“ASSESSMENT OF PREVALENCE AND RISK FACTORS OF GLAUCOMA IN RURAL POPULATION OF ABOVE 40 YEARS OF BELAGAVI DISTRICT – A ONE YEAR CROSS SECTIONAL STUDY

Submitted by:

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ACCEPTANCE LETTERR

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ACCEPTANCE LETTER

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ABSTRACT

PURPOSE:

Glaucoma is defined as “An optic neuropathy in which there is damage to optic nerve with typical loss of nerve fibers as a result of which there is increased cupping of the optic disc”. Glaucoma is a leading cause of irreversible blindness across the world. The loss of vision occurs gradually over a prolonged period of time and is usually recognized only when the disease is reasonably advanced. The impact of visual disability and blindness from glaucoma is most likely costly. Early detection and treatment can prevent or delay loss of vision among most of the patients. Population-based studies are important for assessment of disease burden, health care policy planning and appropriate resource allocation. The aim of this study was to assess the prevalence of glaucoma andrisk factors for glaucoma among rural population of Belgaum district, Karnataka.

METHODS:

It is a population based cross sectional study conducted in the rural areas of Belgaum district. A total of 1000 subjects aged ≥ 40 years were screened in the period of one year. All participants had a comprehensive eye examination, including visual acuity, anterior segment and optic disc examination and IOP measurement. Individual with suspicion of glaucoma, were evaluated for visual field changes using Humphrey visual field analyser. Gonioscopy was done to determine the type of glaucoma.

RESULTS:

The prevalence of any glaucoma was 1.6%, of which prevalence of POAG was 1.4% and PACG was 0.1%, and secondary glaucoma (pseudoexfoliation glaucoma) was 0.1%. The study showed that males were at higher risk of glaucoma than females. Age played no influence on the prevalence of glaucoma. Systemic diseases like hypertension, diabetes mellitus and migraine had no association with prevalence of glaucoma. Family history had no predilection for developing glaucoma. High myopia is not a risk factor for glaucoma. Chronic use of steroids, cigarette smoking and alcoholism play no role in glaucoma prevalence. The mean of the ratio of C:D ratio in glaucomatous eyes is 0.54 in the RE & 0.72 in the LE and the mean IOP was 24.54 ± 11.78 in right eye and 27.83 ± 12.70 in left eye. Blindness owing to glaucomatous optic nerve injury was noted in 50% of the patients.

CONCLUSION:

The prevalence of POAG in this population is not lower than that reported for Indian population elsewhere, however the prevalence of PACG is lower as compared to other studies. Half of the patients with glaucoma had blindness in one or both eyes from glaucoma. Early detection, timely referral to higher centre and treatment can prevent the long term morbidity due to blindness and improve the quality of life. Screening for glaucoma should be an integral part of ocular examination post 40 years of age.

Keywords:

Prevalence, glaucoma, POAG, PACG, risk factors, Mean IOP, Mean C:D ratio.

LIST OF ABBREVIATIONS USED

ACG	–	Angle closure glaucoma
C	–	Anterior Chamber
BP	–	Blood pressure
CCT	–	Central corneal thickness
C:D	–	cup: disc ratio
IOP	–	Intra ocular pressure
LE	–	Left eye
NTG	–	Normal Tension Pressure
NRR	–	Neuroretinal rim
ONH	–	Optic nerve head
OPP	–	Ocular perfusion pressure
OCT	–	Optic coherence tomometry
POAG	–	Primary open angle glaucoma
PAS	–	Peripheral anterior synechae
PACG	–	Primary angle closure glaucoma
RNFL	–	Retinal nerve fibre layer
RE	–	Right eye
VF	–	isual field

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Introduction

INTRODUCTION

Glaucoma islabeled as the "sneak robber of sight" as the diminution of vision occurs gradually over a prolonged period of time. Itis usually recognized only when the disease is reasonably advanced. Glaucoma is “An optic neuropathy in which there is damage to optic nerve with typical loss of nerve fibers as a result of which there is increased cupping of the optic disc”. Retinal ganglion cells undergo apoptosis in a typical pattern resulting inthe nerve damage. If not treated, there ensuesirreversible injury of the optic nerve, resulting in progressive loss of visual field, which can ultimately end as irreversible blindness.

Glaucoma is ranked the 2nd most commonetiology of avoidable blindness amongdiverse populations around the world[1–4]. Globally, among all the age groups,the prevalence of visual impairment is projected to be 285 million, out of which 39 million are blind. Among population aged 50 years and older, 65% are visually challenged and 82% are blind. In India, among population aged≥50 years, the prevalence of blindness andvisual impairment stand at 13.76% and 1.99% respectively. With the prevalence of 5.5%, glaucoma stands at 5th position among the causes of blindness[5].

Various epidemiological studies have presented that increasing age, male gender, people with high myopia, positive family history of glaucoma and diabetics,have greater risk for POAG[6,7]. Age has been one of the most consistent risk factors allied with glaucoma[6].The target attention for glaucoma screening must be more rigorous with increasing age and population with risk factors.

In adjunct to blindness, it is also vital to estimate the visual impairment secondary to glaucoma at different phases of the disease. Data from The Thessaloniki

Eye Study shows that for those who live 20 years without treatment, around 20 and 30% of patients will be blind in at best one eye, with a noteworthy number being considerably visually impaired[8]. The Early Manifest Glaucoma Trial predicts an annual worsening of visual field by 8% among the untreated glaucoma patients[9].

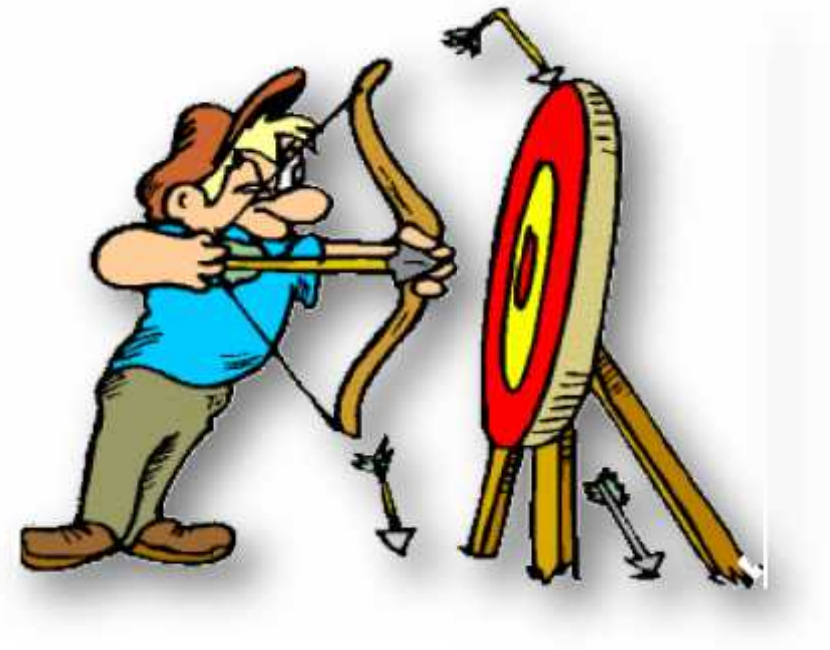
A significant impact on patients' performance of important activities occurs due to visual impairment. The Salisbury Eye Evaluation study reports the association between visual field loss (secondary to glaucoma) and falls, mobility limitations, and the resulting reductions in independence skills[10–12]. Individuals of glaucoma having visual field loss have higher rates of motor vehicle accidents[13]. All these factors limit the degree of independence in patients suffering from glaucoma leading to compromised quality of work.

The primary goal of care for glaucoma patients should be to avert deterioration of quality of life[14–16]. The European Glaucoma Societyintegrate the community perspective – "to prevent loss of Quality of Life at an affordable cost"[16]. But a pitfall for this goal is, what can be labeled affordable varies among different society. Keeping in mind the available resources, each society is entitled to decide the provision of resources for health care and to decideas to which diseases require support for screening and management[17]. Hence knowledge about the prevalence, risk factors and the burden of glaucomatous blindness is essential to plan the health programmes.

Inspite of its public health significance, there have been inadequate data available referring to the prevalence of glaucoma and likely risk factors of glaucoma in India. Early detection and timely treatment can prevent or delay loss of visual function among patients with glaucoma. It is an alarming issue that a common cause of preventable visual impairment and blindness, which is prevalent in this

geriatricpopulation, is under reported and often undetected. In the present study, we shall assess the prevalence of glaucoma among the rural population of Belgaum district in Southern India and evaluate possible associated risk factors for glaucoma.

Objectives



AIMS AND OBJECTIVES

1. To estimate the prevalence of glaucoma among individuals inthe age group more than 40 years.

2. To assess the risk factors associated with glaucoma.

Review of Literature

REVIEW OF LITERATURE

DEFINITION

Glaucoma is defined as "A heterogeneous group of disease characterized by chronic, progressive optic neuropathy and loss of retinal ganglion cells and their axons, associated with progressive visual field loss". Either normal or increased IOP can be concomitant.

HISTORICAL REVIEW

The beginning of glaucoma can be outlined back to as early as 5th century B.C[18]. Initially it was thought to be due to mature cataract or corneal edema. Presently the term does not refer to a single disease entity but to a group of diseases with common clinical features of injury to ONH and subsequent loss of visual field.

As a first consideration, there is the etymology of its classical and lasting name, glaucoma, from a Greek word which, translated, means "seagreen eye"[19]. Hippocrates, the father of medicine, described in detail that greenness of the eye is a premonitory sign of blindness. In 1708, Brisseau, an ophthalmologist and Marechal, a pathologist dissected a glaucomatous eye and concluded that the pathology of glaucoma does not lie in the lens[20].

In 1622, Richard Banister, an English ophthalmologist, gave the first good clinical description of glaucoma and established the relation between raised intra ocular pressure and glaucoma.In mid-16th century the progressive stages of glaucoma: 1) greenish reflex 2) poor vision 3)muddy colour of iris 4) increased

hardness of eye and pain 5) cloudy lens 6) hazy cornea 6) quiet atrophied eye was described by a Scottish ophthalmologist,Dr. William Mackenzhi[20].

In the commencement of 19th century, Dr. Smith, professor of ophthalmology at Birmingham, showed that faulty drainage from the eye is the root cause of glaucoma. Around the same time period, Max Knies and Adolph Weber described adhesions in the angle as a cause of blockage of aqueous outflow. In the mid 19th century, Albert Von Graefe, for the first time emphasized the significance of visual fields and cupping of optic nerve. His ultimate contribution was introducing iridectomy for treatment of glaucoma[19,20].

