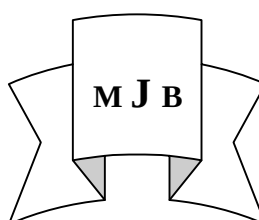


Diabetes Mellitus, Is Our Patients` Knowledge of Its Complications Adequate to Save Their Useful Vision?

Alya`a A. Kareem
FICMS, CABOphth
Kufa University, College of Medicine



Abstract

In order to have an ophthalmologic survey of our diabetic patients and to have an idea about their knowledge of ophthalmic diabetic complications, this study was conducted on 76 consecutive diabetic patients attending a private specialized ophthalmic clinic for variable reasons. 64.5% of the studied population had impaired visual acuity. Cataract was the leading cause of abnormal visual acuity followed by advanced proliferative diabetic retinopathy. 55.26% of our diabetic patients did not know about their disease effect on the eye and never undertake an action previously. 41% of the diabetics who know well about the disease effect on the eye enjoyed visual acuities of 6/6 and only 30.9% of the ignorant patients did so. Although the difference was statistically not significant, the importance of educating the diabetics about their disease progress and complications is to be emphasized on and further professional efforts are to be shown.

هل تكفي المعرفة بالاختلالات العينيه لمرض السكري لحماية بصر المصابين بهذا الداء؟

الخلاصة

أجريت هذه الدراسة على ٧٤ مريض بداء السكري في محافظة النجف الأشرف وكان ٦٤,٥% منهم يعاني من مشاكل عينيه بسبب مرضه جاء في مقدمتها الساد ثم اعتلال الشبكية السكري. كان ٥٥,٢٦% من مرضانا يجهل حقيقة تأثير مرضه على العين ومن هؤلاء ٣٠,٩% فقط تمتعوا بدرجة رؤيا ٦/٦ مقابل ٤١% من الذين يدركون هذه الحقيقة. من الحقائق المتجمعة لدينا يتبين ان العلم بمشكلة داء السكر من وجهة نظر طبيب العيون يحتاج الى توسيع مدياته للحفاظ على بصر شريحه واسعه من المرضى.

Key words:

Diabetes mellitus, diabetes and the eye, ophthalmologic complications in diabetes.

Introduction

Diabetes mellitus is a common metabolic disorder characterized by sustained hyperglycemia of varying severity secondary to lack, diminished efficacy, or both of endogenous insulin (1,2).

Despite some degree of overlap, diabetes can be divided into two groups:

Type I (insulin dependent, juvenile onset) with abrupt onset of symptoms, tendency of

ketoacidosis and lack of C-peptide production. Type II(non insulin dependent, maturity onset)with lack of ketoacidosis,C-peptide The disease affects about 2%of the population in developed countries and about 3%of the world population(4).It shows itself on serum biochemistry in addition to systemic complications, i.e. renal, vascular, neurological, coetaneous as well as ophthalmologic complications that include:

I. Common features: retinopathy and iridopathy.

II.Uncommon features: changes in refraction accelerated senile cataract, open angle glaucoma, rubeosis irides, ocular motor nerve palsies and asteroid hyalosis.

III.Rare features: papillopathy, pupillary light near dissociation, acute onset cataract and orbital mucormycosis(1,2,5).

Diabetes mellitus is the commonest cause of acquired legal blindness in adults of working age in the western world(6,7,8,9).Diabetic retinopathy is the leading cause of legal blindness between the age of 20-65 years(1). Risk factors associated with visual loss from diabetic retinopathy include advancing age, longer disease duration, lack of adequate metabolic control, type of diabetes, male gender specially in type I disease , nephropathy, hypertension, hyperlipidemia, pregnancy, smoking and obesity(1,10,11).Acquired blindness from diabetic retinopathy is both preventable and treatable, since asymptomatic sight threatening retinopathy can be detected and may be amenable to treatment before vision is irreversibly damaged as a result of retinal new blood vessels or maculopathy(4).

The aim of this study was to throw light on the ophthalmic problems related to diabetes mellitus in our patients and to show if their knowledge about the blinding effect of their disease is enough to save their vision.

Patients and Methods

production and tendency for obesity with improvement following weight reduction(3).

The current study was conducted on 76 consecutive diabetic patients attending a specialist ophthalmic clinic for variable reasons in Najaf city during eight months period between May -December 2006.A detailed history was taken regarding the disease onset, duration, type, medication, control and associated medical problems or risk factors. Special inquiry was made if each patient knows about the effect of diabetes mellitus on the eye prior to his visit and if so, is he a regular visitor to the ophthalmologist. Both eyes of all patients were subjected to full ophthalmologic assessment including best corrected visual acuities,anterior segment examination by slit lamp,dilated fundus examination by direct and indirect ophthalmoscopes and applanation tonometry. Data were presented in terms of frequencies and percents and the Chi square test was used for statistical analysis with a p value <0.05 indicating significant differences.

Results

During the period of the study and out of 2050 patients visiting the same specialist ophthalmic clinic 76 patients (3.5%) were known to be diabetic .29(38%) were men and 47(62%) were women. Only 10 patients(13%) were insulin dependent diabetics and the remainder 64(87%) were non insulin dependent. Table 1

Mean age of the studied patients was 50.3 ± 2.7 years with a range of 15-70 years. Disease duration ranges from 1-20 years with a mean value of 9.54 ± 1.2 years.

Of the studied patients 44(57.8%) were considered to have good control of their blood sugar as the two hours postprandial test was $\leq 180\text{mg/dl}$ and the remaining 32(42.2%) patients were considered having bad control because their test showed results above that value.

Ocular examination findings were shown in table2. An eye might have more than one manifestation.

