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Awareness of Diabetic Retinopathy among General Practitioners in A Rural Area of North Karnataka

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Abstract

Introduction: Type 2 Diabetes Mellitus (DM) is a very common chronic condition which has affected almost 382 million people worldwide. Currently, about 62 million people in India are diagnosed with DM, and has the highest number of diabetics in the world.The prevalence of diabetes is predicted to double globally from 171 million in 2000 to 366 million in 2030 with a maximum increase in India.

This number is predicted to reach 79.4 million by the year 2030. Development of diabetes related complications are not uncommon and are insidious in onset. These complications are responsible for various co-morbidities which affect the quality of life. Diabetic retinopathy is the main cause of visual impairment and blindness among the people suffering from diabetics. The prevalence of diabetic retinopathy is estimated to be around 33.9% in patients suffering from DM. Visual impairment due to diabetic retinopathy is observed in more than 86% of Type 1 Diabetic patients and 33% of Type 2 Diabetic patients. Over the last 2 decades, diabetic retinopathy has emerged as a common cause of ocular morbidity and blindness in India, moving up from number 17 (1986-1989 WHO-NPCB Survey, Government of India) to number 6 (2001–2002 NPCB national survey) in the list of causes of blindness.

In this study we tried to assess the awareness about the various common aspects of Diabetes Mellitus, knowledge about the visual loss in Diabetic retinopathy and the different modalities of treatment available for Diabetic retinopathy among the general practitioners practicing modern medicine (MBBS doctors) and indigenous medicine (BAMS doctors) working in rural areas of North Karnataka .

Materials and Methods:

Study design: The study was a descriptive cross-sectional survey conducted between October 1, 2016 and December 14, 2017 in rural areas of north karnataka. Institutional approval was obtained from the hospital research and ethics committee before commencement of the study.

Study Population:The study respondents were general practitioners (GPs), practicing modern medicine (MBBS doctors) and indigenous medicine (BAMS and BHMS doctors) and working in rural areas of north karnataka.

Study Protocol: A total of 179 general practitioners (GPs) participated in the study out of which 49 were BAMS, 72 BHMS and58 MBBS doctors. Informed consent was taken and confidentiality of subjects was maintained. All the participants were given a pre-tested structured questionnaire. The questionnaire consisted of two sections A and B. Section A had questions pertaining to the general awareness of DM and section B regarding the knowledge and various treatment modalities available for diabetic retinopathy. Each correct answer was allotted one mark each. The extracted data was analyzed using Microsoft Excel.

Results: Over all 179 doctors of various discipline participated in the study, out of which 49 (27%) were practicing Ayurveda, 72 (41%) were practicing Homeopathy and 58 (32%) were practicing Allopathy. Majority i.e., 128 (72%) of the respondents were male and 51 (28%) were female. There were 58 (32%), 44 (25%), 39 (22%) and 38 (21%) respondents in the 31–40 years, 41–50 years, 51 years or older and 21 – 30 years age categories, respectively. Majority 167 (93.29%) were aware that Diabetes Mellitus effects the eye.

Conclusion: Diabetic retinopathy remains the main cause of visual impairment and blindness among the people suffering from diabetics. Hence, early detection and intervention helps to reduce the loss of vision due to diabetic retinopathy. Our study found that there is a lot of scope for improvement in knowledge and awareness related to diabetes and diabetic retinopathy among general practitioners. Workshops/CMEs/Guest lectures/Seminars will help them to update their knowledge and is the need of the hour to improve the ocular health outcomes especially in diabetic patients.

Keywords: Diabetes; Diabetic Retinopathy; Blindness.

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Introduction

Type 2 Diabetes Mellitus (DM) is a very common chronic condition whichhas affected almost 382 million people worldwide [1]. Currently, about 62 million people in Indiaare diagnosed with DM, and has the highest number of diabetics in the world [2]. The prevalence of diabetes is predicted to double globally from 171 million in 2000 to 366 million in 2030 with a maximum increase in India. This number is predicted to reach 79.4 million by the year 2030 [3].

Development of diabetes related complications are not uncommon and are insidious in onset. These complications are responsible for various co-morbiditieswhich affect the quality of life [4,5] Diabetic retinopathy is the main cause of visual impairment and blindness among the people suffering from diabetics. The prevalence of diabetic retinopathyis estimated to be around 33.9% in patients suffering from DM. Visual impairment due to diabetic retinopathy is observed in more than 86% of Type 1 Diabetic patients and 33% of Type 2 Diabetic patients [6] Over the last 2 decades, diabetic retinopathy has emerged as a common cause of ocular morbidity and blindness in India, moving up from number 17 (1986-1989 WHO-NPCB Survey, Government of India) to number 6 (2001–2002 NPCB national survey) in the list of causes of blindness [7].

