ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 08 | August - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PREVALENCE OF PRIMARY OPEN ANGLE GLAUCOMA IN DIABETICS OF JAMMU REGION ATTENDING PRIVATE CLINIC.

Opthalmology

Dr. Kanavdeep Kapoor* Post Graduate (Batch 2020), Ophthalmology, ASCOMS, Jammu *Corresponding Author
Dr.Anisha Kapoor Undergraduate, MBBS, ASCOMS, Jammu
Dr.Deepak Kapoor MS, Ophthalmology, Jammu

ABSTRACT

The glaucoma is one of the major cause (14%) of irreversible blindness globally. Glaucoma is the term used to describe a group of conditions that have in common a chronic progressive optic neuropathy that results in characteristics morphological changes at the Optic nerve head & the retinal nerve fibre layer. Progressive retinal ganglion cell death and visual field loss are assosciated with these changes Intraocular pressure is a modifiable risk factor. It was reported that in 2020 about 52.68 million people was affected with POAG and it is estimated that by 2040 about 79.76 million people will affect from POAG. The present prospective cross-sectional studies was conducted in Kapoor Eye Clinic Jammu, during January 2021 to January 2022 and total 100 diabetic patients attending the Kapoor Eye Clinic Jammu, were involved. It was observed that the mean age of the study participants was 59.25±8.58 years and majority (61%) patients were females. Further, it was reported that most of the patients were housewives (38%), majority (63%) of the patients resided in rural area and mostly (47%) were from middle class family. The overall prevalence of primary open angle glaucoma was 59% among diabetic patients. The present study concluded the that primary open angle glaucoma is high among diabetic patients, as the diabetes is a risk factor in development of glaucoma which results in vision loss.

KEYWORDS

Glaucoma, POAG, Visual loss, Diabetes and Blindness.

INTRODUCTION

The glaucoma is one of the major cause (14%) of irreversible blindness globally Glaucoma is the term used to describe a group of conditions that have in common a chronic progressive optic neuropathy that results in characteristic morphological changes at the Optic nerve head & the retinal nerve fibre layer. Progressive retinal ganglion cell death and visual field loss are assosciated with these changes Intraocular pressure is a modifiable risk factor. The primary open angle glaucoma (POAG) is the commonest type of glaucoma. POAG is a chronic progressive optic neuropathy of adult onset. It is characterized by

1) Retinal nerve fibre layer thinning.
2) Glaucomatous optic nerve damage
3) Visual field loss
4) Open anterior chamber angle.
5) Absence of signs of secondary glaucoma or non glaucomatous cause for optic neuropathy.
6) IOP is a key modifiable risk factor.

RISK FACTORS : Following are some of the risk factors associated with development Of POAG

1) IOP the higher IOP greater the likilehood.
2) Age More in older individuals
3) Race More in Blacks than whites.
4) Family History OF POAG Ist Degree Relatives are at increased risk.
5) Myopia Increased Incidence
6) Vascular diseases.
7) Contraceptive pills.
8) Diabetes Mellitus Increased Incidence.

It was observed that around 70 million diabetic patients are suffering from primary open angle glaucoma.[1]

The diabetes is one of the risk factors of primary open angle glaucoma. In 1971, Becker stated that "Diabetes Mellitus is commonly seen in patients with POAG than in non-glaucomatous populations".[2]

It was reported that in 2020 about 52.68 million people was affected with POAG and it has been estimated that by 2040 about 79.76 million people will affect from POAG.[3]

In POAG there are pathognomonic optic nerve changes / damage which results into progressive visual field loss.[4]

The diabetes mellitus is the condition in which the :

1) Random plasma glucose is >200mg/dl + symptoms of diabetes.
2) Fasting plasma glucose >126mg/dl.
3) Two hour plasma glucose is > 200mg/dl during an oral glucose tolerance test. It is one of the metabolic abnormality which is prevalent globally and it also increases the risk of developing open angle glaucoma as it affects the small blood vessels supplying to optic nerve and result in impaired supply of blood supply.[5]

Thus, the present study was undertaken to determine the prevalence of primary open angle glaucoma in diabetics of Jammu region attending private clinic.