The definition and the concept of glaucoma has taken drastic turns in the last 100 years. Dr Drance in 1973, for the first time postulated the definition of glaucoma as " A disease of the optic nerve (an optic neuropathy) caused by numerous factors, called risk factors"[19].

GLAUCOMA - Prevalence

The meta analysis of various surveys across the world suggest that glaucoma ranks second among the etiology of blindness. It is challenging to pinpoint the prevalence of glaucoma due to alterations in outliningthe disease, expertise of the diagnostician, and investigative equipment.

A review of worldwide prevalence of POAG among people aged >40 years,projected prevalence of 3.65% among Caribbean andLatin American population, 2.31% among Asians, and 4.20% among Africa descendants[2]. An epidemiological study based in West Africa estimated a prevalence as high as 15% in

individuals above the age of 80[21].Among the Asian populations, the prevalence varied from0.5% in among Mongolian population to 3.9% among Japanese group[22,23].

In Indian till date, only few studies have been conducted to evaluate the prevalence of glaucoma among population in different states. A prevalence study of POAG done in Andhra Pradesh[24]concluded that the prevalence in in urban population was 4% and the prevalence in rural population was 1.6%. The Aravind Comprehensive Eye survey[25] conducted among rural population of Tamil Nadu estimated the prevalence of glaucoma as 2.6%. The prevalence of glaucoma among rural population of Eastern Indian was 2.7%[26]. BangalSurekha V et al conducted a study among the rural population of Maharashtra and the prevalence was estimated as 7.08%[27].

PATHOPHYSIOLOGY OF GLAUCOMA

Two fundamental components ofThe pathophysiology of glaucoma covers:

a) Elevation of intra ocular pressure
b) Progressive optic nerve cupping and atrophy

Elevated intra ocular pressure

It is a general notion that the upsurgeof the IOP is most commonly anoutcome of aqueous humor's decreased outflow facility. In enucleated normal human eyes, Grant demonstrated that incising the entire trabecular meshwork reduced the resistance to outflow by 75%[28]. This proves that the added resistance to aqeoushumor outflow lies in the middle of the anterior chamber and the Schlemm's canal lumen. The greatest resistance is offered by juxtacanalicular tissue.

The diminished outflow facility in glaucoma has also been affiliated to an obstruction of the intrascleral collector channels, caused by an accumulation of glycosaminoglycans in the adjacent sclera.

Numerous theories have been propositioned to explain the increased outflow resistance, few of them are as follows:

1. Trabecular meshwork might get obstructed with foreign materials like-pigments, red blood cells, glycosaminaglycans, extracellular lysosomes, amorphous material, plaque like materials or protiens.
2. A normal constituent of the trabecular meshwork, if catabolized insufficiently or synthesized excessively, can lead to trabecular obstruction.
3. Loss of endothelial cells from the trabecular meshwork interferes with various physiological functions like phagocytosis.
4. The inner endothelial lining of schlemm's canal has pores to facilitate aqeousdrainage. Reduction in size of pores and its density cause increased resistance to outflow facility.
5. Loss of the vacuoles lining the schlemm's canalinterrupts the aqueous outflow.
6. Loss of phagocytic activity disturbs the auto-cleansingmechanism of the meshwork, thus leading to increased accumulation of foreign particles.
7. Mechanoreceptors found in the scleral spur, regulate the aqueous formation and outflow based on the IOP. If this feedback mechanism is interfered in any manner, itresults in unrestrictedrise of IOP.

ALTERED CORTICOSTEROID METABOLISM –

The endothelial cells of trabecular meshwork of patients with POAG, exhibit an atypical metabolism of glucocorticoids[29].The corticosteroids affect trabecular function by modifying metabolism of prostaglandin, catabolism of glycosaminoglycan, release of lysosomal enzymes, cyclic adenosine monophosphate synthesis, or by hindering phagocytosis[30].

DYSFUNCTIONAL ADRENERGIC CONTROL

Similar to the corticosteroid theory, increased sensitivity of adrenergic agonists has been related with the diminished drainage facility in patients with POAG[31].

OPTIC NERVE CUPPING AND ATROPHY

Cupping of the ONH is a hallmark sign of glaucoma. It can be seen, less frequently, in ischemic states and compressive lesions in the posterior optic nerve and chiasm. Analysis of the immunohistochemistry and histopathology of the optic nerve shows fibrosis, arteriosclerosis and diminution of capillaries in glaucomatous ONH[32].

Two major theories have been stated to explain the mechanism of optic nerve cupping and atrophy:

a) Mechanical theory
b) Vascular theory

MECHANICAL THEORY – elevated IOP causescompressionof the structure surrounding the optic nerve head, which consecutively disrupts the axoplasmic flow

in the nerve fibers. This gradually leads to the progressive death of axons and retinal ganglion cells, and causes excavation in the nerve head.

VASCULAR THEORY –glaucomatous injury to the optic nerve head succeedsinadequate blood supply to the optic nerve. This can ensue as a consequence of either systemic hypotension or vasospasm. A lower blood pressure, comparative to IOP leads to fall in the mean ocular perfusion pressure (MOPP), thus diminishing perfusion of the optic nerve head[33].

CLINICAL RISK FACTORS

The framework for evaluating the risk factors concomitant with glaucoma has been obtained from the outcomes of epidemiological investigations and clinical trials. The various risk factors of development of glaucoma are as follows:

INTRA OCULAR PRESSURE

IOP in higher ranges is the prime risk factor for glaucoma development. Even in NTG, asymmetrical IOP isassociated with asymmetrical cupping of ONH and perimetric visual field loss, with the higher damage resulting on the same eye with higher pressure[34]. Various epidemiological researchersimply that a inconstant percentage of patients with IOP > 21 mmHg have glaucomatous optic nerve damage[23,35–37]. The ocular hypertension treatment study proves that, the greaterthe IOP, greater the probability for glaucomatous damage to occur[38].

AGE

Prevalence of POAG is twice as muchas for each decade over 40 years and is 10-timesmore frequentamong >80 year group. The possibility of developing glaucoma increases by 4-6% from baseline per year of age.

GENDER

Gender as a risk factor has always been conflicting. The Framminghamstudy[39], The Barbados Eye Study[36], the Rotterdam study[40] reported higher rates of POAG amongst males. The Blue mountains study[37] reported higher rates in females. Others found no significant statistical association.

RACE AND ETHNICITY

The POAGis more rampant among the population of "West African, Latino or Hispanic or Caribbeanorigin, as competed with other ethnicity. The prevalence among African Americans and Mexicansis trice as competed with the prevalence among non-Hispaanicwhites . When compared with Caucasian Americans, glaucoma induced blindness is nonetheless 6folds more predominant in African Americans[41].

FAMILY HISTORY

A relatively higher risk of glaucoma (by 10 fold) can be noted among the 1st degree blood relatives[40]. The siblings have more significant familial association of POAG than the parents or offsprings[42].

Genetic factors that have an influence on POAG are complex. Although a minimum of six genes loci have been recognised in association with POAG, only a single genetic locus GLC1A on chromosome 1q has been testified in patients with

adult onset POAG[31]. A gene is associated with the production of the protein myocilinin inherent within this interval. Myocilin mutations occur in upto 4.6% of patients having adult onset POAG.

CENTRAL CORNEAL THICKNESS

Corneal stiffness and resistance to corneal indentation influence the tonometry measurements. Hence variations in central corneal thickness (CCT) introduce artifacts in measurement of IOP. The Barbados eye study and the OHTS suggests, 41% and 30% respectively, increase in risk of glaucoma per 40micrones decrease in CCT[36,38].

MYOPIA

A greater prevalence of POAG is suggested among individuals with myopia as compared to indivudualswithout myopia by numerous cross-sectional epidemiologic studies among different ethnic groups[38]. The Rotterdam study statistically establisted a 2.3-fold higher risk of glaucoma among subjects with higher than -4 D myopia[40]. The basic hypothesis is that optic nerve is more vulnerable to damage in axial myopic individuals as a result of poor scleral support.

OCULAR PERFUSION PRESSURE

It is “the difference between retinal vascular blood pressure and the IOP”. Low ocular perfusion pressures disturbs blood flow to the optic nerve head (ONH) resulting progressive optic nerve damage[38]. This theory was substantiated by The Barbados Eye Study which confirmed that lower OPPis a risk factor for glaucoma[36].

TYPE 2 DIABETES MELLITUS

While there are some inconsistent data on the association amid type 2 diabetes mellitus and POAG, there is increasing indication from population-based studies suggesting that type 2 diabetes mellitus is an vital risk factor for POAG[37,43].

SYSTEMIC BLOOD PRESSURE

Several population based surveys have reported a seven-fold surge in the prevalence of glaucoma in those with lower perfusion pressures. Higher diastolic and systolic blood pressures are coupled with higher IOP[44,45].

MIGRAINE

Migraine has been acknowledged as a risk factor for glaucomatous ONH damage. The peripheral vasospasm associated with migraine headache, may hamperthe auto regulation of blood flow to the optic nerve head causing axonal injury[46].

SMOKING AND ALCOHOL

The Beaver Dam eye study postulated that no disparity is noted in the glaucoma prevalence amongst individuals with mild, moderate or heavy alcohol consumption[47]. The prevalence of POAG has not been observed to vary between smokers and non-smokers in other studies, however a non-significant rise in IOP was noted among smokers in the Australian Blue Mountain Eye study[47,48].

