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"DIABETIC RETINOPATHY CHANGES AND ITS AWARENESS AMONG PATIENTS ATTENDING DIABETIC EYE CAMPS IN KOLAR DISTRICT."

Ophthalmology

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ABSTRACT

PURPOSE: To examine and document the diabetic retinopathy changes among patients attending diabetic eye camps in Kolar district and to assess the awareness of diabetic retinopathy and the factors influencing it, in patients attending the diabetic eye camps.

METHODS: A cross sectional study was conducted on 250 patients attending diabetic eye camps conducted every month, with prior publicity, in Kolar district between December 2015 to June 2017. All diabetic patients fulfilling the inclusion criteria were interviewed about their awareness of DR with the help of a questionnaire. These patients were then subjected to an ophthalmic examination and were graded based on their fundus findings. Questionnaires were evaluated and scored and subjects were grouped into Excellent , Good, Poor and Very poor categories based on their scores.

RESULTS: Our study was conducted on 250 diabetic patients comprising of 149 male (59.6%) and 101 female (40.4%) patients. Prevalence of diabetes among the study population was found to be 20.80 %. In this study 11.2% of the subjects had excellent, 24.8% had good, 9.6% had poor and 54.4% had very poor awareness regarding DR. We also found that 2.8% of the subjects had good, 10.4% had poor and 86.8% had very poor awareness regarding treatment of diabetic retinopathy.

CONCLUSION : Lack of knowledge regarding the need for screening for diabetic retinopathy was found to be a major barrier to compliance with regular screening.

Therefore, there is an urgent need to develop strategies to educate diabetic patients about this potentially blinding complication of diabetes.

KEYWORDS

INTRODUCTION

Diabetes Mellitus (DM) currently affects more than 171 million people in the world and will affect approximately 366 million by 2030, with most rapid growth observed in the developing countries among populations of working age. The prevalence of diabetes among all age groups throughout the world was estimated to be 2.8% in 2000 and will rise to 4.4% in 2030. The number of people with diabetes might double as a consequence of population aging and urbanization [1] thus making India a country with maximum number of diabetics in the world by the year 2030. India now has 40.9 million people with diabetes mellitus and the projected estimate for the year 2030 is 80 million [2].

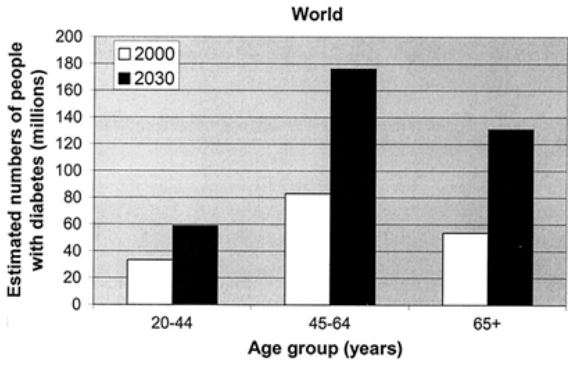


Figure 1[1] - Number of diabetics in 2000 and projected increase in 2030

Indians are reported to have a racial and genetic susceptibility to diabetes.[3,4] An improvement in economic standards resulting in adoption of a more sedentary lifestyle has contributed to this epidemic, especially of Type 2 Diabetes.

The most common ophthalmic complication of diabetes mellitus is diabetic retinopathy(DR). It is estimated by WHO that diabetic retinopathy is responsible for around 4.8% of 37 million cases of blindness throughout the world [5]. The incidence of blindness is greater by 25 times in people with diabetes than in the general population [6]. Diabetic retinopathy develops in most people with Type I diabetes and in greater than 77% of those with Type 2 diabetes who survive more than 20 years of the disease [7]. There is direct correlation between the duration of diabetes and the prevalence and severity of diabetic retinopathy. It is well established that longer the patients have diabetes, higher the prevalence of diabetic retinopathy [8,9].

The Knowledge possessed by a community refers to their understanding of a particular topic, which in this study is, diabetes and diabetic retinopathy. Attitude refers to their feelings about the topic, as well as any pre-conceived ideas that they may have towards it. Practice indicates the ways in which they demonstrate their knowledge and attitude through their actions[10].

There is always a need to investigate knowledge, attitude and behavior among diabetic patients to help in future development of national health programs and techniques for effective health education[11].