MATERIAL AND METHODS

The present prospective cross-sectional study was conducted in Kapoor Eye Clinic Jammu, during January 2021 to January 2022.

A total of 100 diabetic patients attending the Kapoor Eye Clinic Jammu, were involved after obtaining the informed consent from all the study participants.

Inclusion Criteria

- The diabetic patients already on anti glaucoma drugs presenting in clinic with complains of eye strain, blurring of vision, Headache.
- Asymptomatic Diabetic Patients already on anti glaucoma drugs.
- Age group 18-60 years.

Exclusion Criteria

- Study participants who were not willing to participate.
- Patient with other eye disorders and co morbidities.

A detailed history was collected, ophthalmic examination & Investigations were done which included

1) Visual aquity.
2) Torch light examination
3) Slit lamp examination.
4) Gonioscopy.
5) Applanation Tonometry.
6) Fundoscopy.
7) OCT-RNFL.
8) Optical Pachymetry.
9) Perimetry.
10) Refraction

HbA1C was done in all the patients.

Data was organized and tabulated in a excel sheet, further, it was analyzed and interpreted in both descriptive and inferential statistics i.e. frequency and percentage distribution, by using statistical package for social science software (SPSS), version 22. Categorical variables were expressed as number and percentage.

OBSERVATIONS AND RESULTS

- In the present study, 100 diabetic patients presented with complain of eye strain, blurring of vision, Headache were included

Asymptomatic Diabetic Patients were also included. It was observed

that the mean age of the study participants was 59.25±8.58 years and majority (61%) patients were females.

Further, it was reported that most of the patients were housewives (38%), majority (63%) of the patients resides in rural area and mostly (47%) were from middle class family.

Table 1 Duration of diabetes

Duration	Number	Percentage
1-5 years	34	34
6-10 years	61	61
>10 years	5	5

Table 1, showed that the majority (61%) of the patients were suffering from diabetes since 6-10 years, followed by 1-5 years (34%) and > 10 years (5%).

Figure 1. Duration of diabetes

Table 2 HbA1c level

HbA1c%	Number	Percentage
4	5	5
5	12	12
6	5	5
7	13	13
8	23	23
9	11	11
10	16	16
11	8	8
12	7	7
13	0	0
14	0	0

Table 2 depicted the HbA1c %, it was observed that majority of the patients had 8HbA1c score (23% patients).

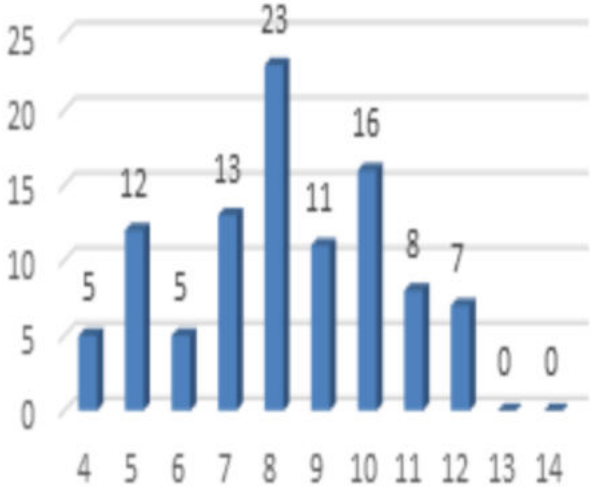

Figure 2. HbA1c level

Table 3 Visual acuity

Visual acuity	Number	Percentage
6/6-6/12	19	19
6/18-6/24	30	30
6/36-6/60	24	24
PL to <6/60	22	22
PL Absent	5	5

Table 3 depicted that the majority (30%) of the patients had visual acuity between 6/36-6/60.

