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Awareness among health professionals regarding diabetic retinopathy

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Aim: To ascertain the current knowledge and attitude among doctors and optometrists regarding diabetic retinopathy (DR).

Method: Response to structured questionnaire of forty doctors and thirty- six optometrists, working in government set-ups in a district of West Bengal was analyzed.

Result: Response from two (5.6%) optometrists was graded as excellent; 16(40%) doctors and 14(38.9%) optometrists as good; 22(55%) doctors and 20(55.5%) optometrists as poor and 2(5%) doctors as very poor.

Conclusion: There is serious lack in awareness among health professionals regarding DR.

India has the largest number of diabetic subjects in the world. Presently an estimated 19.4 million individuals are affected by diabetes in this country and it has been projected to reach 57.2 million by the year 2025 (one-sixth of the world total) ¹. Prevalence of diabetic retinopathy in India varies from 19 to 34.1% as reported in different studies ^{2, 3, 4}. Diabetes patients are at increased risk of developing blindness from diabetic retinopathy. Diabetes research has improved our knowledge of effective management and prevention of long-term complication like vision loss. An issue of growing concern, however, is how to effectively translate research knowledge into improved clinical care and generate awareness among diabetes patients regarding sight threatening visual complication of the disease. First contact health professionals have a significant role to play in this regard. Many diabetes patients, particularly in the rural set-up, visit general physicians at government hospitals for their medical problems and visit optometrists for their visual problems. Physicians and optometrists can play significant role to generate

awareness among their patients. It is also important that they refer patients at the appropriate time to trained ophthalmologist for ocular check-up. Awareness among physicians and optometrists regarding diabetic retinopathy is therefore of utmost importance. In this study we have assessed the awareness of the government doctors and optometrists of South 24 Parganas district regarding diabetic retinopathy.

Objective

1. To assess the current knowledge of diabetic retinopathy among Medical Officers working in the district of South 24 Parganas, West Bengal, India, as on March 2005.
2. To assess the current knowledge of diabetic retinopathy among optometrists in the district of South 24 Parganas, West Bengal, India, as on March 2005.
3. To compare the current knowledge of diabetic retinopathy between Medical Officers and Optometrists in the district of South 24 Parganas, West Bengal, India, as on March 2005.

Indicators

1. Proportion of Medical Officers having different grades of knowledge regarding diabetic retinopathy

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2. Proportion of Optometrist having different grades of knowledge regarding diabetic retinopathy
3. Comparison of proportions between Medical Officers and Optometrist having different grades of knowledge in different sections of diabetic retinopathy.

Materials and methods

We conducted a cross sectional study on 29th March 2005 with the help of District health committee of South 24 Parganas district, West Bengal, India. This district is situated adjacent to a metropolis (Kolkata) and has got urban, semi-urban as well as rural population character. Total population of this district is 69,09,015 . We have included for this study, all optometrists (n = 36) working as paramedical ophthalmic assistants (PMOA) in government hospitals in this district and medical officers (n=40) working in this district in different blocks. We have included the government medical officers by using simple random sampling method out of total number of medical officers working in this district

(n=242). Criteria for exclusion in medical officers were any post-graduate qualification in ophthalmology. The names and particulars of optometrists and doctors working in government health units were obtained from the office of the chief medical officer of health of the district. We prepared a structured questionnaire comprising twelve multiple-choice questions that included areas of epidemiology, risk factors and management of DR. We pre-tested this questionnaire with House Medical Officers (n =10) and medical students (n = 8) of R G Kar Medical College and Hospital, Kolkata, and made necessary modifications. We obtained informed consent from all who participated in the study. To calculate the response of the participants we classified the range of correct answers by grading them in following ways: 10 -12 correct answers = excellent, 7-9 correct answers = good, 4-6 correct answers = poor, 1-3 correct answers = very poor.

Results

32 male and four female optometrists participated in the study. Their age range was between 24 years and 52 years; median being 32 years. 31 male and nine female medical

Table 1. Number of correct response obtained

Number of correct response	Doctor	PMOAs
Zero	0	0
One	0	0
Two	2 (5%)	0
Three	0	0
Four	6 (15%)	5 (13%)
Five	4 (10%)	7 (19.4%)
Six	12 (30%)	8 (22%)
Seven	8 (20%)	5 (13.9%)
Eight	6 (15%)	7 (19.4%)
Nine	2 (5%)	2 (5.6%)
Ten	0	1 (12.8%)
Eleven	0	0
Twelve	0	1 (2.8%)
Total	40 (100%)	36 (100%)

Table 2. Distribution of grades among doctors and PMOA

Performance Guide	Doctors	PMOA	Chi square	p value
Excellent	0 (0%)	2 (5.6%)	2.25	0.133
Good	16 (40%)	14 (37.9%)	0.01	0.921
Poor	22 (55%)	20 (55.5%)	0.00	0.961
Very poor	2 (5%)	0 (0%)	1.82	0.876
Total	40 (100%)	36 (100%)		

Table 3. Distribution of areas of knowledge among doctors and PMOA

Relevant section	Average correct response from doctors	Average correct response from PMOA	Chi square	p value
Epidemiology	19 (47.5%)	16 (45%)	0.07	0.789
Risk factor	30 (75%)	24 (67%)	0.63	0.42
Management	16 (40%)	14 (39%)	0.01	0.90

officers participated in the study. Their age range was between 28 years and 57 years; mean being 35 years. 11 of them had post graduate qualification; six in obstetrics, two in child health, two in public health and one in general medicine.