Hence this study was undertaken to detect the diabetic retinopathy changes and assess its awareness among the patients attending the diabetic eye camps in Kolar district, as no study about this has been conducted in this area. Thus, we would also like to create awareness about DR and its effect on visual outcome, thereby encouraging regular screening so that early detection and timely intervention can be given to patients.

MATERIALS AND METHODS:

OBJECTIVE:

1) To examine and document the diabetic retinopathy changes.
2) To assess the awareness of diabetic retinopathy and the factors influencing it.

SOURCE OF DATA:

A cross sectional study was conducted on 250 patients attending diabetic eye camps conducted every month, with prior publicity, in Kolar district.

STUDY PERIOD: December 2015 to June 2017.

INCLUSION CRITERIA:

- Patients diagnosed with Type 1 and Type 2 DM.

EXCLUSION CRITERIA:

- Hypertensive patients.
- Gestational DM.

METHODOLOGY

All diabetic patients fulfilling the inclusion criteria were interviewed about their awareness of DR with the help of a questionnaire.

These patients were then subjected to an ophthalmic examination including visual acuity with Snellens chart kept at a distance of 6m in a naturally illuminated room, anterior segment examination was performed with torch light and fundus examination was done at the end of 45mins after dilatation of the pupils with the instillation of Tropicamide plus (tropicamide 0.8% and phenylephrine 5%) with a direct and indirect ophthalmoscope in the camp and those patients who are diagnosed to have diabetic retinopathy changes who need further evaluation with a slit lamp, applanation tonometry, gonioscopy, fundus fluorescein angiography and B-scan ultrasonography were then referred to the hospital. The patients diagnosed to have diabetic retinopathy were further classified according to ETDRS classification into Non Proliferative DR, Proliferative DR, Advanced diabetic eye disease and Macular edema.

A questionnaire in both English and Kannada, was used to collect the responses. It comprised of six questions on awareness of the disease, five questions on the awareness on treatment, 6 questions on attitude of the patients towards the disease and 4 questions on the practice patterns of the patients about diabetes and eye care. Without prompting from the investigator or relative accompanying the participant, responses were collected. Personal information like age, sex, education status, duration of diabetes and treatment were collected. Two or three graded responses were used for each question. The correct responses of each question were determined by the study investigators prior to the study. If the response of participants to these questions matched with gold standard, it was considered as correct and 10 points for that response was awarded. For wrong answer, minus 10 points were given. For equivocal response '0' point was designated.

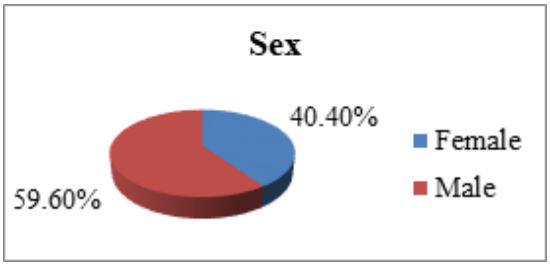
The total points of awareness, attitude and practice related questions were regrouped into four categories. Person with 75% to 100% score was considered to have 'excellent' grade of response. If the score was 50% to 74%, it was considered as good. Persons scoring 25% to 49% and 0% to 24% were grouped into poor and very poor grades respectively.

We used pretested data collection form. The data from these forms was transformed on spreadsheet using EPI Data software. We used Statistical Package for Social Studies (SPSS) for the analysis. Univariate analysis was conducted by parametric method. We calculated frequencies and percentage proportions.

Awareness was then created among all the patients attending the eye camp with the help of audio visual aids and through lectures regarding the effects of diabetes on the eye and the necessity for regular eye check-up to prevent ocular morbidity.

RESULTS

Our study was conducted on 250 diabetic patients comprising of 149 male (59.6%) and 101 female (40.4%) patients attending diabetic eye camps conducted in Kolar district. Mean age of the patients was found to be 58.01± 14.28 years. Mean age among males was 59.2 ± 14.9 years and among females was 56.3 ± 13.2 years.



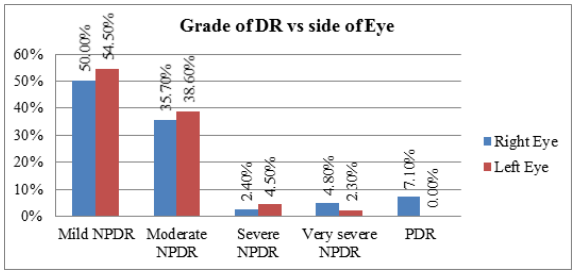
Graph 1: Pie diagram showing Sex distribution among the patients.

