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RESEARCH ARTICLE

AWARENESS OF DIABETIC RETINOPATHY AMONG ADULT POPULATION IN PEERPANCHAL REGION OF JAMMU AND KASHMIR, INDIA

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Abstract

Purpose: To study the awareness of diabetes and its multisystem involvement like diabetic retinopathy among population attending medicine opd in government medical college and associated hospital, Rajouri Jammu and Kashmir India

Methods: A cross-sectional study over a 2-year period was conducted among 6000 adults who underwent OPD medical treatment at government medical college and associated hospital in Rajouri, Jammu and Kashmir, India. All patients were randomly tested for blood sugar and a questionnaire designed for them. Data obtained were statistically analyzed using SPSS version software 15.0. ($P < 0.05$) was considered a significant value.

Results: In our study, we enrolled 6000 participants between the ages of 56.4 \pm 10 years and male: female ratio of 3: 5. Based on the questionnaire, we found that 71.05% of the registered participants were unaware of the complications of diabetes. 85.03% were unaware that diabetes can affect the eyes. Although more than 92.18% did not know much about diabetic retinopathy or its treatment options. 93.3% of adults in general said they would have an eye test when their vision was severely reduced. Awareness about diabetes retinopathy was significantly reduced in women. ($p < 0.05$)

Conclusions: As per our study, more than half of the individuals lacked any knowledge about multi-system involvement in diabetes. They were particularly unaware about the importance of eye screening in diabetes.

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Introduction:-

Diabetes is a disorder that is affecting more and more people. It is growing at an alarming rate of an epidemic that is expected to hit 642 million people worldwide by 2040 as reported by the International Diabetes Federation (1) According to the latest World Health Organization data, an estimated 422 million adults living with type 2 diabetes worldwide (2,3)

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The prevalence of diabetes is far greater in developed countries than in developing countries. India's potential of epidemic is of over 62 million people currently diagnosed with diabetes (4,5) India is currently facing an uncertain future regarding the potential burden of diabetes in the country. Diabetes retinopathy is a leading cause of vision loss in working-age adults. (6,7)

A recent study reported that the burden of visual impairment due to diabetes retinopathy is estimated at 3.2 million worldwide. It is reported that about 2% of people become blind after 15 years of diabetes and 10% develop severe visual impairment. (8)

Major risk factors for the development of diabetic retinopathy are duration of diabetes and the severity of hyperglycemia. (9,10)

Diabetes Mellitus is widely known as a 21st-century public health problem. Many educational programs are designed to prevent and control the disease prematurely but fail to achieve the desired results of increasing awareness of diabetes and its complications in developing countries. (11,12) Indeed, a few studies have consistently shown that diabetes awareness among the majority of people appears to be very low. (13)

Given the scarcity of information on the problems associated with diabetes, especially in the low-income economy, it was important for us to be aware of diabetes in adults who visit the rural clinic in our hospital.

Material And Methods:-

A cross-sectional study was conducted in government medical college Rajouri Jammu and Kashmir over a period of 3 years. Among 6889 patients, 530 refused to participate in the study and 359 subjects did not attend follow-up on test results. Therefore 6000 adults were included as study participants

All patients were randomly tested for blood sugar after informed consent. Based on blood sugar levels, they were further divided into three groups.

Group 1 were subjects with normal blood sugar levels.

Group 2 were known cases of diabetes with high or normal blood sugar levels. And Group 3 subjects had recently been diagnosed with diabetes.

After receiving written informed consent from the study participants, they were interviewed with questioner designed

Result:-

The study included a total of 6000 participants of which 2256 were male and 3744 were female. The mean age of the enrolled patients was 56.4 +/- 10 years (Table 1). Fifty-two percent of all patients were in the 5th class of economic welfare according to the modified B.J Prasad category (Table 2).

All registered participants were randomly tested for blood sugar. Based on the test results, it was found that 2209 patients were non-diabetic (GROUP 1), 1845 patients who were diabetic (GROUP 2) and 1937 had recently been diagnosed with diabetes (GROUP3). All groups were included in a personalized questionnaire (Table 4)

Table 1:- Age-wise distribution of subjects.

AGE	Number	%age
<40	480	8
41-50	1482	24.7
51-60	1998	33.3
>60	2040	34

Table 2:- Socio economic distribution of participants.

Socioeconomic status *	Number	% Age
Class 1	0	0
Class 2	120	2

Class 3	360	6
Class 4	2400	40
Class 5	3120	52

Table 3:- Gender wise distribution according to awareness of diabetic eye disease.

	Male		Female		P-value
	No	%	No	%	
Aware	617	27.34	531	14.18	$\chi^2=158$; $p<0.001$
Unaware	1639	72.65	3213	85.81	
Total	2256		3744		

Comparative analysis of the level of awareness about diabetic eye disease among males and females was done . The percentage of awareness was more in males in comparison to females and it was statistically significant. Even though the females out numbered the males but the awareness levels were very low accounting to 14.18% only.

