complication.

Knowledge of the disease could lead to better understanding and acceptance of the importance of routine eye examinations for the early detection and treatment of eye diseases, thereby reducing the incidence of this potentially blinding disease. Early screening and intervention are the key to treatment. Limitation to this approach is improper access to ophthalmologist. Thus, it is imperative that primary health care providers should be aware of the diabetic complications and referral guidelines. Bridging the gap between the patients and ophthalmologists can be done by the medical interns, who can sensitize the patients towards the disease and refer the patients and susceptible relatives for screening.

Effective management of diabetic ocular complications needs a multilevel approach and participation of the community, paramedical personnel, general practitioners and ophthalmologists.

The fresh medical graduates who are the future family physicians can be the most proficient healthcare providers to manage and screen for diabetes and diabetic retinopathy in the community. The success will depend on their solid knowledge, attitude, and practice which can be taught by special attention on their training for diabetes and diabetic retinopathy during their teaching.

This study was conducted to assess diabetic retinopathy awareness amongst medical interns.

Materials & Methods

This was a descriptive study conducted in Sri Siddhartha Medical College & Research Centre, Tumkur among 80 medical interns, who were willing to take part in this study during the period between May 2018 to October 2018. This study was approved by the Institutional Ethics Committee. A detailed information sheet regarding the study at hand was given to the participant. Written informed consent was obtained from all the participants before their enrolment into the study. The study instrument used was a pre-tested and semi-structured questionnaire in English, comprising 10 closed-ended questions with multiple responses.

Results

A total of 80 medical interns were distributed the questionnaires.

In our study, 76 (95%) interns responded that diabetes affects the eyes and 57 (71.25%) interns knew that a good vision does not guarantee that the patient does not have diabetic complications in the eye.

68 interns (85%) knew that diabetic complications cause irreversible blindness. 37 interns (46.25%) responded positively that newly detected type 1 diabetics need not be screened immediately for diabetic complications in the eye.

On being asked about the risk factors for diabetic complications in the eye, 76 (95%) interns responded for uncontrolled blood sugars, 75 (93.75%) interns responded for longer duration of diabetes, 75 (93.75%) interns said systemic hypertension was a risk factor, 65 (81.25%)

interns responded for altered lipid profile, 57 (71.25%) responded for renal failure, 39 (48.75%) responded to heart failure being a risk factor and 53 (66.25%) knew that pregnancy was a risk factor.

68 (85%) interns agreed that dilated fundus examination is necessary to diagnose diabetic complications in the eye. On being asked about the features that may be present in a diabetic with complications in the eye, 59 (73.75%) interns answered cataract, 67 (83.75%) answered retinal haemorrhages, 53 (66.25%) interns responded for retinal detachment, 61 (76.25%) interns responded for retinal exudates, 43 (53.75%) responded vitreous haemorrhage.

58 (72.5%) interns were aware as to if any of their family members with diabetes have been screened for diabetes related complications in the eye. 57 (71.25%) interns responded positively to have referred a patient to the eye department for screening for diabetic complications.

On being asked regarding the treatment modalities known to be beneficial for patients with retinopathy, 75 (93.75%) interns responded positively for Glycemic control, 52 (65%) interns responded positively for laser photocoagulation, 42 (52.5%) interns responded positively for intravitreal steroid injections, 43 (53.75%) interns knew that intravitreal anti-VEGF injections were beneficial and 37 (46.25%) interns knew that vitreo-retinal surgeries were beneficial.

Questionnaire

	Questions	**Responses**		
		Yes	**No**	**Does Not Know**
1.	Does diabetes affect the eyes?	76 (95%)	4 (5%)	0
2.	If the vision is normal, it probably means the patient does not have diabetic complications in the eye	22(27.5%)	57 (71.25%)	1 (1.25%)
3.	Can diabetic complications cause irreversible blindness?	68 (85%)	10 (12.5%)	2 (2.5%)
4.	Newly detected diabetics need not be screened immediately for diabetic complications in the eye. This is true in-			
A.	Type -1 Diabetics	37 (46.25%)	34 (42.5%)	9 (11.25%)
B.	Type -2 Diabetics	32 (40%)	43 (53.75%)	5 (6.25%)
5.	Which of the following have a bearing on the risk			