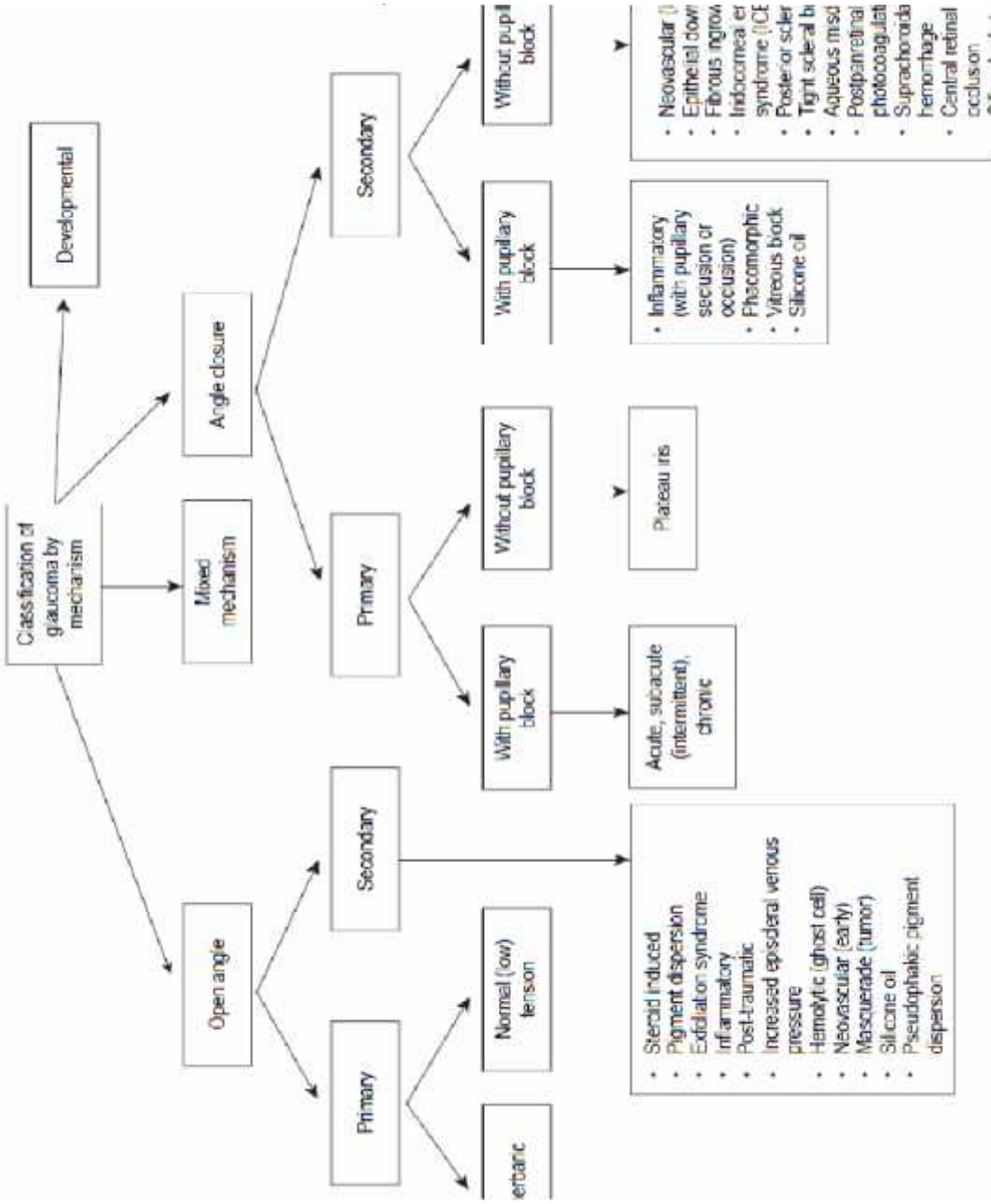
CLASSIFICATION OF GLAUCOMA

The term 'glaucoma' encompasses a wide variety of diseases and conditions.

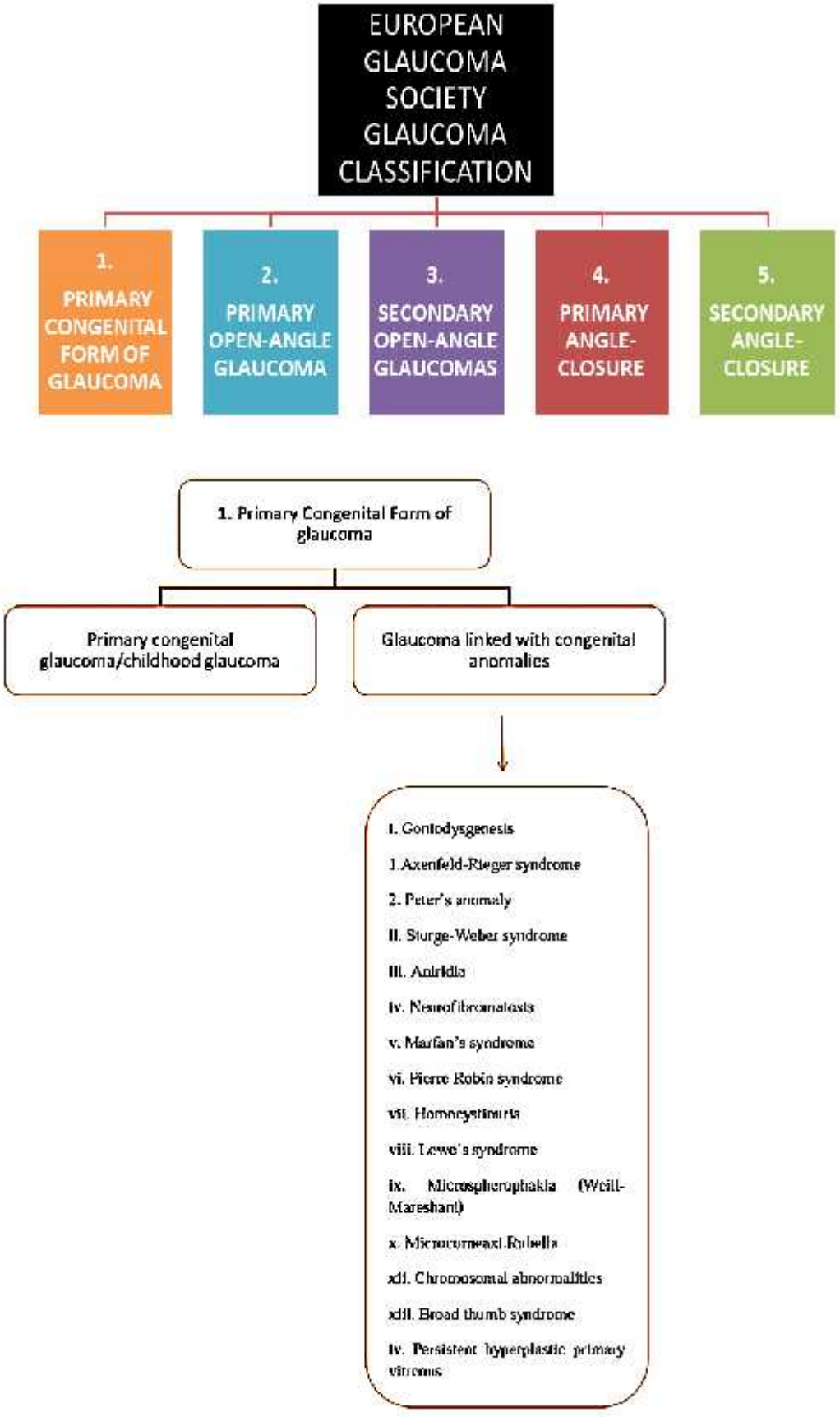
I. Classification of glaucoma according to the age of onset[49]	
Age of onset	Distinguishing characteristics
Congenital	Present at birth, related to developmental abnormalities, almost always requires surgical treatment
Infantile	Glaucoma not present at birth but developing before 2 years of age
Juvenile	Onset after age 2, often having identifiable angle abnormalities (such as absence of ciliary body band) that distinguish the condition from adult open-angle glaucoma
Adult	Typical open-angle glaucoma, onset usually in mid-to-late adulthood (after age 35),no identifiable structural abnormalities in the angle

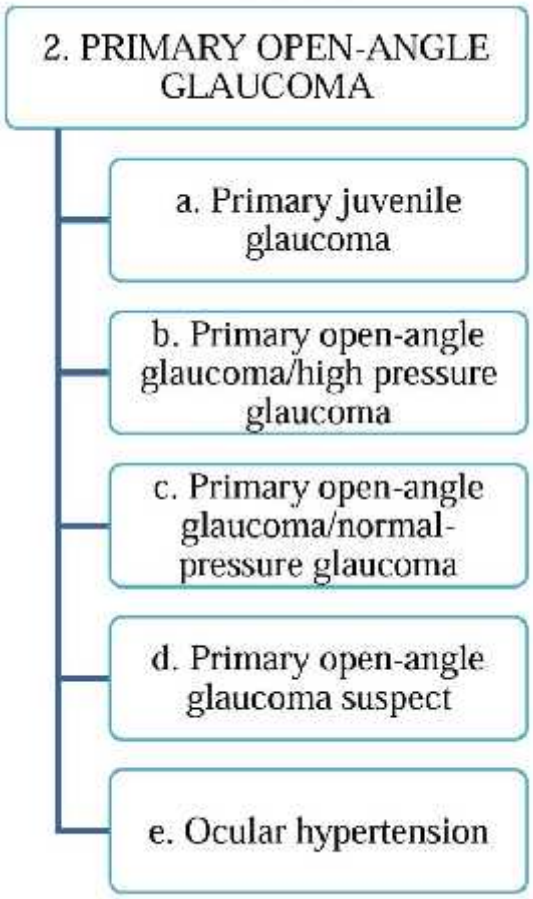
II. Classification of glaucoma by level of intraocular pressure[49]	
Level of IOP	Distinguishing character
Low tension glaucoma	IOP < 21 mmHg, target IOP is low
Normal tension glaucoma	Similar to low-tension glaucoma with slightly higher IOP levels
Hyperbaric glaucoma (usually refered as open angle glaucoma)	Elevated IOP consistently(but usually just referred to > 22 mmHg and frequently much higher, treatment directed at 'normalizing' IOP