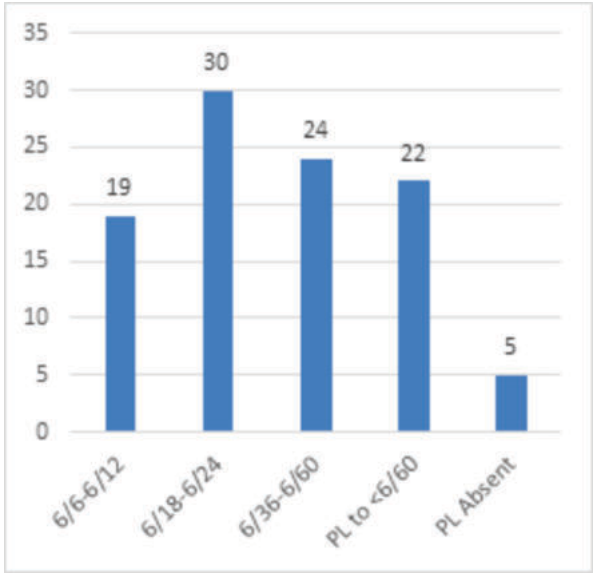

Figure 3. Visual acuity

Table 4. Intraocular pressure

Intraocular pressure	Number	Percentage
≤20	22	22
21-30	37	37
31-40	21	21
>40	20	20

Table 4, depicted that the majority (37%) of the patients had intraocular pressure 21-30mmHg.

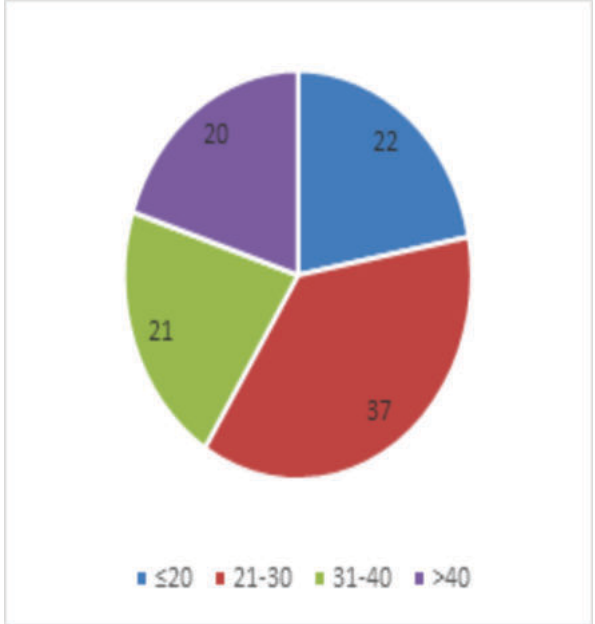

Figure 4. Intraocular pressure

Table 5 Types of glaucoma

Types of glaucoma	Number	Percentage
POAG	59	59
PACG	9	9
NTG	7	7
Secondary glaucoma	25	25

Table 5, showed that the overall prevalence of primary open angle glaucoma was 59% among diabetic patients, followed by secondary glaucoma (25%), primary angle closure glaucoma (9%) and normal

tension glaucoma (7%).

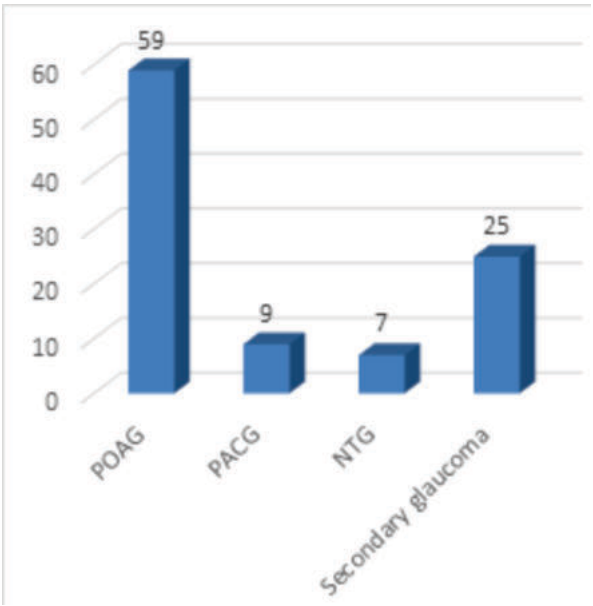

Figure 5. Types of glaucoma

DISCUSSION

In this study a total of 100 diabetic patients were involved. The data was analyzed and discussed with previous literature.

