



Contents lists available at BioMedSciDirect Publications

International Journal of Biological & Medical Research

Journal homepage: www.biomedscidirect.com



Original article

Awareness of Diabetic and hypertensive eye disease in Public

Rajani Kadri

Assistant professor, Department of ophthalmology, A J Institute of medical Sciences, (AJIMS), Kuntikana, Mangalore, India.575004

ARTICLE INFO

Keywords:

Diabetic retinopathy,
Hypertensive, awareness,
Literacy.

ABSTRACT

Objective: To assess the level of awareness of diabetic and hypertensive eye diseases in public. **Method:** A total of 653 patients took part in the study. They were requested to answer an interview based questionnaire which included questions regarding awareness of diabetic and hypertensive eye diseases. **Results:** A total of 653 patients took part in this study. Mean age of the patient was 53.4 years and 51.6% were males. 147(22.5%) of the patients were diabetics and 294(32.8%) of the patients were hypertensive. Awareness of diabetic retinopathy was found in 182(27.9%). Only 5.1 % (33) patients were aware of hypertension related eye diseases. 435(66.5%) of the patients were advised by the physicians for eye check up. Awareness of treatment for diabetic retinopathy was seen in 59(9%) patient's only. **Conclusion:** There is a great need for health education in this Indian population to increase the level of awareness and knowledge of systemic disease related eye problems. This will help in early detection and treatment of eye diseases and reducing visual morbidity

© Copyright 2011 BioMedSciDirect Publications IJBMR -ISSN: 0976-6685. All rights reserved.

1. Introduction

Awareness of systemic disease related eye problems play an important role in encouraging people to seek timely eye care and can therefore help in reducing the burden of visual impairment. Diabetes Mellitus, particularly type II is a major public health concern world wide. In developing nations, the estimated increase in patients with diabetes mellitus is approximately 150%, from 30 million in 2000, to 80 million in 2030 [1]. Diabetics are 25 times more likely to become blind than nondiabetics due to diabetic retinopathy (DR) [2]. Though the occurrence of DR cannot be prevented, its sight – threatening complications can be minimized by early detection and management of the disease.

Hypertension is one of the most common diseases afflicting humans worldwide. It was identified by the world health report 2002 the third ranked factor for disability adjusted life years [3]. Systemic hypertension, in addition to being the chief cause of death is also a leading cause of visual impairment. The eye is an end arteriolar system and is therefore susceptible to the changes in

blood pressure [4]. The present study was undertaken to assess the awareness level of diabetes and hypertension eye disease in public.

2. Material and Methods

A simple questionnaire based cross sectional hospital based study was conducted on a random sample of 653 patients seen over a period of six months. Written informed consent was taken from all participants before the administration of the questionnaire and confidentiality was maintained. This study was approved by our hospital ethical committee.

An interview-based questionnaire developed by the researchers was administered to each of the participant by a social worker. The questions were simple, 'Yes' and no questions. The questions included.

1. Are you a diabetic/hypertensive?
2. Are you aware of diabetic retinopathy?
3. Are you aware of hypertension related eye diseases?
4. Did physicians advise eye check up?
5. Are you aware of treatment for diabetic retinopathy?
6. What is your opinion of control of blood pressure to preserve vision?

The data collected was analyzed.

* Corresponding Author : Dr Rajani Kadri, MS, DNB
Assistant professor,
Department of ophthalmology, A J Institute of medical Sciences, (AJIMS)
Kuntikana, Mangalore, India.575004, Ph:0980297551. Fax:0824-2225541
E mail : rajani_kadri@rediffmail.com

3.Results

A total of 653 patients took part in this study. Mean age of the patients was 53.4 years (range 29-98) with a roughly equal gender distribution (51.6% males and 48.4% females). Table I shows the education status of the participants. Majority 56.5% (369) were in the illiterate, primary education group. 147(22.5%) of the patients were diabetics and 294(32.8%) of the patients were hypertensives Awareness of diabetic retinopathy was found in 182 (27.9%). Only 5.1 %(33) patients were aware of hypertension related eye disease. 435(66.5%) of the patients were advised by physicians for eye check up. Awareness of treatment (laser) for DR was seen in 59(9%) patients only.

Table1: Education of the patients

| | Frequency | Percent |
|------------|-----------|---------|
| Illiterate | 145 | 22.2 |
| Primary | 224 | 34.3 |
| Secondary | 140 | 21.4 |
| PUC | 52 | 8.0 |
| Graduates | 92 | 14.1 |

Table 2 & 3 gives correlation between awareness of DR and hypertensive eye disease versus education status. In both the situation awareness was better in the educated group. Table 4 gives correlation between awareness of DR versus diabetes. Improved awareness was seen in diabetics.