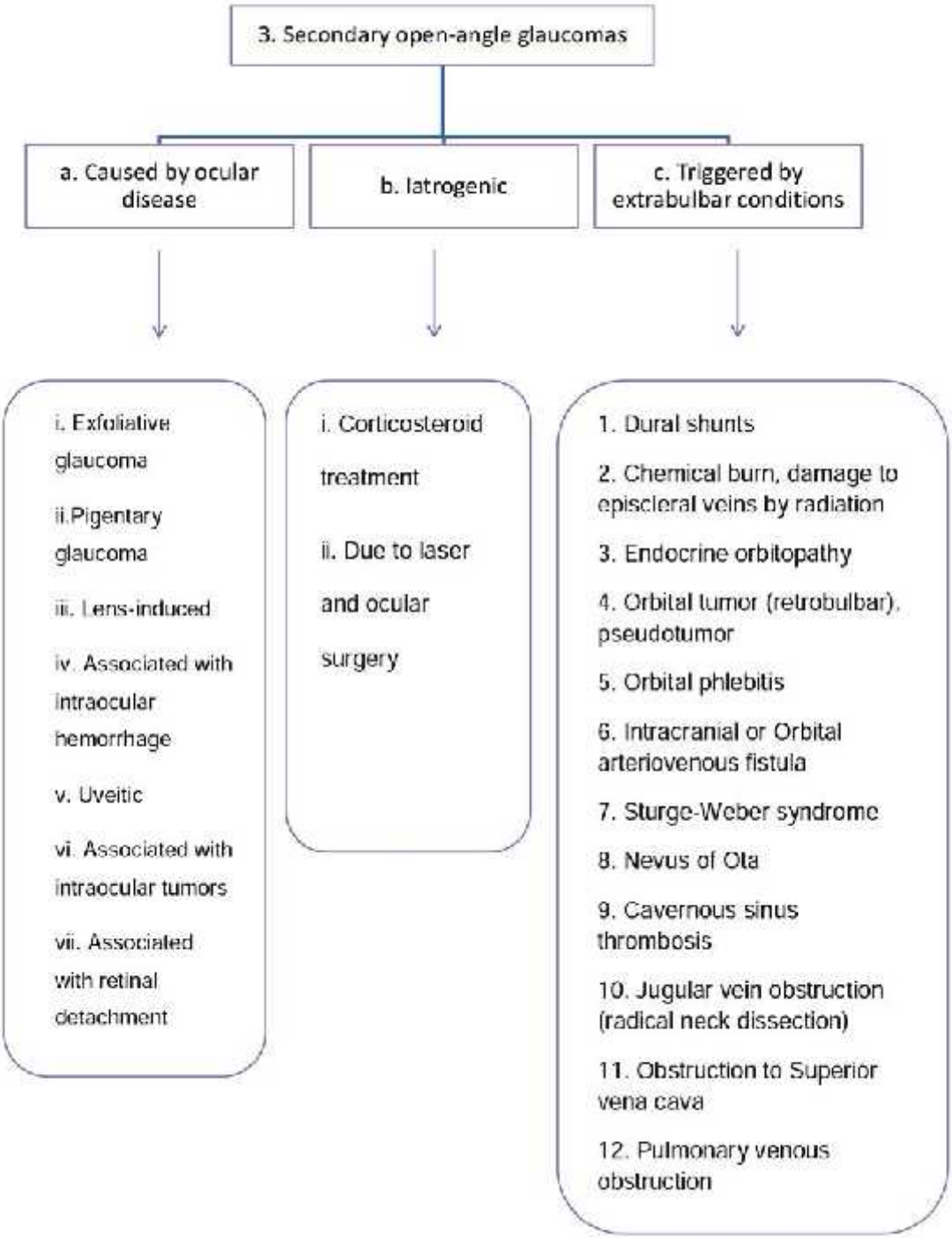
III. Classifica

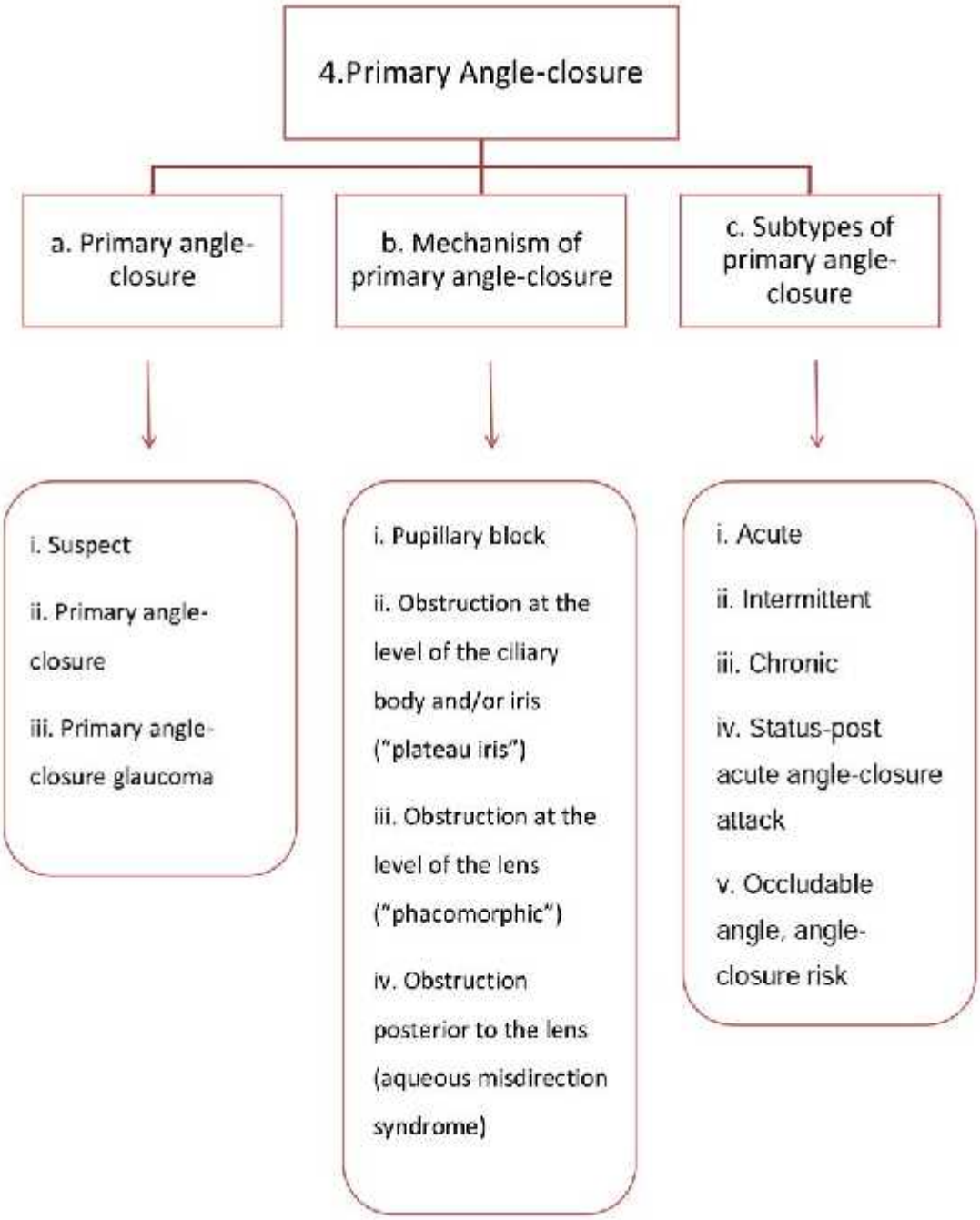


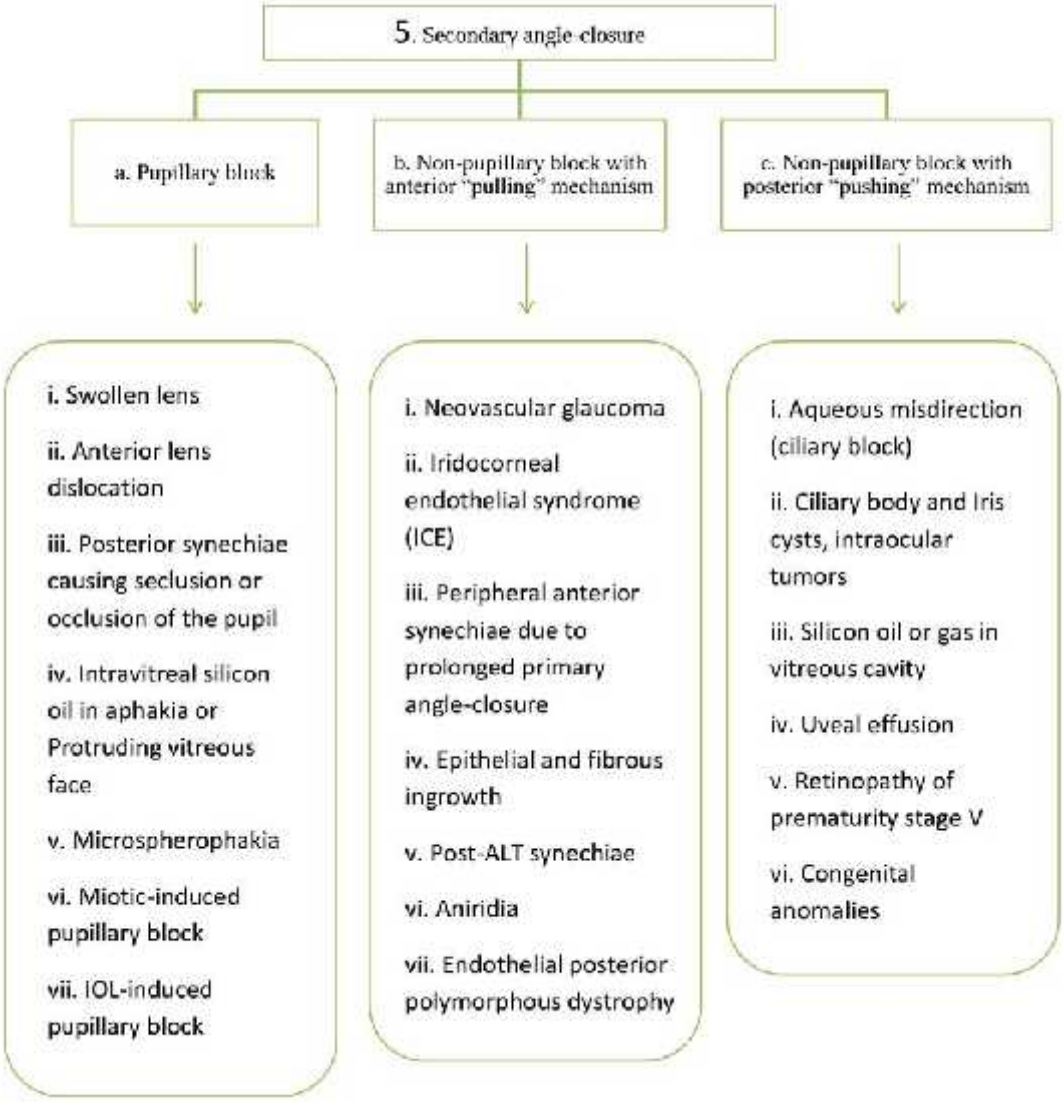
IV. "European Glaucoma Society Glaucoma Classification"[50]


EUROPEAN GLAUCOMA SOCIETY GLAUCOMA CLASSIFICATION
1. PRIMARY CONGENITAL FORM OF GLAUCOMA
2. PRIMARY OPEN-ANGLE GLAUCOMA
3. SECONDARY OPEN-ANGLE GLAUCOMAS
4. PRIMARY ANGLE-CLOSURE
5. SECONDARY ANGLE-CLOSURE
1. Primary Congenital Form of glaucoma
Primary congenital glaucoma/childhood glaucoma
Glaucoma linked with congenital anomalies
I. Gontodysgenesis
1.Axenfeld-Rieger syndrome
2. Peter's anomaly
II. Sturge-Weber syndrome
III. Aniridia
iv. Neurofibromatosis
v. Marfan's syndrome
vi. Pierre Robin syndrome
vii. Homocystinuria
viii. Lowe's syndrome
ix. Microspherophakia (Weill-Mareshani)
x. Microcornea/Rubella
xi. Chromosomal abnormalities
xii. Broad thumb syndrome
iv. Persistent hyperplastic primary vitreous