No doctor (n = 40) scored excellent, whereas 2 (5.6%) PMOA (n=36) scored excellent (p>0.1). 16 (40%) doctors and 14 (38.9%) PMOA scored in good category (p>0.1), 22 (55%) doctors and 20 (55.5%) PMOA scored poor (p>0.1), 2 (5%) doctors and no (0%) PMOA scored very poor (p>0.1) (Table-1 & 2).

Average number of correct response was 16 (45%) from optometrists and 19 (47.5%) from medical graduates in the epidemiology section (p>0.1); 24 (67%) from optometrists and 30 (75%) from medical graduates in questions regarding risk factors associated with the diabetic retinopathy (p>0.1); 14 (40%) from optometrists and 16 (40%) from doctors regarding management of the condition (p>0.1) (Table-3).

17 (47.2%) optometrists and 16 (40%) medical graduates were not aware of the situation that India is the single country with the largest diabetic population. Nine (25%) optometrists and 20 (50%) medical graduates were not aware that retinopathy is the commonest ocular complication of diabetes. Only three (8.33%) optometrists and 12 (30%) doctors expected to find retinopathy in more than 10% of their diabetes patients. That duration of diabetes is the single-most important risk factor was known to the majority of the participants; 36 (90%) of the of the medical graduates and 24 (66.6%) of the optometrists. 22 (61.1%) optometrists and 12 (30%) doctors did not find a risk factor of retinopathy in pregnancy. 18 (45%) doctors and 10 (27.7%) optometrists did not consider hyper-lipidemia a risk factor. Three (8.33%) optometrists and four (10%) doctors did not consider hypertension a risk factor. 10 (25%) doctors believed that control of blood sugar can completely prevent retinopathy. For a 35-year-old patient, 16 (40%) doctors and eight (22.2%) optometrists had advice not to hurry for ocular examination. Only 28 (77.7%) optometrists and 24 (60%) doctors advised immediate ocular examination. For a 10 year old patient, 11 (30.5%)

optometrists and 12 (30%) doctors advised ocular examination only in case of any ocular complaint; 20 (55.5%) optometrists and 24 (60%) doctors advised for immediate ocular examination and five (13.8%) optometrists and four (10%) doctors decided to wait for five years before ordering an ocular examination. 20 (50%) doctors and 22 (61.1%) optometrists were aware that laser can actually prevent visual loss in retinopathy. 11 (30.5%) optometrists and six (15%) doctors believed prophylactic laser can completely prevent any retinopathy to occur. Three (8.33%) optometrists and fourteen (35%) doctors believed laser is a complete cure for retinopathy. Only four (10%) doctors and one (2.78%) optometrist were aware that cataract surgery can worsen pre-existing retinopathy.

Discussion

More than 50% in both groups i.e. PMOA and doctors had poor or very poor knowledge regarding DR. This knowledge deficit may interfere with care of diabetic ocular complications. However there was no significant difference in knowledge between doctors and optometrists. The doctors responded marginally better than optometrists in the sections regarding epidemiology and risk factors. In the section of management, the knowledge of both groups was same. The differences between the two groups were not statistically significant. Although diabetes patients are at increased risk of developing and worsening of retinopathy during pregnancy⁷, 61.1% optometrists and 30% doctors did not find a risk factor of retinopathy in pregnancy. This lack of awareness may put pregnant diabetics at high risk of vision-loss, as many of them may not be referred for ocular examination during pregnancy. 30% doctors thought that control of blood sugar could completely prevent retinopathy. This false belief can make both doctors and the patient inappropriately complacent. On the other hand, although the importance of strict control of blood sugar and blood pressure in management of diabetic retinopathy has been emphasized²⁵, the appropriate message may not be communicated to a good number of diabetes subjects. 45% doctors and 27.7% optometrists did not consider hyperlipidemia a risk factor of retinopathy. After diagnosis, type-1 patient can wait for five years and type-2 patients need immediate ocular check-up²⁶. In our study, only 77.7% optometrists

Annexure 1 : Response of doctors and optometrists to multiple-choice questions

Serial	Question	Answer	Doctor	PMOA
1.	The largest number of diabetes patients live in	India	24	19
		China	5	4
		USA	6	9
		Do not know	5	4
2.	Commonest ocular complication of diabetes	Retinopathy	20	27
		corneal ulcer	4	0
		Cataract	12	6
		Do not know	4	3
3.	Out of 100 diabetes patients how many do you expect to have retinopathy	<2	10	12
		About 3	18	13
		10	12	3
		Do not know	0	3
4.	Most important risk factor for diabetic retinopathy	Duration of Diabetes	36	24
		Age of patient	0	6
		Blood sugar level	3	4
		Do not know	1	2
5.	Pregnancy is a risk factor for diabetic retinopathy	True	28	14
		False	12	22
		Do not know	0	0
6.	Hyperlipidemia is a risk factor for diabetic retinopathy	True	22	26
		False	18	10
		Do not know	0	0
7.	Hypertension is a risk factor for	True	36	33
		False	4	3
		Do not know	0	0
8.	Strict control of blood sugar	Can be completely prevent DR to occur	10	13
		Slows down progression of DR	27	14
		has not know	1	4
		Do not know	2	5
9.	A 35 year old patient diagnosed for the first time to have diabetes without any ocular complaint at present Ocular examination will be order	Immediately	24	28
		after five years	0	0
		only if there is any complaint	16	8
10.	A 10 year old patient diagnosed for the first time to have diabetes without any ocular complaint. Ocular examination will be order	Immediately	24	20
		after five years	4	5
		only if there is any ocular complaint	12	11
11	Laser can	Completely prevent DR to occur	6	11
		cure DR completely	14	3
		prevent DR related vision loss	20	22
		Do not know	0	0
12	Cataract surgery can worsen pre-existing retinopathy	True	4	1
		False	33	34
		Do not know	3	1

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