Table 4:- Group wise distribution of participants according to awareness about diabetic eye disease

Groups n=6000		Group 1 non diabetic		Group 2 diabetic		Group 3 newly diagnosed		P value
		No.	%	No.	%	No	%	
Aware		157	7.1%	769	37.4%	262	13.5%	$\chi^2=772$; $p<0.001$
Non aware		2052	92.8%	1085	41.47%	1675	86.47%	
Total		2209		1854		1937		

Comparative analysis of awareness was also done in between the three groups. We found that among the three groups, 92.8% of non diabetics were particularly unaware about diabetic eye disease followed by 86.4% of the newly diagnosed cases. 41.47% of the diabetics were also unaware about complications of diabetes in eyes. The values were statistically significant

Table 5:- Questionnaire.

S.no.	QUESTIONS	YES		NO	
		N	%	N	%
Q1	Did you know that diabetes has multi-system involvement ?	1737	30	4263	71.05
Q2	Can uncontrolled blood sugar levels have harmful affects ?	960	16	5040	84
Q3	Does diabetes effect your vision ?	898	14.96	4939	85.03
Q4	Should a diabetic get an eye check up when blood sugar is controlled ?	840	14	5160	86
Q5	Do you know that diabetes affects the retina (diabetic retinopathy) ?	469	7.81	5531	92.18
Q6	Do you know its treatment modalities ?	300	5	5700	95
Q7	When should a diabetic get an eye check up ?				
	When vision is affected	5598	93.3		
	Yearly	330	5.5		
	6 monthly	72	1.2		
Q8	Are you aware about eye screening programs ?	360	6	5640	94

Based on the questionnaire, it was found that more than half of the subjects were not aware about diabetic eye disease . We observed that 71.05% of the enrolled participants were unaware of the complications of diabetes in the body. 85.03% did not know that diabetes could affect the eyes per say. While more than 92.18% were particularly unaware about diabetic retinopathy or its treatment modalities. 93.3% of the general adult population said that they would get an eye check-up when their vision is significantly reduced. They felt that they are unaware about diabetes and its complications which leads to the delay in seeking treatment

Discussion:-

Diabetes mellitus (DM) is reaching epidemic proportions in many countries, including India. People with diabetes are more likely to develop eye diseases, such as diabetic retinopathy, glaucoma and cataracts. Currently, there are 171 million diabetic patients worldwide. By 2030, that number is expected to rise to 366 million, with 79 million of them in India. (4) (5)

Increasing awareness of diabetic retinopathy in people with type 2 diabetes is considered an important factor in early diagnosis and control of diabetic retinopathy. We conducted a survey using an 8-point questionnaire among 6,000 diabetic patients who went to our inpatient department over a period of 3 years. We tested awareness of diabetes eye problems and asked patients how to raise awareness. In our study, we noted that although patients were aware of diabetes, a very high percentage of studies were unaware of diabetes problems. A shockingly high percentage of participants lacked knowledge about diabetic retinopathy, eye tests for diabetes and other visually impaired visual cues that threaten diabetes.

A study conducted by Rani PK et al in Tamil Nadu (15) and Bagalkot reported similar data that only 37.1% were knowledgeable and 45.7% were aware of diabetic eye disease. (16) But our results were surprisingly low compared to studies in Vellore (71.9%). (17) Nepal (63.3%) (18) and Jordan (98.3%) (19). In contrast, studies conducted in rural Karnataka by Manu As et al reported that more than half of patients, 88 (58.7%), were diagnosed with diabetes that could affect the eye. (20)

We also reported that most patients will have an eye examination only if vision is affected (93.3%). Studies on eye involvement in sugar believed that people would not have eye problems if their blood sugar levels were controlled (14%). In addition, in terms of gender distribution, men outnumbered women in terms of awareness of diabetes and its eye-related problems.

The most common obstacle to eye examinations is the lack of knowledge (94%) on the importance of eye examinations, followed by a lack of access to eye care and time constraints. As no similar studies have been conducted previously in our case, this provides insight into the behavioral needs of diabetics as to one of the major causes of blindness in this nation.

Lack of knowledge about DR is considered a major health problem that can interfere with proper management and prevent potential visual impairment. There seems to be a global trend of lack of information about DM in people. This is likely to have a major impact on India, which is estimated to be home to a quarter of the world's blind. Awareness of diabetes eye problems can play an important role in encouraging people to seek timely eye care.

This emphasizes the need to implement health education strategies for the disease and the problem that should be applied to the lower, higher, and higher levels of health care. Emphasis on awareness of diabetes management and complications should be placed not only on patients with diabetes but also among family members of patients as they are able to motivate patients about it and help seek early care.

Our study highlights the most common barrier to lack of knowledge about the importance of eye examinations, so awareness should be disseminated to patients about regular eye examinations as this can be a major problem, and medical treatment should encourage patients to get tested. due to retinopathy.

Diabetes education tool can be designed to empower patients with diabetes; focusing on self-regulation, as well as potential problems with uncontrolled blood sugar. Consultation sessions with family members of patients presenting or referred to a diabetic retinopathy clinic will help to educate themselves about diabetes.

Conclusion:-

As per our study results, an alarming number of participants lacked knowledge about diabetic retinopathy. There is a significant lack in proper information providing sources, especially in rural areas. This emphasizes the need for increasing awareness and information providing modalities about diabetes, its complications and treatment options. We need more awareness camps, eye screening centers for early referral, prevention and diagnosis of vision-threatening complications of diabetes.

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Conflict of interest :

Authors have no conflict of interest.

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