2. PRIMARY OPEN-ANGLE GLAUCOMA
a. Primary juvenile glaucoma
b. Primary open-angle glaucoma/high pressure glaucoma
c. Primary open-angle glaucoma/normal-pressure glaucoma
d. Primary open-angle glaucoma suspect
e. Ocular hypertension


3. Secondary open-angle glaucomas
a. Caused by ocular disease
b. Iatrogenic
c. Triggered by extrabulbar conditions
i. Exfoliative glaucoma
ii.Pigentary glaucoma
iii. Lens-induced
iv. Associated with intraocular hemorrhage
v. Uveitic
vi. Associated with intraocular tumors
vii. Associated with retinal detachment
i. Corticosteroid treatment
ii. Due to laser and ocular surgery
1. Dural shunts
2. Chemical burn, damage to episcleral veins by radiation
3. Endocrine orbitopathy
4. Orbital tumor (retrobulbar), pseudotumor
5. Orbital phlebitis
6. Intracranial or Orbital arteriovenous fistula
7. Sturge-Weber syndrome
8. Nevus of Ota
9. Cavernous sinus thrombosis
10. Jugular vein obstruction (radical neck dissection)
11. Obstruction to Superior vena cava
12. Pulmonary venous obstruction


4.Primary Angle-closure
a. Primary angle-closure
b. Mechanism of primary angle-closure
c. Subtypes of primary angle-closure
i. Suspect
ii. Primary angle-closure
iii. Primary angle-closure glaucoma
i. Pupillary block
ii. Obstruction at the level of the ciliary body and/or iris ("plateau iris")
iii. Obstruction at the level of the lens ("phacomorphic")
iv. Obstruction posterior to the lens (aqueous misdirection syndrome)
i. Acute
ii. Intermittent
iii. Chronic
iv. Status-post acute angle-closure attack
v. Occludable angle, angle-closure risk


5. Secondary angle-closure
a. Pupillary block
b. Non-pupillary block with anterior "pulling" mechanism
c. Non-pupillary block with posterior "pushing" mechanism
i. Swollen lens
ii. Anterior lens dislocation
iii. Posterior synechiae causing seclusion or occlusion of the pupil
iv. Intravitreal silicon oil in aphakia or Protruding vitreous face
v. Microspherophakia
vi. Miotic-induced pupillary block
vii. IOL-induced pupillary block
i. Neovascular glaucoma
ii. Iridocorneal endothelial syndrome (ICE)
iii. Peripheral anterior synechiae due to prolonged primary angle-closure
iv. Epithelial and fibrous ingrowth
v. Post-ALT synechiae
vi. Aniridia
vii. Endothelial posterior polymorphous dystrophy
i. Aqueous misdirection (ciliary block)
ii. Ciliary body and Iris cysts, intraocular tumors
iii. Silicon oil or gas in vitreous cavity
iv. Uveal effusion
v. Retinopathy of prematurity stage V
vi. Congenital anomalies

TYPES OF GLAUCOMA – DIAGNOSTIC CRITERIA[50]

I. PRIMARY OPEN-ANGLE GLAUCOMA

1. PRIMARY OPEN-ANGLE GLAUCOMA / HIGH PRESSURE GLAUCOMA

- Onset: from the young adult age onwards
- Clinical features:
  - Patient is initially asymptomatic till advancement ofloss of visual fields.
  - Without treatment IOP israised (>21mmhg)
  - ONH shows typicalNRR notchingand diffuse or localized RNFLdefects.
  - Perimetry shows detectable visual field scotomasrelatablewith optic disc changes.
  - On Gonioscopy, angle of the anterior chamber is open.

2. NORMAL TENSION GLAUCOMA

The term normal tension glaucoma denotescharacteristic cupping of the optic disc and scotomas of the eyes with IOP within normal range,AC angle is open, and the deficiency of any causativeocular pathology or systemic disease.

Features:

- IOP values are frequentlyaround 18 or 19 mmHg than 10 or 11 mmHg. The IOP values cluster towardsthe higher end of the normal scale[51].
- Aqueous drainage facility is compromised.
- IOP exhibits variation with posture and circadian cycle. IOP shows peaks during the night or early morning[52].
- CCT may be thinner than average

3. PRIMARY JUVENILE GLAUCOMA

Features:

- Onset isusually past infancy, commonly after puberty or early adulthood.
- Heredity: Genes like MYOC and CYP1B1 have beencoupledwith primary juvenile glaucoma.
- Buphthalmos is absent
- Initially asymptomatic, later present with field loss.
- RaisedIOP if not treated
- Diffuse damage of RNFL and characteristic damage of ONH noted.
- perimetry: Scotomas equivalent to optic nerve damage is seen.
- Gonioscopy shows AC angle to be open, often inadequately differentiated.
- Congenital or developmental anomalies are absent.

4. PRIMARY OPEN-ANGLE GLAUCOMA SUSPECT

Features:

- History of family members with glaucoma may be positive.
- Suspicious signs of glaucoma can be noted on optic disc evaluation and/or RNFL evaluation or might be normal. Minimum one being suspicious.
- Glaucoma should be suspected if:
    - Cup to disc ratio is high.
    - Asymmetry of cups.
    - Irregularity of rim.
- IOP may be increased ornormal.

5. OCULAR HYPERTENSION

Individuals are suspected to as having ocular hypertension if:

- IOP higher than 21 mm Hg without treatment
- No defects of the visual field noted
- ONH and RNFL show no abnormality
- Gonioscopy: AC angle are wide open

- These set of clinical features appears in 4 to 10% of population aged > 40years[39,53].
- It is projected that around 1-2% of ocular hypertensives develop visual field loss[54].
- However recent studies show that these patients can have 40% to 50% loss of optic nerve axons in spite of having normal visual fields[55].

II. SECONDARY OPEN-ANGLE GLAUCOMA

1. EXFOLIATIVE (PSEUDOEXFOLIATIVE) GLAUCOMA

15% to 26% of eyes with pseudo exfoliation develop pseudoexfoliative glaucoma over a 5 year period[56].

Features:

- IOP: > 21 mm Hg.
- Visual field loss as in POAG.
- Exfoliation material (Dandruff-like) is observedon the pupillarymargin and on the anterior lens capsule with a clear central zone.

- The pupillary collarete is asymmetrical&classicallypresents a moth-eaten appearance.
- Depigmentation of the innermost or middle part of iris can be noted &trans illumination may bepositive.
- On gonioscopy, the Trabecular meshwork is profoundly pigmented. The AC angle can vary from being closed toopen. Pigment granules and exfoliativeparticles may be noticed in the inferior angle recess.
- Sampaolesi's line - a pathognomic feature of pseudoexfoliation syndrome. It occurs when pigment collectsalong a line anterior to or on the Schwalbe's line.
- Zonular weakness is frequently noted with phacodonesis or lens subluxation.

2. PIGMENTARY GLAUCOMA

Features:

- AC is deep with retrogradebending of the peripheral iris.
- On retro illumination, Mid peripheral iris shows trans illumination in a radial spoke like shapeowing to pigment loss.
- Pigment accumulationon the surface of iris, equator of lensand along insertion of zonules.
- Pigment accumulationon the endothelial layer of cornea typically accumulates vertically →"krukenberg spindle"
- On gonioscopy, a regular dark browntrabecular meshwork, which is densely pigmented around 360° is noted.

3. LENS INDUCED GLAUCOMA

Classification of glaucoma:

i. Phacomorphic glaucoma - a swollen lens triggers increased pupillary block leading to secondary angle closure.
ii. Dislocated lens - a dislocated lens initiates pupillary block leading to secondary angle closure.
iii. Phacolytic glaucoma - The trabecular meshwork gets obstructed by the lens protein seeping from an intact cataract.
iv. Lens-particle glaucoma - Trauma or surgery can cause release of lens material which causes obstruction of the outflow channels.
v. Phacoanaphylaxis - Secondary glaucoma is caused as a result ofgranulomatous inflammation induced by sensitization to lens protein.

Features:

- Patients usually present with unilateral pain and redness.
- diminished vision and raised IOP.
- Signs of mature/hypermature cataract and/or injured lens are noted

4. Glaucoma induced by corticosteroid

- Chemical structure of the steroid determines the risk of IOP elevation.
- Strength, dose, frequency, duration and mode of administration of steroids further determine the risk of IOP elevation.
- Other risk factors: diabetes, POAG, family history, rheumatoid arthritis, myopia, elderly patients and children.

Features:

- After initiating corticosteroid therapy, IOP elevates in the span of 2 to 6 weeks.
- IOP raise is gradually reversed after discontinuing the usage of corticosteroid.
- Can present with corneal oedema.
- Extended IOP elevation can cause typical perimetric changes andglaucomatous ONHfeatures.

III. PRIMARY ANGLE-CLOSURE GLAUCOMA

1. PRIMARY ANGLE-CLOSURE SUSPECT (PACS)

Features:

- >270° (≥2 quadrants) of irido-trabecular contact.
- IOP within normal range.
- Absence of peripheral anterior synechia.
- Absence of anysigns optic neuropathy.
- Absence of defects of visual field.

2. PRIMARY ANGLE-CLOSURE

- Irido-trabecular contact > 270°
- Elevated IOP and/or PAS
- No signof Glaucoma optic neuropathy.

3. PRIMARY ANGLE CLOSURE GLAUCOMA

- Irido-trabecular contact > 270˚
- Elevated IOP
- Glaucomatous optic neuropathy
- Visual field defect consistent with the cupping ofONH.

4. ACUTE ANGLE CLOSURE GLAUCOMA

Featues:

- IOP above the normal range, often 50 to 80 mmHg.
- Patient complaints of sudden painful diminution of visual acuity and coloured halos
- Corneal oedema, initially mostly epithelial oedema, followed by stromal edema.
- Flat or shallow peripheral AC.
- Peripheral iris pushed forward and in contact with Schwalbe's line.
- Pupil is mid-dilated and sluggishly or non reactive
- Ciliary injection and Venous congestion
- Fundus: Optic disc may be normal or show splinter haemorrhages.
- Gonioscopy- corneal edema might obscure the view. When visible, iridotrabecular contact can be seen for 360°.

5. CHRONIC ANGLE-CLOSURE GLAUCOMA

- Indentation gonioscopy confirms permanent synechial closure of any degree of the chamber angle.

- IOP is raised based on the magnitude of irido-trabecular contact to >21 mmHg.
- Changes of ONHcorresponding with glaucoma
- Defects of Visual field corresponding to glaucoma.

