

Awareness of Diabetic Retinopathy amongst Diabetic Patients at the Murtala Mohammed Hospital, Kano, Nigeria.

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SUMMARY

Background: Blindness from diabetic retinopathy is a preventable complication of diabetes if the retinopathy is detected early. Among other approaches, strong awareness of retinopathy by diabetic patients could help in the early detection, management and prevention of this complication. This study sets out to determine the general awareness of diabetic retinopathy amongst diabetic patients attending the outpatient diabetes clinic of the Murtala Muhammad hospital, Kano. This is the central reference general hospital within the ancient and historic walls of the traditional city of Kano. The hospital has an eye unit but with a paucity of manpower and equipment. Most diabetic patients often on self-referral usually present to the eye clinic only when they experience a marked reduction in vision. In the case of diabetic retinopathy, this is unfortunately late for any meaningful intervention. Although primary diabetic caregivers are usually aware of the possibility of eye complications from diabetes, they tend to wait until patients make visual complaints before screening them or inviting eye care personnel to join in the management. Diabetic retinopathy screening protocols are in most cases either not available, or not strictly followed. Patient awareness of diabetic retinopathy and its associated risk factors should aid compliance with risk control measures, and help drive patient demand for retinopathy screening.

Method: This is a cross sectional study conducted using an interviewer-administered questionnaire. All consenting adult patients seen at the diabetes clinic over a one-month period were recruited for the study.

Results: A total of 185 patients were involved with a mean age of 55.4 years. The majority of the patients (78.4%) had no formal western education and were mainly traders, farmers or housewives. 84.3% of the patients were generally aware of diabetic retinopathy with their main source of information being hospital staff and fellow patients. 80.5% knew diabetic retinopathy could lead to blindness but only 15.7% have ever had retinopathy screening. There was little or no knowledge of retinopathy risk factors or the need for early detection through

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screening.

Conclusion: Although there is general awareness of diabetic retinopathy amongst a majority of the patients, there is however little or no knowledge of its risk factors and prevention. There is therefore a need for increasing this awareness, and the provision of access to retinopathy screening services to the patients.
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Key words: Diabetic retinopathy, Awareness, Retinopathy screening, Nigeria

INTRODUCTION

Diabetes mellitus is now a worldwide problem. In industrialized countries, diabetic retinopathy is the leading cause of blindness amongst working adults^{1,2}. Recently, diabetes is becoming an increasing problem in the developing world with the World Health Organisation projecting a 170% increase in the number of people with diabetes in developing countries by the year 2025.³ Studies have indicated that the incidence of blindness from diabetic retinopathy is significantly reduced by early treatment with laser photocoagulation^{4,5}. Early treatment can only be instituted if retinopathy is detected early. Population screening for diabetes is a separate issue but for already identified diabetics, there should be adequate information provided about the complications of the disease including retinopathy. Diabetic patients should also be aware of the importance of regular eye examinations to detect early retinopathy, which is most often symptom less. Even with the control of retinopathy risk factors such as high blood pressure, high serum cholesterol, poor diabetic control, smoking, obesity, and renal disease, regular ocular examination is highly recommended^{6,7}. This is because long duration of the disease is probably the most significant risk factor for retinopathy⁸. Since diabetes is by nature a chronic ailment, most patients ultimately develop retinopathy in the course of the disease. Eye examination of 1,863 diabetic patients seen at the Aravind eye clinic in India, revealed diabetic retinopathy in 37%. Only a few of the patients were actually referred to the clinic for eye examination, as most of them were self-referrals for other complaints⁹. A study at Ibadan¹⁰, Nigeria examined 76 patients with type 2 diabetes at the diabetic clinic and found 42.1% with previously undiagnosed diabetic retinopathy. Likewise in Pakistan¹¹, another study revealed that amongst 202 patients attending a diabetic clinic, eye examination revealed diabetic retinopathy in 118 (58%) of the patients. There is a paucity of

