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To Determine Prevalence of Ocular Lesions in Diabetics

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ABSTRACT

Background: DM and its complications are rapidly becoming the world's most significant cause of morbidity and mortality. The present study was conducted to determine prevalence of ocular lesions in diabetics. **Methods:** The present study was conducted on 102 diabetic patients. Hb1Ac was obtained from all the patients. Visual acuity of each patient was assessed with a Snellen chart, and pinhole visual acuity was used to screen for refractive errors. Ocular pathologies, if present, were recorded. **Results:** Out of 102 subjects, males were 60 and females were 42. Among ocular lesions among diabetics, most common was diabetic retinopathy seen in 34 followed by cataract in 14, glaucoma in 12, ischemic optic neuropathy in 10, diabetic macular edema in 6 and corneal nerve alterations in 7 patients. The difference was significant (P< 0.05). **Conclusion:** Authors found that common ocular lesions I diabetics was diabetic retinopathy, cataract, glaucoma, ischemic optic neuropathy, diabetic macular edema and corneal nerve alterations.

Keywords: Cataract, Diabetic, glaucoma.

INTRODUCTION

Complications of diabetes mellitus (DM) are progressive and almost resulting by chronic exposure to high blood levels of glucose caused by impairments in insulin metabolism and biological macromolecules such as carbohydrates, lipids, proteins and nucleic acids. DM and its complications are rapidly becoming the world's most significant cause of morbidity and mortality.[1] The DM pandemic has expanded speedily in the developed and developing countries. It is expected that DM will reach epidemic proportions within the near future.[2]
The public health burden of DM is largely attributed to the fact that hyperglycemia increases the likelihood of both macrovascular and microvascular complications; indeed, it is these degenerative complications that result in the increase in morbidity and mortality associated with all forms of DM. When not properly managed, long-term complications of this group of diseases can be severe and include heart disease, stroke, and kidney failure. Importantly, diabetes also profoundly impacts the ocular tissue, with damage to this organ occurring even at the early stages of the disease.[3]
While the most prominent manifestation of impaired macrovascular function in DM is accelerated atherosclerosis, microvascular dysfunction leads to nephropathy and retinopathy. Among the microvascular complications of diabetes, diabetic retinopathy (DR) is the most common and is the leading cause of blindness among working-age adults. DM can lead to several ocular complications such as diabetic retinopathy, diabetic papillopathy, glaucoma, cataract, and ocular surface diseases.[4]
The present study was conducted to determine prevalence of ocular lesions in diabetics.

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MATERIALS AND METHODS

The present study was conducted in the department of Ophthalmology. It comprised of 102 diabetic patients who were screened during the study period. The study protocol was approved from institutional ethical committee. All subjects were informed regarding the study and written consent was obtained.
Data such as name, age, gender etc. was recorded. Hb1Ac was obtained from all the patients. Visual acuity of each patient was assessed with a Snellen chart, and pinhole visual acuity was used to screen for refractive errors. Ocular pathologies, if present, were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table 1: Distribution of patients

Total- 102		
Gender	**Males**	**Females**
Number	60	42

[Table 1 & Figure 1] shows that out of 102 subjects, males were 60 and females were 42.

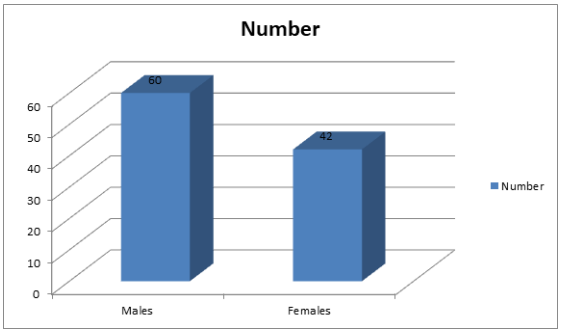

Figure 1: Distribution of patients

Table 2: Prevalence of ocular lesions in patients

Ocular lesions	Number	P value
Diabetic retinopathy	34	0.01
Cataract	14	
Glaucoma	12	
Ischemic optic neuropathy	10	
Diabetic macular edema	6	
Corneal nerve alterations	7	

[Table 2 & Figure 2] shows that among ocular lesions among diabetics, most common was diabetic retinopathy seen in 34 followed by cataract in 14, glaucoma in 12, ischemic optic neuropathy in 10, diabetic macular edema in 6 and corneal nerve alterations in 7 patients. The difference was significant (P< 0.05).