IV. SECONDARY ANGLE CLOSURE GLAUCOMA

1. SECONDARY ANGLE-CLOSURE WITH PUPILLARY BLOCK

Centered on the etiology, any of thesubsequent features might be present:

- Distended lens
- Anterior lens dislocation
- Posterior synechiae leading to occlusion or seclusion of the pupil
- Microspherophakia
- Miotics cause forward movement of lens which induces pupillary block

The usual characters of glaucoma that is elevated IOP, optic disc changes and visual field loss are accompanied.

2. SECONDARY ANGLE CLOSURE WITH ANTERIOR PULLING MECHANISM

i. NEOVASCULAR GLAUCOMA

Retinal ischemia releases angiogenic factors which provoke growth of new vessels on the iris and AC angle. Primarily the fibroneovascular membrane is seen to be covering the angle, but later as the disease evolves the membrane contracts to form PAS.

ii. IRIDOCORNEAL ENDOTHELIAL SYNDROME

Iridocorneal endothelial syndrome includes combination of corneal edema, iris atrophy and secondary ACG. A membrane, constituting abnormal endothelial cells,is formed which covers the angle structures and theanterior surface of the iris. This membrane ultimately contracts to distort the iris leading to occlusion of the angle.

3. SECONDARY ANGLE CLOSURE WITH POSTEROR 'PUSHING' MECHANISM

i. MALIGNANT GLAUCOMA

It commonly encountered post filtering surgery. Closure of the AC angle is triggered by the forward rotation ofciliary body. Aqueous humour accumulates in the vitreous body or behind the crystalline lens or posterir chamber intraocular lens.

GLAUCOMA SCREENING PROGRAMME

GENERAL RECOMMENDATIONS[15]

- Opportunistic screening –

  Patients visiting ahealth care centre for any reason are screened and evaluated for glaucoma. It is centered on diagnosing glaucoma in patients with risk factors among whom glaucoma is more prevalent.

- Universal screening

  The entire population of a communityis screened and evaluated for any evidence of glaucoma. Also known as population based screening programme.

Community care for glaucoma - Goals

The goal of community eye care in glaucoma is timely diagnosis and treatment. Mass community screening is questionable to be cost effective. Lack of trained personnel and required infrastructure poses an additional drawback. An "opportunistic screening" is a suitable alternative. This could be alleviated with a complete eye examination of all patiens above the age group of 40 reporting to the clinic. Assessment of risk factors like ethnicity, family history, myopic eyes and systemic comorbidities like diabetis and hypertension also aids in planning the target population for screening.

Opportunistic screening

This includes:

- Measurement of presenting and corrected visual acuity
- Slit-lamp examination and evaluation of anterior chamber depth by van herick test
- Intraocular pressure measurement
- Gonioscopy (if required)
- Dilated stereoscopic evaluation of the ONH and RNFL.
- A visual field analyzer is required at secondary level of care.
- Ultrasound biometry and OCT are essential at tertiary level of care.

A standard oblique flashlight test for the recognition of narrow angles has testified to have 76.3% sensitivity, and 80.7% specificity isunproductive for community screening[57]. Prevent Blindness America suggests 95-98% specificity and 85% sensitivity for moderate to severe glaucoma[58].

Screening For Glaucoma - Innovative Models

A simple achievable way of increasing the glaucoma yield would be to screen all cataract patients taken from the community for cataract surgery. Phone-based fundus camera can be used for posterior pole photography. A nonmydriatic camera can be benefited for posterior segment evaluation. These fundus cameras with addition of Internet can make tele-consultation a distinctprospect. An automated grading of the disc-cup ratio will be a cost-effective strategy.

Glaucoma - awareness and promotion

Unlike cataract and diabetic retinopathy, there is slight awareness about glaucoma. Various strategies for developing awareness have been described.

These include:

- Making culture and region-specific posters and awareness materials
- Encouragement through celebrities/public figures advicing people for an annual eye examination.
- Neighborhood assembly where the stable glaucoma patients speak up their experience.
- Awareness can also be created by conducting rallies and events on occasions such as World Sight Day and Glaucoma Awareness Week.
- All these awareness programs should highlight on annual eye examination, for all above 40 years of age, those with family history as well as those with diabetes, hypertension, and other lifestyle diseases.

SCREENING FOR GLAUCOMA

Requires:

- Optic disc examination
- Visual field analysis
- Measurement of IOP
- For classification purposes, a comprehensive ophthalmic examination is done including gonioscopy,to weigh theirido-corneal drainage angle.

TEST	IDEAL
Tonometry	Goldmannapplanation tonometry
Examination of the optic disc	Dilated stereoscopic evaluation by slitlamp biomicroscopy Stereoscopic optic disc photography
VF examination(if the IOP is >21 mmHg and/ or the disc is suspicious)	A full threshold test using a calibrated white-on-white automated perimeter

1. OPTIC DISC EVALUATION

The direct ophthalmoscope is most commonly used for the assessment of the ONH as it provided a magnified view. However it bears the limitation of lack of stereoscopic view. Another disadvantage is that it permits colour based instead of contour based judgement of the neuro retinal rim.

Non-contact lenses like +60D, +78D, +90D and volksuperfield lenses provide stereoscopic as well as magnified image of the ONH.

Normal optic nerve head

ONH is vertically oval, with an area of pallor in the centre denoted to as cup. The neuroretinal rim is the orange-pink coloured tissue present between the optic disc margin and the edge of the cup. The NRR is the thickest inferiorly trailed by superior, nasal and temporal. The ratio of diameter of the cup to diameter of the disc is called C/D ratio. Vertical ratio is more significant than the horizontal.

Optic Disc Changes In Glaucoma

The following changes are commonly seen:

- Asymmetry of the cup: disc ratio (>0.2) between the two eyes
- A localized notch or waning of the neuroretinal rim
- An enlarged cup: disc ratio (>0.5), especially if in the vertical axis
- Pallor of the neuroretinal rim
- Superficial disc haemorrhages
- Vascular signs suggestive of an acquired cupping, such as baring of the circumlinear vessels and ‘overpass’ of central vessels
- Parapapillary atrophy

Subtypes Of Glaucomatous Damage:

a) Focal ischemic discs – localized superior and/or inferior notching present and accompanying localized field defects.
b) Myopic disc with glaucoma – shows shallow, tilted disc with parapapillary atrophy visible as temporal crescent, along with signs of glaucomatous damage.
c) Sclerotic disc – shallow, saucerized cup with gradually sloping NRR, irregular peripapillary atrophy and peripheral visual field loss.
d) Concentrically enlarging discs – characterized by even NRR thinning.

Non Specific Signs Of Glaucomatous Damage

- Disc haemorrhages - Disc hemorrhages appear as linear red streaks at or near the disc margin. It is more commonly associated with NTG than with POAG[59].
- Baring of circumlinear blood vessels is an initial sign of thinning of NRR.
- Bayoneting is seen as double angulation of blood vessels.
- Collaterals can be seen between two veins at the disc.
- Laminar do sign is seen in advanced stages of glaucoma.
- Bean pot disc – a white disc with total cupping, with angulation of all blood vessels at disc margin.

RETINAL NERVE FIBRE LAYER

In a glaucomatous eye, subtle RNFL defects pave the wayfor the development of detectable optic disc head and visual field changes. Using red free light increases the contrast between the normal retina and defects thus making the identification

easier. RNFL defect presents in two forms : either localized wedge shaped defects or diffuse defects that are big with indistinct borders[60].

2. GLAUCOMATOUS VISUAL FIELD DEFECTS

The Visual field abnormalities in glaucoma are initially observed in Bjerrum area which is 10–25° from fixation. Eid and colleagues concluded from their study that paracentralscotomas(29%), nasal steps(20%), and simple arcuate defects(18%) are the principal diagnostic field abnormality[61]. The visual defect always correlates with abnormalities seen in the optic nerve head.

Generalized Depression

Generalized depression of visual field is an initial sign of glaucoma. It should arouse the doubt of glaucomatous damage, if it is unilateral or associated with high IOP or larger C:D ratio[62]. In Humphrey field analyzer, Mean deviation is used to signify the quantity of generalized depression.

Localized Defects

Localized defects, also called scotomata, develop as result of insult to one or more specific bundles of axons. They can be either absolute or relative. In an Humphrey field analyzer, the variation of decibel is expressed as standard deviation.

Nasal Step

The nasal quadrant of the visual field is affected in the initial stages of glaucoma[63]. An asymmetry in the nerve fibre injury at the two poles causes the nasal visual field to display manifestation of a horizontal shelf.

Seidel's Scotoma

Also known as enlargement and baring of the blind spot. The scotoma starts from from the pole of the blind spot and arches over the macular area. This is not a pathognomic change of glaucoma, as it can be present in normal individuals too.

Isolated Paracentral Scotoma

In the initial phases of glaucoma, isolated paracentralscotomas with dense centre are seen. With progression, these defects worsen, expand and merge to form arcuatescotomas. Discrepancy of patient's response in the para central zone might be an early sign of glaucoma[64].

Arcuate Defects

It is a characteristic feature of complete RNFL defect. This defect starts from the blind spots, arches above or below the fixation, or both, to end at the horizontal nasal raphe. It turns into an altitudinal defect, when there is peripheral nasal and further expansion.

Central & Temporal Islands

As the disease progresses, superior axons and inferior axons are affected, sparing the papillmacular bundle and nasal fibers. This results in a distinctive field defect of a minor central island and a temporal crescent.

ANDERSON'S CRITERIA

This is used to pick up early or minimal abnormality in visual field defect in glaucomatous eye:

1. Three non-edge adjacent points in total or pattern deviation probability plot should have
    - Two points P< 5%

- One point P < 1%

2. PSD P < 5%
3. Glaucoma hemi field test is abnormal

3. TONOMETRY

The intro ocular pressure can be measured using various direct and indirect manometric methods. In direct method, a catheter with one end connected to a manometric device, is introduced into the anterior chamber to record the IOP. Whereas in indirect method, IOP is calculated based on the response of the eye to various applied forces.

SCHIOTZ TONOMETER

Schiotz tonometer is a prototype for indentation tonometer. The distortion or indentation of the globe by applying a minimal weight on the corneahelps in estimating IOP. The schiotz tonometer consists of a footplate, metal plunger and a needle sliding over the scale. The entire instrument weights 5.5g. the weight can be further increased to 7.5, 10 or 15g by adding additional weights.

When the IOP is low, the indention of the cornea in more, so the reading on the scale shows a higher value. Each unit on the reading scale represents 0.05mm projection of the plunger[65].

When the schiotz tonometer is placed over the eyes, the IOP rises. This rise of IOP reflects the dispensability of the ocular coats, also termed as ocular rigidity. Eyes with higher ocular rigidity give falsely high IOP values on schiotz tonometry, whereas eyes with lower ocular rigidity give low values[66].