Glaucoma is the second most cause of visual loss globally. [6]In the present study the mean age of the study participants was 59.25±8.58 years and majority (61%) patients were females. The most of the patients were housewives (38%), majority (63%) of the patients resides in rural area and mostly (47%) were from middle class family. The findings are in accordance with the study conducted by Dharmadhikari S, et al. (2015), observed that the mean age was 58.3 ± 10.7 years and majority of the patients were males.[7] Similarly, Vijaya L, et al. (2005), observed that the mean age of the patients were 53.78± 10.71 years and majority (55.1%) of the patients were females.[8]

The majority (61%) of the patients were suffering from diabetes since 6-10 years, followed by 1-5 years (34%) and > 10 years (5%) and most (23% patients) of the patients had 8 HbA1c score.In similar study conducted by Paul A, et al. (2020), observed that majority (50%) of the patients had diabetes since < 5 years and the mean FBS value was 200.25 and mean PPBS value was 307.75.[9]Dharmadhikari S, et al. (2015), reported that the majority of the patients had diabetes since < 5years.[7]

The overall prevalence of primary open angle glaucoma was 59% among diabetic patients. Further, on ocular examination it was reported that the majority (30%) of the patients had visual acuity between 6/36-6/60, 37% patients had 21-30mmHg intraocular pressure. Findings are correlated with the study conducted by ManhasAngli, et al. (2019), reported that the overall prevalence of POAG was 51% among diabetic patients, 6/24-6/18 was the score of visual acuity in majority and most of the patients had intraocular pressure between 21-30 mmHg.[10]Similarly Dharmadhikari S, et al. (2015), found that the overall prevalence of POAG was 50.4% among diabetic patients, mostly patients had 6/6-6/12 visual acuity.[7] In another study conducted by Vijaya L, et al. (2005), found that the prevalence of POAG was 51.6% among diabetic patients and mean intraocular pressure was 17.93 ± 5.35 mm Hg.[8]

CONCLUSION

The present study concluded that the prevalence of primary open angle glaucoma is high among diabetic patients, as diabetes is a risk factor in development of glaucoma which results in vision loss.

REFERENCES

1. Zhao YX, Chen XW. Diabetes and risk of glaucoma: systematic review and a Meta-analysis of prospective cohort studies. Int J Ophthalmol. 2017;10(9):1430-1435.
2. Rajendran N, InuaeyenIsaac, Salor Janie, Jacob, J. Prevalence and risk factors associated with primary open angle glaucoma in diabetic patients in a tertiary care centre. International Journal of Medical Ophthalmology. 2021;10.
3. Tham Y. C. et al. Global prevalence of glaucoma and projections of glaucoma burden through 2040: A systematic review and meta-analysis. Ophthalmology. 2014;121(11):2081–2090.
4. Song BJ, Aiello LP, Pasquale LR. Presence and Risk Factors for Glaucoma in Patients with Diabetes. Curr Diab Rep. 2016 ;16(12):124.
5. Nakazawa T. Ocular Blood Flow and Influencing Factors for Glaucoma. Asia Pac J Ophthalmol (Phila). 2016;5(1):38-44.
6. QuigleyHA. Number of people with glaucoma worldwide. Br J Ophthalmol. 1996;80:389–393.
7. Dharmadhikari S, Lohiya K, Chelkar V, Kalyani VK, Dole K, Deshpande M, Khandekar R, Kulkarni S. Magnitude and determinants of glaucoma in type II diabetics: A hospital based cross-sectional study in Maharashtra, India. Oman J Ophthalmol. 2015;8(1):19-23.
8. Lingam Vijaya, Ronnie George, Pradeep G. Paul, Mani Baskaran, Hemamalini Arvind, Prema Raju, et al. Prevalence of Open-Angle Glaucoma in a Rural South Indian Population. Investigative Ophthalmology & Visual Science. 2005; 46:4461-4467.
9. Abishek Paul,Sundararajan, NamithaBhuvaneswari. Clinical Study of Primary Open Angle Glaucoma In Diabetic Patients. Annals of R.S.C.B. 2020;24(1):520- 524.
10. AngliManhas, Rameshwar S Manhas,Gaurav S Manhas,Dinesh Gupta. Profile of patients of glaucoma in Jammu province (A hospital based study). IJMBS. 2019;3(10):111-115.