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data in the literature on awareness or knowledge of diabetic retinopathy amongst diabetic patients but a study¹² of an urban (supposedly better informed) population in southern India involving 2,522 subjects, asked as to whether diabetes could reduce vision. Only 28% were aware of such a possibility. A majority of the positive responders reported a diabetic family member, friend or relative as the source of information (possibly from a family member already blinded by diabetes). Apart from an affected acquaintance being the source of information on diabetic retinopathy, awareness increased the higher the individual's level of education. This would suggest that the awareness of diabetic retinopathy in the general population is generally low. However, amongst diabetic patients awareness of retinopathy should expectedly be greater. This was the case in a study¹³ of 480 diabetic patients in Myanmar (Burma) where 86% of the patients were aware of diabetic eye disease. Kano state located in Northwestern Nigeria, has a population of about 9 million people¹⁴ and a diabetes prevalence rate of 1.8%.¹⁵ Although there is ongoing work on diabetic retinopathy, there is no published data on diabetic retinopathy in the state.

OBJECTIVES

- Assessing the awareness of diabetic patients as regards diabetic retinopathy.
- When aware, to find out the common sources of information on diabetic retinopathy amongst the patients.

METHODOLOGY

After due ethical clearance from the hospital management, all consenting patients attending the twice-weekly diabetic clinic of the Murtala Mohammed Hospital, Kano over a period of one month were recruited for the study. This covered the period from 11 June to 9 July 2009. Data collection was by means of an interview conducted by the authors using a pre-tested protocol after obtaining an informed written consent. The questionnaire was verbally translated to the local language (Hausa) so as to ensure the patient fully understood each question. The questionnaire contained information on patient personal data, educational background, duration and family history of diabetes, and medical history of high blood pressure. The second part of the questionnaire contained questions to determine awareness of retinopathy, source of information on this awareness, and a history of retinopathy screening. Information on retinopathy treatment and prevention, as well as knowledge of retinopathy risk factors was also asked. The specific questions asked on the general awareness of retinopathy was "Can diabetes affect the retina/back of the eyeball?" and also, "If yes, could this lead to blindness?". Data obtained was analyzed using frequencies, t-test, chi-square test, and bivariate correlation. Statistical software used for data analysis was the statistical package for the social sciences (SPSS) for windows version 16.0.

RESULTS

A total of 185 patients were interviewed. 76 were males while 109 were females. The age range was 16 to 90 years with a mean age of 55.4 years. The majority of the patients (78.4%) had no formal western education and were mainly traders, farmers or

housewives (Table 1). The average duration of diabetes amongst the patients was 5.9 years. Up to 74 respondents (40%) had a known family history of diabetes and 46.5% of all the patients also had confirmed high blood pressure.

Awareness of retinopathy as a complication of diabetes amongst students and civil servants was high (Table 1). Although 156 patients (84.3%) were aware of diabetic retinopathy and 80.5% knew it could lead to blindness, only 29 patients (15.7%) have ever had screening for retinopathy. All those screened had their screening at other clinics/facilities but not at the diabetes clinic. The leading sources of information on retinopathy as depicted in Table 2 were, hospital staff (24.9%) and fellow patients (22.2%). Only 23 patients (12.4%) had ever been advised on the need for diabetic retinopathy screening and this was after they had made eye related complaints.

Good diabetic control was the only retinopathy risk factor identified by most of the patients but none correctly identified the treatment for diabetic retinopathy. Although 100 of the 156 patients aware of retinopathy were females, (Table 3) there was no significant correlation between awareness of retinopathy and gender. Out of the 156 respondents that were aware of retinopathy, 127 (81.4%) have never been screened for it. Among the remaining 29 patients that have had retinopathy screening, female gender ($p < 0.01$) and having formal education ($p < 0.05$) were the significant factors related to screening (Table 4). The duration of diabetes and a positive family history, were not related to retinopathy screening.