Majority of the diabetic patients in India, visit the general practitioners for the treatment of their medical as well as visual problems. In villages, where the services of specialists are rare, the MBBS (Bachelor of Medicine and Bachelor of Surgery), the BAMS (Bachelor of Ayurvedic Medical Sciences) and the BHMS (Bachelor of Homeopathic Medical Sciences) doctors are often the first level of contact for health services. Hence, it is important for them not only to be aware of diabetes and its complications, but also to refer the patients at an appropriate time to trained ophthalmologist for ocular examination to prevent further complications.

In this study we tried to assess the awareness about the various common aspects of Diabetes Mellitus, knowledge about the visual loss in Diabetic retinopathy and the different modalities of treatment available for Diabetic retinopathy among the general practitioners practicing modern medicine (MBBS doctors) and indigenous medicine (BAMS doctors) working in rural areas of Ahmednagar district.

Materials and Methods

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Results

Over all 179 doctors of various discipline participated in the study, out of which 49 (27%) were practicing Ayurveda, 72 (41%) were practicing Homeopathy and 58 (32%) were practicing Allopathy. Majority i.e., 128 (72%) of the respondents were male and 51 (28%) were female. There were 58 (32%), 44 (25%), 39 (22%) and 38 (21%) respondents in the 31–40 years, 41–50 years, 51 yearsor older and 21–30 years age categories, respectively. Majority 167 (93.29%) were aware that Diabetes Mellitus effects the eye.

Table 1 shows that 68 (38%) of the general practitionerswere aware about all the three classical symptoms of DM i.e., polyuria – excessive urination (60.89%), polydypsia – excessive thirst (46.93%) and polyphagia – excessive intake of food (37.99). Only 15 (8.38%) respondents were aware that non healing wound isalso a symptom of DM. Regarding the investigations for DM, majority 144 (80.45%) responded that rely on urine test the most, followed by Random Blood Sugar Levels i.e., 134 (74.86%). GTT was rather unpopular among the doctors as only 33 (18.44%) were aware. The table also depicts the awareness of risk factors, which reveals that 110 (61.45%) respondents were aware of hereditary factors as a risk factor, followed by obesity 82 (45.81%), inadequate Physical work 48 (26.82%) and pancreatic defect 3 (1.68%). The awareness of organs affected due to DM were eye 167 (93.30%) followed by heart 128 (71.51%), kidney 116 (64.80%), nervous system 35 (19.55%) and foot 11 (6.15%).

Table 1: Awareness of various variables in Diabetes Mellitus

Awareness of symptoms	Aware (n)	Percentage
Excessive urination	109	60.89
Excessive thirst	84	46.93
Excessive hunger	68	37.99
Non healing wounds	15	8.38
Awareness of investigations	**Aware (n)**	**Percentage**
Urine	144	80.45
BSL-R	134	74.86
BSL-F	129	72.07
BSL-PP	120	67.04
GTT	33	18.44
Awareness of risk factors	**Aware (n)**	**Percentage**
Hereditary	110	61.45
Pancreatic defect	03	1.68
Obesity	82	45.81
Inadequate Physical work	48	26.82
Awareness of the organs affected	Aware (n)	Percentage
Eye	167	93.30
Heart	128	71.51
Kidney	116	64.80
Foot	11	6.15
Nervous system	35	19.55

A total of 153 (85.47%) general practitioners have heard about diabetic retinopathy, out of which 148 (82.68%) were aware that it affected the vision. 141 (78.77%) doctors responded that the visual loss is reversible in early stages & irreversible in late stages. Majority 152 (84.92%) opined that DR is treatable. Almost half of the respondents i.e., 89 (49.72%) commented that DM patients with eye complaints should be referred to ophthalmologist and 166 (92.74%) doctors suggested that every patient with DM should have regular eye checkup.

Table 2: Awareness of Diabetic Retinopathy (DR) among the doctors

Parameters	Yes (n)	Percentage
Heard of DR	153	85.47
DR causes loss of vision	148	82.68
Visual loss is reversible in early stages & irreversible in late stages	141	78.77
Diabetic Retinopathy is treatable	152	84.92
Every patient with DM should have regular eye checkup	166	92.74
DM patients with eye complaints should be referred to ophthalmologist	89	49.72
Aware of DR	96	53.63

Table 3 depicts the awareness of various treatment modalities available for DR. Laser intervention 91 (50.83%) was the most common response followed by medical intervention 67 (37.43%), surgery 63 (35.19%) and others 17 (9.49%).