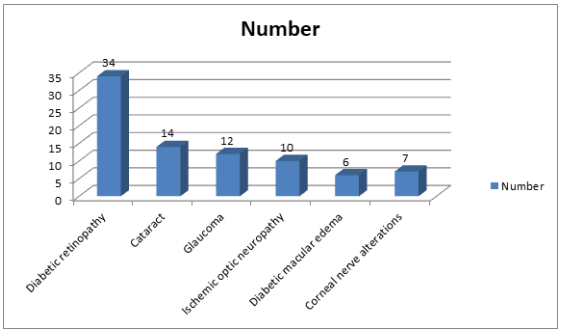

Figure 2: Prevalence of ocular lesions in patients

DISCUSSION

Diabetic retinopathy (DR), a microangiopathy affecting all of the small retinal vessels, such as arterioles, capillaries and venules, is characterized by increased vascular permeability, ocular haemorrhages, lipid exudate, by vascular closure mediated by the development of new vessels on the retina and the posterior vitreous surface.[5] DR, the most common microvascular complication of DM, is predicted to be the principal reason of new blindness among working population. The World Health Organization has classified glaucoma as priority eye disease. When aqueous humor does not properly drain through the trabecular meshwork and Schlemm's canal, it can lead to excess pressure inside the eye. The increase in pressure can damage nerves and the blood vessels, causing changes in vision, leading to glaucoma. Diabetes-related microvascular complications include, but are not limited to, nephropathy, end-stage renal failure, peripheral neuropathy, and blindness. The prevalence of these complications is highly dependent upon disease duration and age.[6] The present study was conducted to determine prevalence of ocular infection in diabetics.

In present study, out of 102 subjects, males were 60 and females were 42. Among ocular lesions among diabetics, most common was diabetic retinopathy seen in 34 followed by cataract in 14, glaucoma in 12, ischemic optic neuropathy in 10, diabetic macular edema in 6 and corneal nerve alterations in 7 patients.

Ahanger et al,[7] in their study a total of 200 diabetic patients were screened. The overall prevalence of ocular lesions among diabetic patients was 14 percent. Among these ocular lesions, the most common was glaucoma, diabetic retinopathy, cataract and diabetic papillopathy. Webb EM et al,[8] determined the prevalence of diabetic retinopathy, maculopathy and visual loss in primary care patients and to identify associated risk factors. They conducted a cluster randomized trial at primary care clinics in the Tshwane district in South Africa. Grades of retinopathy and maculopathy (with fundus camera) and visual acuity (Snellen chart) were assessed and, using mobile screening and teleophthalmology, clinical and biochemical testing was conducted to obtain information about glycaemic control and microvascular complications. The prevalence rates for any retinopathy, preproliferative retinopathy and proliferative retinopathy were 24.9, 19.5 and 5.5%, respectively. The prevalence rates of diabetic maculopathy, observable maculopathy and referable maculopathy were 20.8, 11.8 and 9.0%, respectively.

The macula is located in the center of the retina and contains the highest concentration of cones. This gives the ability to see color and details. Because of the central location of the macula, it also means the macula is responsible for central vision.[9] When the fragile retinal vessels burst, the fluid accumulates causing a thickening of the retina. This results in distorted or blurry vision. It has been observed that the incidence of DME is higher among type 2 compared to type 1 diabetics. Cataract is one of the main causes of vision impairment in diabetics. Although cataract surgery is relatively safe and has

high rates of success among healthy individuals, that is not the case with diabetics. Klein and coauthors reported a large proportion (59–98%) of people with T2DM aged 30 to 75 will develop cataract.[10] Other studies have reported greater foveal thickness and higher incidence of macular edema following cataract surgery in diabetic compared to nondiabetic patients. Posterior capsular opacification (PCO) is a common finding following cataract surgery. When the lens is removed during cataract surgery, the capsule that the lens sits in remains and in some cases it can obstruct vision by opacification.

CONCLUSION

Authors found that common ocular lesions I diabetics was diabetic retinopathy, cataract, glaucoma, ischemic optic neuropathy, diabetic macular edema and corneal nerve alterations.

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