Table 5 gives correlation between awareness of treatment for DR in diabetics and non diabetics. Awareness was better in diabetics. All (100%) of patients agreed for adequate control of hypertension and ocular examination once they were made aware of vision threatening hypertensive eye diseases.

Table2: Awareness of diabetic retinopathy versus education status

| Education | Awareness present | | Awareness absent | |
|------------|-------------------|------|------------------|------|
| | Count | % | Count | % |
| Illiterate | 24 | 16.6 | 121 | 83.4 |
| Primary | 45 | 20.1 | 179 | 79.9 |
| Secondary | 55 | 39.3 | 85 | 60.7 |
| PUC | 14 | 26.9 | 38 | 73.1 |
| Graduates | 44 | 47.8 | 48 | 52.2 |
| Total | 182 | 27.9 | 471 | 72.1 |

a.X2=43.309 p<0.001vhs

Table3. Awareness of hypertensive eyedisease versus education status

| Education | Awareness present | | Awareness absent | |
|------------|-------------------|------|------------------|------|
| | Count | % | Count | % |
| Illiterate | 6 | 4.1 | 139 | 95.9 |
| Primary | 3 | 1.3 | 221 | 98.7 |
| Secondary | 8 | 5.7 | 132 | 94.3 |
| PUC | 2 | 3.8 | 50 | 56.2 |
| Graduates | 14 | 15.2 | 78 | 84.8 |
| Total | 33 | 5.1 | 620 | 94.9 |

a.X2=26.786 p<0.001vhs

Table 4. Awareness of diabetic retinopathy versus diabetic status

| Awareness of diabetic retinopathy | YES | | Patients with Diabetes mellitus NO | |
|-----------------------------------|-------|----|------------------------------------|------|
| | Count | % | Count | % |
| Present | 75 | 51 | 107 | 21.1 |
| Absent | 72 | 49 | 399 | 78.9 |

a.X2=50.569 p<0.001vhs

Table5: Awareness of treatment for diabetic retinopathy versus diabetic status

| Awareness of diabetic retinopathy | YES | | Patients with Diabetes mellitus NO | |
|-----------------------------------|-------|------|------------------------------------|----|
| | Count | % | Count | % |
| Present | 49 | 33.3 | 10 | 2 |
| Absent | 98 | 66.7 | 496 | 98 |

a.X2=136.274 p=0.001vhs

Table6: Ocular manifestations of hypertension

| |
|----------------------------|
| Arterial occlusions |
| Venous occlusions |
| Macro aneurysms |
| Ischemic optic neuropathy |
| Extraocular muscle palsies |
| Hypertensive retinopathy |

4. Discussion

Awareness creation in a community is one of the first steps in any programme aimed at reducing DR [5]. The impact of such programmes need to be evaluated. The impact of literacy on increased awareness of eye diseases was a known fact in earlier studies [6]. Our study further supports the proposition that education is important in creating awareness. There was an increased awareness of both diabetic and hypertensive eye diseases in educated class.

As the illiterates and patients with only primary education coming from low socio economic group form a major portion of our society, media (newspaper, television) play a very minimal role in educating public. They have no access to such education materials. Generally diabetics are well informed regarding diabetic eye disease, as in our study. This could be because of common human tendency to acquire more knowledge of the disease he is suffering from. But the general public (who may or may not be diabetics) need to be made aware of diabetic eye disease and the treatment, as, in developing countries; the disease as such is under diagnosed [7].

So a group approach is required. Group lectures, counseling sessions will be ideal. Much effort has been devoted to educating the public regarding diabetic and hypertensive eye diseases; however the impact of such efforts is to be evaluated to identify areas which may require additional educational efforts [1, 2].

Namperumalsamy P and co workers [8], in a study done in developing country found 29% of subjects unaware of DR similar to the figures (27.9%) obtained in our study. However a study done in Singapore [9], a developed country showed an awareness rate of 70-80%. This state of decreased awareness of DR in developing countries demands for many more health programmes for educating the public. It is not uncommon to see a diabetic in advanced stages of retinopathy in a developing country because of irregular follow up examination and late diagnosis of diabetes. Identifying and treating high risk persons before severe vision loss can help to reduce blindness associated with DR [10].

An estimated 2-5% of all diabetics have proliferative DR [10]. If not treated, this could cause blindness in more than 50%. Currently, even diabetics, leave alone the general population [11], are not made aware of the ocular complications of diabetics and the need of regular yearly eye examination. General physicians play a very important role in advising diabetics as they are the first ones to treat them [12, 13]. In our study 66% (435) of the patients were advised for eye check up by physicians.