Prevalence of diabetes among the study population was found to be 20.80 %.

Among Type 1 DM subjects, 9% had DR and among Type 2 DM, 23.3% had DR, and this was found to be statistically significant. (p = 0.03). In our study, 17.35 % of those with diabetes of duration less than 10years had DR and 45.16 % of those with duration of more than 10years had DR. This was also found to be statistically significant (p = 0.003)

Diabetic retinopathy patients comprised of 34 males and 18 females i.e. 65.4% of the patients were males, showing male preponderance.

Prevalence of NPDR was 96.40% and PDR was 3.49%. Among NPDR patients, 45 eyes (52.33%) had mild NPDR, 32 eyes (37.21%) had moderate NPDR, 3 eyes (3.49%) had severe NPDR and 3 eyes (3.49%) had very severe NPDR. PDR was present in 3eyes (3.49%). CSME was seen in 17 eyes (20.48%).



Graph 2: Bar diagram showing Grade of DR with respect to side of Eye

Among type 1 DM, 26.6% had a positive family history and among type 2 DM 73.4% had family history. This difference in family history with respect to type of DM was statistically significant. (p <0.001).

In this study 11.2% of the subjects had excellent, 24.8% had good, 9.6% had poor and 54.4% had very poor awareness regarding DR. We also found that 2.8% of the subjects had good, 10.4% had poor and 86.8% had very poor awareness regarding treatment of diabetic retinopathy. When asked about attitude, 6.4% of the subjects had excellent, 14.4% had good, 14% had poor and 65.2% had very poor attitude towards the disease. Our study also showed that, 30.4% of the subjects had excellent, 21.6% had good, 6.4% had poor and 41.6% had very poor practices regarding diabetic retinopathy.

DISCUSSION

Many cross-sectional studies have been conducted over the past decades to ascertain the prevalence of DR in the diabetic population in various regions of the country and world.

In various South Indian studies conducted to calculate prevalence by Raman et al.[12] showed a prevalence of 18.1%, another study conducted by Rema et al.,[13] showed a prevalence of 17.6%, a study by P Namperumalsamy et al.,[14] showed a prevalence of 10.6%, Narendran et al.,[15] showed a prevalence of 26.2% and by Dandona et al.,[16] a prevalence of 22.58%.

We observed different grades of diabetic retinopathy in 52 patients out of 250, i.e, prevalence of diabetic retinopathy in our study was 20.80% (65.40% were males and 34.60% were females). Among Type 1 DM subjects, 9% had DR and among Type 2 DM, 23.3% had DR. This difference in diabetic retinopathy between type 1 and type 2 DM was statistically significant (p = 0.03*).

A number of health awareness studies have been performed in developing countries, however very limited literature exists on the knowledge and awareness of diabetic retinopathy amongst people with diabetes in Kolar district. The results of our study suggest that not only knowledge but also disease practices were less than satisfactory in our study subjects. Awareness creation is very important in the creation of a successful program to battle against any disease in the community. This is especially true with respect to the growing problem of Diabetic Retinopathy. Studies conducted previously have revealed that Diabetic Retinopathy, despite its status as one of the greatest causes of blindness in both developed and developing countries, is unknown to a majority of the population. Without awareness of the disease it is impossible to prevent blindness from Diabetic Retinopathy, either in themself or in the community as a whole. Awareness creation is thus one of the first steps in any program aimed at reducing Diabetic Retinopathy[17].

CONCLUSION

Diabetic retinopathy is a major health problem in patients with diabetes.

Risk factors such as age, duration of diabetes, hypertension, hyperglycaemia, hyperlipidaemia etc., should be taken into

consideration for regular check-ups and early detection of diabetic retinopathy.

Awareness and knowledge about diabetic retinopathy was poor among the patients in our study. Lack of knowledge regarding the need for screening for diabetic retinopathy was found to be a major barrier to compliance with regular screening. Good knowledge about diabetic retinopathy was associated with a positive attitude towards diabetes and good practice patterns with respect to retinopathy. Therefore, there is an urgent need to develop strategies to educate diabetic patients about this potentially blinding complication of diabetes.

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