Falsely high IOP reading is also seen in cases of either a steeper cornea, and also when the thickness of the central corneal is higher[67].

4. GONIOSCOPY

Gonioscopy is biomicroscopic examination of the angle of the anterior chamber of the eye[68]. It facilitates the glaucomas to be classified into two main groups, angle-closure glaucoma and open-angle glaucoma. Gonioscopy ishelpful for diagnosis of glaucoma, to evaluate prognosis, and therapeutically.

Due to the "total internal reflection" at anterior surface of precorneal tear film, the angle of the anterior chamber cannot be visualized directly. Goniolens helps in eliminating the total internal reflection of light because the refractive index of the goniolens is similar to that of cornea.

Goldmann three mirror goniolens in an indirect gonioscopic lens. It is a quick and easier method for viewing the angle structures.

Structures Visualised On Gonioscopy

1. Schwalbe line - This is the anterior most structure, which is visible as whitish to erratically pigmented line.
2. Trabeculum–It lies next tothe Schwalbe line and is whitish in colour. The posterior, pigmented part lies in linewith the scleral spur and appears as greyish-blue translucent structure in the young. In older eyes, pigmentation is seen in the posterior trabeculum.
3. The scleral spur - it is positioneddirectly posterior to the trabeculum and is visible as a narrow whitish band.
4. The ciliary body –it is a pink, dull brown or slate grey band which is situated just posterior to the scleral spur.

GRADING SYSTEM

The gonioscopic findings have to be recorded for communication and for future reference. Grading systems permit the same. Several systems for grading the angle have been proposed:

The mostroutinely used system is the Shaffer grading system. Rather than the degree to which the angle is closed, this system describes the degree of open angle. The Shaffer system estimatesthe angle of iris insertion[69].

Shaffer's system of grading anterior chamber angle:

Grade	Angle width	Description	Risk of closure

4	45-35	Wide open	Impossible
3	35-25	Wide open	Impossible
2	20	Narrow	Possible
1	10	Extremely Narrow	Probable
Slit	Slit	Slit	Probable
0	0	Closed	Closed

Methodology

METHODOLOGY

This was a cross sectional study conducted by the Department of Ophthalmology, KLES Dr. Prabhakar Kore hospital and Medical Research Centre, Belagavi from January 2019 to December 2019 to evaluate the prevalence of and risk factors of glaucoma in rural population of above 40 years of Belagavi district.

Study Population

The source of data for the study will be all the newly diagnosed and already diagnosed glaucoma cases attending screening sessions conducted in rural areas of Belagavi district of Karnataka.

The census of India defines rural area as[70]:

- Maximum population of 5,000.
- At least 75% of the male working population is agricultural.
- A density of population of at least 500 sq. Km. (i.e. 1000 per sq. Mile)

The areas of Belgaum district under gram panchayath and qualifying the above criteria were selected for conducting the study.

Study design:

Prospective Study

Study duration:

One year: 1st January 2019-31st December 2019.

Sample size:

The sample size formula based on prevalence is

$$n = \frac{z_\alpha^2 P(1-P)}{d^2}$$

where P is the percentage of prevalence and d is the percentage likely difference in the prevalence.

z_α is linked with the level of significance.

For 1% level of the significance $z_\alpha = 2.576$.

With P = 2.6% and d = 2%, the sample size is 420.

To make the study more confirmative, the sample size will be raised to 1000.

Sample method:

Simple random sampling

Selection criteria:

Inclusion criteria:

All patients between 40-85 years of age, who are newly diagnosed or already diagnosed cases of glaucoma, diagnosed during screening sessions held in rural areas of Belgaum district.

Exclusion criteria:

1. History of ocular trauma
2. Acute ocular inflammation.

STUDY PROCEDURE

After the approval from the institutional review board and ensuring that all the study procedures adhere to the tenets of "The Declaration of Helsinki", the study was conducted. Glaucoma screening camps were conducted by the Department of Ophthalmology, KLE's Dr. Prabhakar Kore Hospital and MRC in the rural areas of Belagavi district.

The camps were conducted on pre decided dates and place. The entire household in that area were informed about the details of the camp through posters, announcements and spread of word. The camps were open to all the individuals willing to get a comprehensive eye examination. An opportunistic type of glaucoma screening was done. Patients were registered and their demographic data were listed. Individuals who satisfied the above mentioned inclusion criteria were enrolled in the study as subjects. A single observer study was carried out on these individuals. A detailed written and informed consent was obtained from the patients, after explaining to them about the procedures they would undergo in the study.

History

A thorough history of the patient, including patient particulars, ocular complaints like diminution of vision, headache, redness, watering were duly filled in the proforma. History of any co morbidities like hypertension, diabetes mellitus and migrane was noted. Any history of drug intake was also taken. The duration and frequency of tobacco smoking and alcohol intake was noted if patient gives history of these habits.

Local examination

Detailed examination of the eyes was carried out starting with:

- Assessment of visual acuity was done by Snellen's chart and nearvisionchart.
- External ocular examination was done.
- Detailed anterior segment examination of both eyes was done which included:
    - Any conjunctival congestion was noted
    - Cornea was checked on any edema or opacity
    - Anterior chamber depth was compared to the thickness of the cornea
    - Iris was examined to note any neovascularization, atrophic patches or loss of normal pattern.
    - Size and shape of the pupils were recorded. Pupillary reflexes, both direct and indirect light reflexes were tested. The relative afferent pupillary defect wastested with swinging flash light test.Presence of any exfoliative material was noted
    - The lens was examined and exfoliative deposits, phacodenesis, subluxation, and dislocation was noted along with lens size, shape and clarity.

OPTIC DISC EVALUATION

All patients had pupillary dilatation with 1% tropicamide and 5% phenylephrine. The optic nerve was evaluated using a direct ophthalmoscope which gives a magnified view of the optic disc and RNFL.

The following features were noted:

- Optic disc size and shape
- Neuroretinal rim size and shape
- Optic cup size in relation to optic disc size – cup:disc ratio
- Optic cup configuration and depth
- Position of central retinal vessels and branches
- Optic disc hemorrhage
- Retinal nerve fibre layer defect
- Peripappillarychoroidal atrophy

INTRAOCULAR PRESSURE

IOP was measured with schiotz tonometer.Technique of IOP estimation by schiotz tonometerwasas follows:

The patient was made to lie in supine position and asked to fixate on a target just overhead. The examiner separates the eyelids without applying any pressure. Cornea is anaesthetized using topical 0.5% proparacaineeyedrops. The footplate of the tonometer is softly placed on the anaesthesized cornea such that there isunrestricted vertical movement of the plunger. Ifthe reading on the scale is less than 4, supplementary weight wasplaced on the plunger. Average of three consecutive

reading was recorded. A conversion table was used to estimate the IOP in millimeters of mercury from the plunger weight andscale reading.

Photograph 1: IOP measurement using Schiotz tonometer at a screening camp.

If any individual was suspected to have glaucoma based on optic disc evaluation and/or IOP >21mm of Hg, that individual was called to the Department of Ophthalmology, KLE's Dr. Prabhakar Kore Hospital and MRC for following evaluation:

1. SLIT LAMP BIOMICROSCOPY

The optic nerve was re-evaluated using a slit lamp biomicroscope and a posterior pole lens (90 D lens). The slit beam rather than diffuse illumination was used in detecting changes in the contour of the optic disc.

2. VISUAL FIELD EVALUATION

All visual field examinations were carried out using the same Humphrey Visual Field Analyzer II-i series (Zeiss company) and by same perimetrist. Each patients distance correction was entered into the perimeter's software. The software calculates the trial lens power needed according to the date of birth of the patient entered.

By means of the Humphrey Visual Field Analyzer II-i series (Zeiss), SITA standard test by 30-2 program and a white background with stimulus of size III was performed. The total deviation plots and pattern deviation plots & global indices were derived using STATPAC for SITA,version A10.1.Visual fields with high reliability parameter("fixation losses >33 %, false positive responses >33%, or false negative responses>33 %") were excluded and the test was repeated on a subsequent date.

All the 8 zones of the single field analysis print out were examined serially for detecting the glaucoma induced visual field defect. Following are the parameters of minimumstandards for visual field defect:

1. Outside normal limits values in Glaucoma hemifield test (GHT).
2. PSD(for SITA standard) with values of P<5%.
3. Three non-edge adjacent points in total or pattern deviation probability plot should have

- Two points P< 5%
- One point P < 1%

Even one out of the criteria was reflected adequatetestimony of glaucoma inducedvisual field defect.

3. GONIOSCOPY

Gonioscopic evaluation of the anterior chamber angle was done with help of Goldmann 3 mirror gonioscopy lens.

Technique

The patient sat with the head firmly placed against the head rest of the slit lamp and a local anaesthetic (0.5% proparacaine) was instilled. 1% methylcellulose solution was placed on the corneal aspect of the gonioscopic mirror. With the patient looking upwards, lower edge of the lens was placed in the lower fornix, the upper lid was elevated, the patient was instructed to gaze straight and the lens was rotated against the eye. An inverted image of the opposite angle was viewed in the mirror. The scleral spur and the Schwalbe's line were most consistent angle landmarks which were used for identification of angle structures and their grading. Schwalbe's line was identified as the termination of the corneal light wedge. The scleral spur was identified as the location of insertion of the iris on the ciliary face, convexity of iris and the distinction peripheral iris roll. The Shaffer's system was used to grade the anterior chamber angle.

4. DIURNAL VARIATION OF IOP

In individuals suspected to have normal tension glaucoma, the diurnal variation of IOP was evaluated. The IOP was recorded every 4^{th} hourly for 24 hours. The highest and the lowest IOP in 24hours were compared. If the difference between the highest and the lowest IOP was >8mmofhg, the test was considered to be significant.

OTHER TESTS:

- The diabetic state of the patient was confirmed by checking random blood glucose level. Value of >140mg/dl was considered as diabetic.
- The systolic and diastolic blood pressure was measured using an automated BP apparatus to check for hypertensive state of the patient. Value of > 160mmhg systolic pressure and > 90mmhg of diastolic pressure is considered as hypertensive.
- A streak retinoscopy was performed to check for myopic status of the patient. Patient was considered as high myopia if refractive error was ≥ 6D.

STATISTICAL ANALYSIS:

Continuous variables are represented by mean ± SD form and categorical variables by a frequency table. Chi-square is used to check the association between categorical variables. QQ plot/Shapiro-Wilk's test used to check the normality of variables. P-value less than or equal to 0.05 indicates the significance.

Results

RESULTS

The present study was conducted on 1000 individuals presenting to the screening camps organized in the rural areas of Belgaum district from January to December 2019 by Department of Ophthalmology, Dr. Prabhakar Kore hospital and medical research centre.