	for diabetic complications in the eye?			
A.	Uncontrolled Blood sugars	76 (95%)	2 (2.5%)	2 (2.5%)
B.	Longer duration of diabetes	75 (93.75%)	5 (6.25%)	0
C.	Systemic hypertension	75 (93.75%)	5 (6.25%)	0
D.	Altered Lipid profile	65 (81.25%)	5 (6.25%)	10 (12.5%)
E.	Renal Failure	57(71.25%)	15(18.75%)	8 (10%)
F.	Heart Failure	39(48.75%)	31(38.75%)	10(12.5%)
G.	Pregnancy	53(66.25%)	15(18.75%)	12(15%)
6.	Is Dilated fundus examination necessary to diagnose diabetic complications in the eye?	68(85%)	6(7.5%)	6(7.5%)
7.	Which of the following features may be present in a diabetic with complications in the eye?			
A.	Cataract	59(73.75%)	16(20%)	5(6.25%)
B.	Retinal haemorrhage	67(83.75%)	8(10%)	5(6.25%)
C.	Retinal detachment	53(66.25%)	17(21.25%)	10(12.5%)
D.	Retinal exudates	61(76.25%)	11(13.75%)	8(10%)
E.	Vitreous haemorrhage	43(53.75%)	22(27.5%)	14(17.5%)
8.	Are you aware if your family members with diabetes have been screened for diabetes related complications in the eye?	58(72.5%)	20(25%)	2(2.5%)
9.	Have you ever referred a patient to the eye department for screening for diabetic complications?	57(71.25%)	20(25%)	3(3.75%)
10.	Which of the following modalities are known to be beneficial for patients with retinopathy?			
A.	Glycemic control	75(93.75%)	2(2.5%)	3(3.75%)
B.	Laser photocoagulation	52(65%)	12(15%)	16(20%)
C.	Intravitreal steroid injections	42(52.5%)	26(32.5%)	12(15%)
D.	Intravitreal anti- VEGF injections	43(53.75%)	8(10%)	29(36.25%)
E.	Intravitreal mitomycin-C	30(37.5%)	25(31.25%)	25(31.25%)
F.	Vitreo-retinal surgeries	37(46.25%)	16(20%)	27(33.75%)

Discussion

Our study revealed that knowledge about diabetic retinopathy was good among the students. This was in accordance with the studies by Suchitra Panigrahi et al.,[13] Hari Kumar et al.,[14] Niharika K. Shetty et al.[15] conducted in India, where the knowledge of medical personnel was satisfactory, whereas in other studies less knowledge among the student participants was observed. [16,17,18]

In our study, the intern doctors had a moderate level of knowledge on ocular complications of diabetes. This was comparable to a study by Ombir Singh et al.[19] and Mahesh et al.[20] in India and also by Muecke et al.[21] in Myanmar where 93.6% to 99% of doctors in the study were aware of the blinding and other complications of DM.

In this study, a significant proportion of intern doctors were aware of the modes of treatment options available for diabetic retinopathy. Knowledge of treatment options can influence the way of management and referral for patients by practitioners. All patients should be referred to an ophthalmologist for regular fundus examination else by the time patient comes with visual symptoms, Diabetic retinopathy may have progressed requiring complex and expensive management.

Conclusion

Present study establishes that despite the moderate level of knowledge among interns on diabetic ocular complications, there are existing gaps such as lack of knowledge on screening requirements, referral guidelines and treatment options for diabetic retinopathy.

Intern doctors are the integral part of health care system especially at a medical college hospital. They are the future family physicians, resident doctors and consultants; hence they can be the most proficient health care providers to screen diabetic ocular complications within community.

Training of intern doctors on diabetic ocular complications is required. This can be done through continuous medical education at health facilities and regular skills update workshops. Medical students should be given more hands-on training on eye examination during their medical course. Awareness should be created among the diabetics regarding the blinding complications of Diabetes Mellitus, so as to increase the demand for early referral to an ophthalmologist.

There is need for a massive health education campaign for diabetic retinopathy awareness in the community.

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