Sudden and catastrophic events occurring in the eyes of hypertensive patients (Table 6) can result in permanent vision loss. With an increase in the number of hypertensives [14], these events have also increased thus resulting in severe visual morbidity. Also in the Barbados eye study [15], high systolic or diastolic blood pressures increased the risk of DR, whereas antihypertensive treatment halved the risk of DR versus no treatment. Hence an awareness of hypertension will also decrease the risk of DR related blindness.

Our study had a few limitations; Firstly with a limited sample of patients visiting one institution, the results should be extrapolated with caution. Secondly, very minimal parameters were included in the questionnaire as against the other studies. Disinterest in answering lengthy questionnaire was seen among our patients. As this would result in fallacy in our reporting it was avoided.

4. Discussion

There is an urgent need for health education in order to increase the level of awareness about eye diseases in developing countries. Increasing the awareness will lead to an increase in understanding and acceptance of the importance of routine eye examination for early detection and treatment thereby decreasing visual impairment.

6. References

- [1] Rani PK, Raman R, Agarwal S, Paul PG. Diabetic retinopathy screening model for rural population : awareness and screening methodology. *Rural Remote Health*. 2005; 5(4):350.
- [2] Rani PK, Raman R, Subramani S, Perumal G. Knowledge of diabetes and diabetic retinopathy among rural population in India and the influence of knowledge of DR on attitude and practice. *Rural Remote Health*. 2008; 8(3):838.
- [3] Zafar NS, Gowani SA, Irani FA, Ishaq M. Awareness of risk factors, presenting features and complication of hypertension among hypertensives and normotensives. *J PMA*. 2008; 58: 711-714.
- [4] James S. Wolffsohn, PhD and Peter G. Hurcomb, BSc Wolffsohn JS, Hurcomb PG. Hypertensives and the eye. *Current Hypertension reports*. 2002, 4; 471-476.
- [5] Dandona R, Dandona L, John RK, McCarty CA, Rao GN. Awareness of diseases in an urban population in southern India. *Bull World Health Organ*. 2001; 79(2):96-102.
- [6] Williams MV, Baker DW, Parker RM, Nurss JR. Relationship of functional health literacy to patients knowledge of their chronic disease. A study of patients with hypertension and diabetes. *Arch Intern Med*. 1998 ;26: 158(2):166-172.
- [7] Zargar AH, Khan AK, Masoodi SR, Laway BA, Wani AI, Bashir MI. Prevalence of type 2 diabetes mellitus and impaired glucose tolerance in the Kashmir Valley of the Indian subcontinent. *Diabetes Res Clin Pract*. 2000; 47:135-6.
- [8] Namperumalsamy P, Kim R, Kaliaperumal K, Sekar A, Karthika A, Nirmalan PK. A pilot study on awareness of diabetic retinopathy among non-medical persons in South India. The challenge for eye care programmes in the region. *Indian J Ophthalmol*. 2004; 52(3):247-251.
- [9] Wee HL, Ho HK, Li SC. Public awareness of diabetes mellitus in Singapore. *Singapore Med J*. 2002; 43(3):128-134.
- [10] Verma L, Elankumaran P, Prakash G, Venkatesh P, Tewari HK. Awareness of diabetic retinopathy among diabetics. *Indian J Ophthalmol*. 2002; 50(4):355.
- [11] Jain S, Preetha K, Jain SC, Jain A. Diabetic retinopathy: a preventable scourge. *J Indian Med Assoc*. 2008; 106(5):303-306.
- [12] Muecke JS, Newland HS, Ryan P, Ramsay E. Awareness of diabetic eye disease among general practitioners and diabetic patients in Yangon, Myanmar. *Clin Experiment Ophthalmol*. 2008; 36(3):265-273.
- [13] Bhattacharjee S. Diabetic Retinopathy; need for awareness amongst physicians. *J Indian Med Assoc*. 2002; 100(3):153-154.
- [14] Zachariah MG, Thankappan KR, Alex SC, Sarma PS, Vasana RS. Prevalence-correlates Awareness Treatment and control of hypertension in a Middle Aged urban population in Kerala. *Indian Heart J*. 2003; 55(3):245-251
- [15] Leske MC, Wu SY, Hennis A, Hyman L, et al. Hyperglycemia, blood pressure, and the 9 year incidence of diabetic retinopathy. The Barbados Eye studies. *Ophthalmology*. 2005 May; 112(5):799-805. *Ophthalmology*. 2005; 112:799-805