Table 1: Awareness of retinopathy by occupation

Occupation	Awareness of retinopathy			Total
	Yes	No	Not sure	
Trader	68	2	9	79
Housewife	44	2	5	51
Business	15	0	4	19
Farmer	10	1	4	15
Civil servant	12	0	0	12
Pensioner	4	0	2	6
Student	3	0	0	3
Total	156	5	24	185

Table 2: Source of information for 156 patients aware of retinopathy

Information source	Frequency	Percent	Cumulative percent
Hospital	46	29.5	29.5
Fellow patient	41	26.3	55.8
Self conviction	34	21.8	77.6
Family/friends	28	18.0	95.6
Mass media	6	3.8	99.4
Others	1	0.6	100.0
Total	156	100.0	

Table 3: Awareness of retinopathy by gender

Gender	Awareness of retinopathy			Total
	Yes	No	Not sure	
Male	56	3	17	76
Female	100	2	7	109
Total	156	5	24	185

Table 4: Patients screened for retinopathy by gender

Gender	Retinopathy screen		Total
	Yes	No	
Male	5	71	76
Female	24	85	109
p value	<0.01	-	-
Total	29	156	185

DISCUSSION

The retinopathy awareness rate amongst the patients was quite high (84.3%). This is similar to findings in Myanmar¹³ where retinopathy awareness rate amongst diabetic outpatients was 86%. Awareness rates between diabetic patients and the general population may not be similar. Awareness rates are expectedly lower in the general population^{12,16}. In this study, most of the patients attributed their source of information on diabetic retinopathy to the hospital environment (hospital staff or fellow patients). Other sources such as the mass media or the Internet did not seem to play any significant roles.

This may be due to challenges of poverty, poor electricity supply, low computer literacy, and language barrier. Since patients tend to trust and rely on any information given by their hospital care givers, hospital staff are in the best position to influence patient actions. They should actively provide information to patients especially in regard to preventive measures and screening for retinopathy. This was demonstrated in Australia¹⁷ where information given by diabetes nurse educators during patient home visits positively predicted the possibility of having an eye screening examination by the patients. The effect was that 77% of 11,247 diabetics underwent eye screening within two years.

Information given to patients should not just be on the ocular complications of diabetes, but also on the risk factors for these complications and how to prevent/limit them. Among the patients in our study, this was clearly not provided. All the patients found to have been screened for diabetic retinopathy in this study, were examined by Ophthalmologists only after they had presented with visual complaints. Primary diabetic care givers/general practitioners though aware of retinopathy, do not usually examine the fundi of most of their patients. They also do not refer or advise patients on the need for periodic retinopathy screening. With most of the patients ignorant of this requirement, it is not surprising that the level of retinopathy awareness does not seem to translate into a higher demand for retinopathy screening. In this study, only 15.7% of the patients have ever had retinopathy screening. Also, formal education was found to be a significant factor predicting screening. A majority of the respondents though mostly literate in Hausa or Arabic language, have not had any formal western education. There was also no retinopathy screening protocol in place. The duration of diabetes, and a family history of diabetes were not related to the rate of screening. Female gender was however related to screening and this may be explained by the seemingly greater social interaction amongst the female patients that could indirectly influence behavior.

The issue of low screening rates amongst known diabetics

seems to be a common finding even in other studies^{11,18} where screening rates ranged from 5% to 47%. In this regard, primary diabetic care givers should be trained and encouraged to provide at least first line screening to patients preferably in a well planned retinopathy screening programme.

CONCLUSION

There is reasonably high awareness of diabetic retinopathy amongst the patients with the main source of information about retinopathy being hospital staff and fellow patients. There is however, very little or no knowledge of the risk factors, treatment and prevention of diabetic retinopathy especially in regard to screening. Blindness being a devastating complication of diabetes, the importance of early diagnosis and treatment of retinopathy through screening needs to be emphasized. A diabetic retinopathy-screening programme, which is now obviously absent, needs to be introduced in the hospital.

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