Table 3: Treatment modalities available for DR

Treatment modalities	Response	
	N	Percentage
Medical	67	37.43
Surgical	63	35.19
Laser	91	50.83
Others	17	9.49

Discussion

The leading cause of visual impairment and blindness is DR. With the recent trend being increase in the number of diabetic patients, diabetic retinopathy is an issue of great concern. Accordingly, early detection, timely ocular treatment and good control of the risk factors are important for reducing blindness due to diabetic retinopathy.

The general practitioners constitute an important part of the diabetic care network [8]. In India, in

addition to allopathic medicine, up to 80% of the population use Ayurvedic and other traditional medicines, often exclusively [9]. Hence it becomes the duty of all general practioners irrespective of their branch to have a basic idea of DR.

This study assessed the general practitioners knowledge on awareness of DM and DR. It was observed that the awareness of the presenting symptoms of DM waslow (38%). The most common symptom that majority were aware was polyuria (60.89%). However only 15 (8.38%) believed that DM may also present as any non healing ulcer. This may be attributed to the non homogenous study population which consisted 68% of non allopathic doctors.

The investigations that are necessary to diagnose DM were known by almost 67% of the doctors. Majority 144 (80.45%) were aware that urine for sugar can be used to diagnose DM. Awareness regarding blood sugar level (BSL) was known to majority of them, 74.86% followed by random blood sugar level (BSL), 72% fasting blood sugar level (BSL) and 67% post prandial blood sugar level (BSL). It was observed that the gold standard investigation for diagnosing DM i.e., Oral Glucose Tolerance Test was known by only 33 (18.44%) doctors.

DM having a hereditary cause was known by 61% of the doctors. Only 1.68% of the doctors were aware that pancreatic defect has a role in DM. Majority (93.30%) were aware that DM in due course affects eye. The also study revealed the awareness about the organ affected due to DM which were heart (71.51%) kidney (64.80%)and nervous system (19.55%). However only 11 (6.15%) of the doctors were aware that foot is also affected. The gross variation in the results again may be attributed to the heterogeneous nature of the group which includes doctors practicing Ayurveda, Homeopathy and Allopathy.

Our study revealed that 96 (53.63) general practitioners had adequate knowledge about DR. A total of 5questions were asked in questionnaire to assess the knowledge of DR. Any respondent who had answered 4 or 5 questions correctly was considered to have adequate knowledge. A study conducted by Narendra P.D et al on level of awareness about DR among physicians in rural district of Kolar revealed that 55% doctors had adequate knowledge while 12.20% were unaware and 25% were partially aware [10]. Another study conducted in Punjab found that 53% BAMS and 75% MBBS doctors were adequately aware about epidemiology, risk factors and management of diabetic retinopathy while 47% BAMS and 25% MBBS were not adequately aware [11].

Nearly half of the respondents opined that laser treatment can help to restore the vision. About 37% of them reveled that medical management will help and 35% believed surgical management will be useful. However, 17 (9.49%) believed that there are other methods to treat DR apart from medicines, surgery and laser. A similar study conductedin Punjab found that 69.3% general practitioners knew about laser photocoagulation [11]. Another study conducted by Narendra P.D. et al. showed results similar to the study [10].

More than half (55%) of the general practitioners reveled that they do not prescribe any medicine if a Diabetic patient complains of eye problems without consulting Ophthalmologist. Majority (85%) knew the importance of maintaining optimum blood sugar level and they counsel the importance of it to the patients. Our study also revealed that about 93% of the general practitioners would counsel their patients for regular eye check up at ophthalmologist.Majority (89%) of them concluded that they would like to attend Workshops/CMEs/ Guest lectures/Seminars regularly to upgrade their knowledge on diabetic retinopathy.

Conclusion

Diabetic retinopathy remains the main cause of visual impairment and blindness among the people suffering from diabetics. Hence, early detection and intervention helps to reduce the loss of vision due to diabetic retinopathy. Our study found that there is a lot of scope for improvement in knowledge and awareness related to diabetes and diabetic retinopathy among general practitioners. Workshops / CMEs / Guest lectures/ Seminars will help them to update their knowledge and is the need of the hour to improve the ocular health outcomes especially in diabetic patients.

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