Table 3 shows the relationship between the knowledge about the effect of diabetes on the eye and the level of visual acuities of the studied patients. It also shows the relationship between disease control and the level of visual acuities.

Discussion

Diabetes mellitus is not an uncommon medical problem in our population. The disease has an incidence of 3% in the developing countries and a rising incidence up to 6% of the total population in the United States of America(12). In the current study, 3.5% of the patients visiting an ophthalmologic clinic were known to be diabetics. Among these 35.5% enjoyed perfect vision with visual acuity of 6/6 and 9.8 % were legally blind with visual acuities less than 6/60, the remaining 54.6% have impaired visual acuities i.e. visual acuities between 6/9-6/60.

Considering the causes of abnormal vision in our participants, cataract was the leading cause (37.4%) followed by diabetic retinopathy in various stages (28.8%). Other ocular findings are listed in table2. Maha Al Till found that the prevalence of blindness among Jordanian diabetics to be 7.4% while 10.1% were visually impaired. The leading cause was retinopathy while cataract comes secondly, possible explanation is that one of the investigations used in Maha's study was the fluorescein angiography that can detect subclinical early retinopathy(13) Klein found 3.6% of the diabetics to be legally blind while 1.4% had visual impairment (best corrected VA 20/80-20/200), his study was conducted in the United Kingdom(14).

34 patients (44.7%) of our sample had adequate knowledge about diabetes and its effect on the eye, the remaining 42 patients(55.26%) had no idea and never consulted an ophthalmologist previously. Of

the 42 ignorant patients in our study 13 (30.9%) had perfect vision and normal eyes, 22 (52.4%) had impaired vision and the remaining 7(16.7%) were legally blind. On the other hand 14 patients of those who knew about their disease ocular complications (41.1%) enjoyed perfect vision and 20 (58.9%) got impaired visual acuities –vision 6/9-6/60-for a reason or another. All the legally blind patients did not know this important fact. These data although non significant statistically -p value >0.05- showed that quite big percent of our diabetic individuals did not know about how diabetes can affect their vision, and actually all the legally blind diabetics among our subjects were ignorant about this fact until they had lost their useful vision. Sprakfa had 32% of his diabetic subjects to be ignorant about the disease effect on the eye and about 61% of those ignorant subjects presented with an ocular problem due to diabetes.¹⁵ Based on wide scale British studies, it was found that about 1500-2000 diabetics per million of the population have high risk retinopathy and 50% of whom are unaware of it(4). These findings, and ours, indicate a high prevalence of ocular morbidity among diabetic patients who are not under routine ophthalmologic surveillance and suggest that improvement in patients and professional compliance with recommended guidelines for eye care are warranted.

44 patients of our population(57.8%) were classified as those having good control of their disease where the two hours postprandial blood sugar gave results of 180mg/dl or less. The remaining 32 patients (42.2%) were considered to have bad control as their blood sugar values exceeded this limit. About 85% of those with perfect vision were good controllers over their disease and 57.2% of the visually impaired subjects were bad controllers. The difference was statistically significant with a p value <0.001 suggesting the value of disease control on

protection of the eyes in diabetic patients. All the patients with navigational vision were bad controllers and also they did not know about the disease effects on their eye before they lost useful vision. From the statistical point of view the importance of disease control was more significant than the knowledge about its effect. The former data was statistically significant and the latter was not. Most of the studies on the effect of diabetes mellitus on the eye emphasized on the fact that intensive metabolic control although does not prevent diabetic retinopathy but it delays the onset, slows the progression, decreases the rate of conversion to the serious proliferative stage and decreases the need for laser photocoagulation(1,2,4,13,14,16,17). A well known fact by all the physicians, general practitioners and even the medical students is that diabetes mellitus is a blinding disease but how much time do these spend with their patients to explain and elaborate on this fact. Our data reveals that all those with visual acuities less than 6/60 did not know that their disease is blinding prior to losing most of the useful vision they had, in addition a higher percent of those enjoying perfect vision knew about this important fact before presenting to an ophthalmologist. The problem should be widely thought of and the benefit of screening and regular check up is to be stressed on by all the medical personnel. Professionals at the diabetic clinics are to reevaluate their attitude towards their diabetics and strong wide steps are to be taken towards expanding the public knowledge. Ophthalmologists are invited to express wider role at such clinics because saving the sight of the victims of a relatively not uncommon medical problem is warranted.

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Table 1 Type of diabetes mellitus according to patients` sex.

	Male	Female	Total
IDDM	4	6	10
NIDDM	25	41	66
Total	29	47	76

Table 2 Ocular findings in the studied subjects

Ocular findings		No.of eyes	Percent
Normal		47	30.9%
Lens abnormalities	Early cataract	46	30.2%
	Dense cataract	11	7.2%
Glaucoma		7	4.6%
Fundus	Normal	97	63.8%
	Not seen	11	7.2%
	Diabetic retinopathy	44	28.8%
	Background	18	11.8%
	CSME (macular edema)	3	1.9%
	Proliferative:		
	PDR±vit.hemorrhage	9	5.9%
	PDR±traction±roboesis	14	9.2%
Optic neuropathy		1	0.6%
Oculomotor nerve palsy		1	0.6%
Abducent nerve palsy		1	0.6%
Totally lost eye		3	1.8%

Table3 Visual acuities of the studied patients in relation to their knowledge about diabetes effect on the eye and disease control

VA	No.of eyes (%)	Patient`s knowledge		Disease control	
		knows	Doesn`t	Good	Bad
6/6	54 35.5%	14	13	23	4
6/9-6/60	83 54.6%	20	22	21	21
<6/60	15 9.8%	0	7	0	7
Total	152	34	42	44	32
		76		76	