Table 1: Prevalence of Glaucoma.

Sl No.	Presence of glaucoma	No of screened Individuals	Percentage
1	Without Glaucoma	984	98.40%
2	With Glaucoma	16	1.60%
	Total	1000	100%

A total of one thousand individuals aged >40 years were screened during the study. Out of one thousand screened individuals, 16 (1.6%) individuals were diagnosed with glaucoma. Table 1 shows the prevalence of glaucoma.

Graph 1: Prevalence of glaucoma in the study population

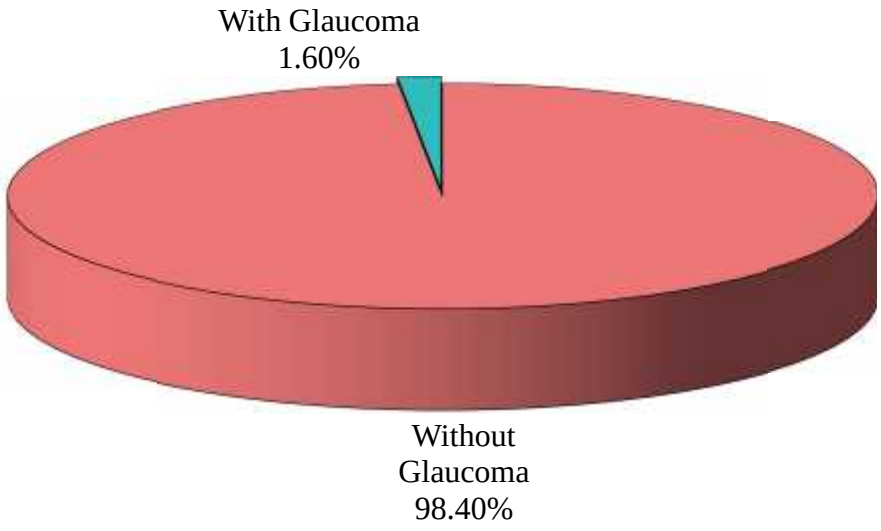


Table 2: Prevalence of Types of glaucoma

Types of Glaucoma	NO OF GLAUCOMA PATIENTS	PERCENTAGE	PREVALENCE
Normal Tension Glaucoma	5	31.25%	0.5%
Primary Open Angle Glaucoma	9	56.25%	0.9%
Pseudoexfoliative Glaucoma	1	6.25%	0.1%
Primary Angle Closure Glaucoma	1	6.25%	0.1%
TOTAL	**16**	**100%**	**1.6%**

Table 2 shows the distribution of different types of glaucoma among patients diagnosed during the screening. Of the total 16 patients, 9 had POAG; including 5 NTG patients. Pseudoexfoliative glaucoma and PACG was seen in one patient each.

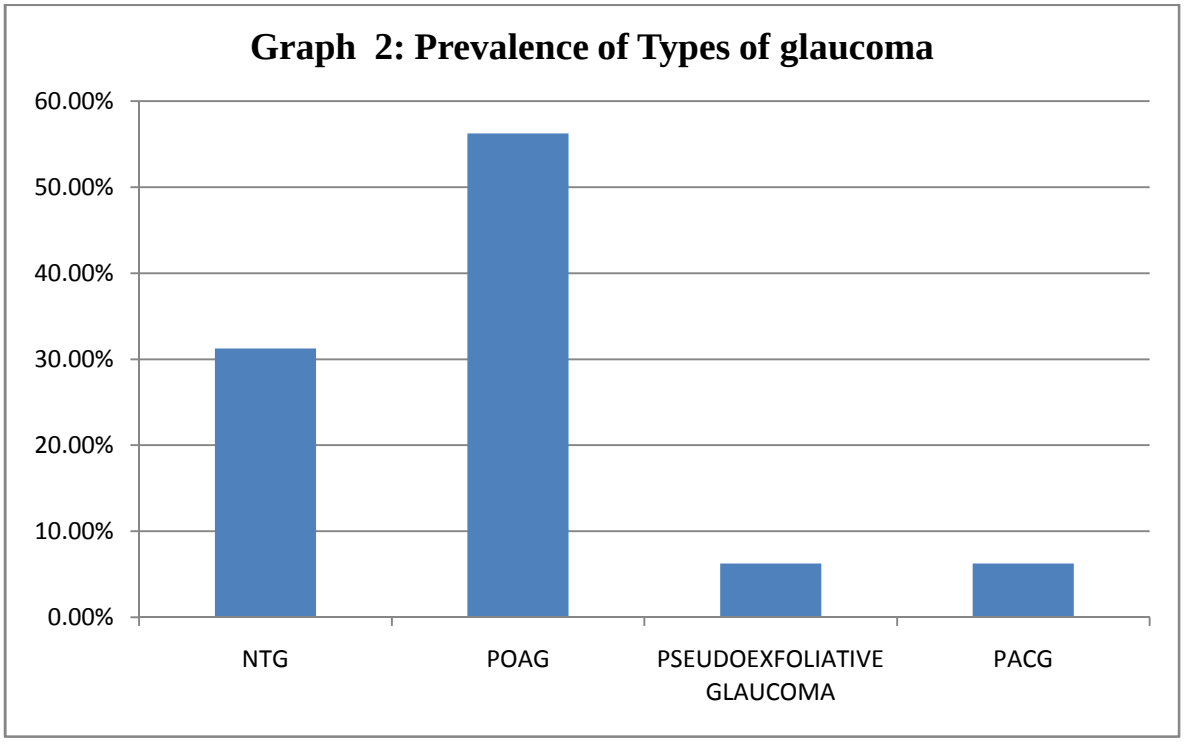

Graph 2: Prevalence of Types of glaucoma
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
NTG
POAG
PSEUDOEXFOLIATIVE GLAUCOMA
PACG

Table 3: Prevalence of glaucoma according to age distribution

Sl No.	Age groups	Total screened individuals	Glaucoma patients	%	P value
1	40-49yrs	117(11.70%)	2	1.71	**P = 0.9692**
2	50-59yrs	173 (17.30%)	3	1.73	
3	60-69yrs	460 (46.00%)	8	1.74	
4	70-79yurs	197 (19.70%)	2	1.02	
5	>=80yrs	53 (5.30%)	1	1.89	
	Total	**1000**	**16**		
	Mean age	61.98±10.14	60.5±11.43		

Table 3 shows the prevalence of glaucoma according to age group. Mean age of all the screened individuals was 61.98±10.14. Out of the 1000 screened individuals, maximum individuals were between the ages of 60-69years (46%). The maximum number of patients with glaucoma also belonged to the same age group. The prevalence of glaucoma was least for the age group of 70- 79 years and maximum for age group > 80 years. There is no significant difference in the mean age between subjects with glaucoma and no glaucoma. The p value of 0.9692, indicates that there is no significance association between age and prevalence of glaucoma.

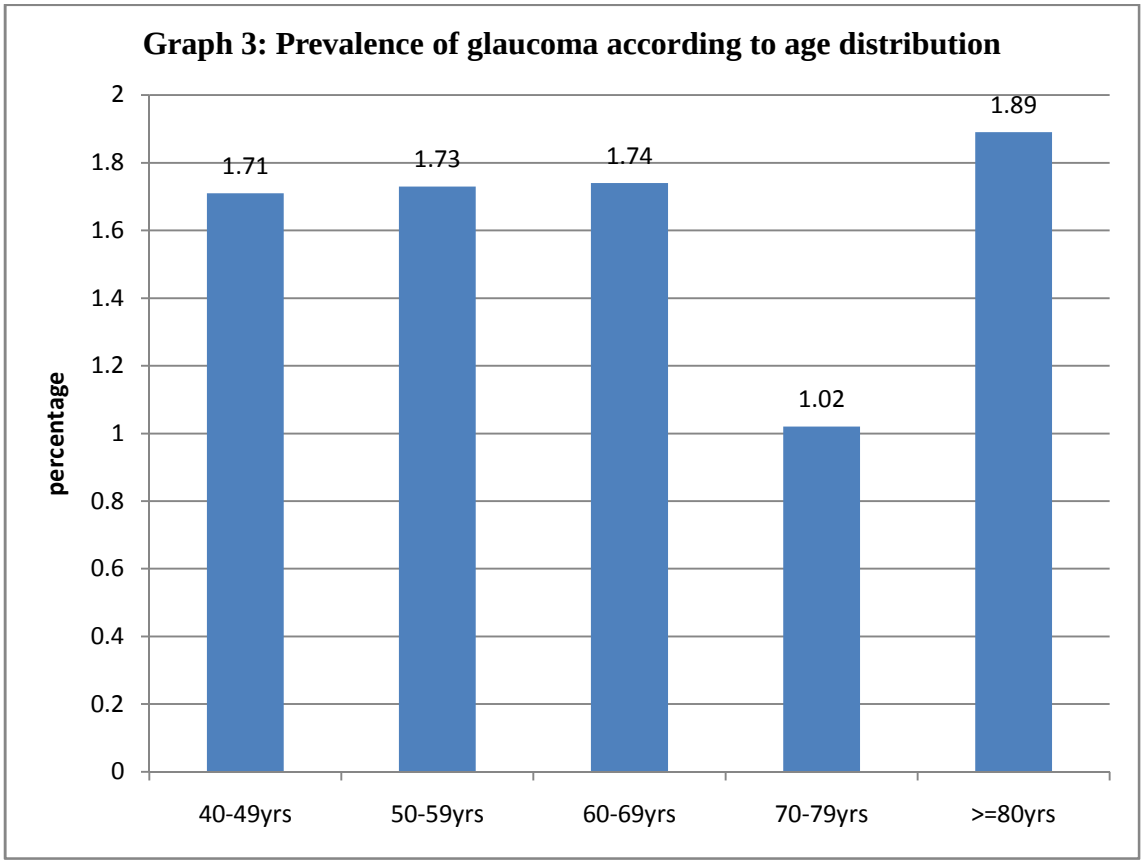

Graph 3: Prevalence of glaucoma according to age distribution
percentage
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1.71
1.73
1.74
1.02
1.89
40-49yrs
50-59yrs
60-69yrs
70-79yrs
>=80yrs

Table 4: Prevalence of glaucoma by gender

Sl No.	Gender	Total screened individuals	%	Glaucoma patients	Prevalence	P value
1	Male	423	42.30	13	3.07	**P = 0.0010***
2	Female	577	57.70	3	0.52	
	Total	1000	100.00	16		

Table 4 shows the prevalence of glaucoma according to gender. Out of the total 1000 screened individuals, 423 were male and 577 were female withM: F ratio of 1:1.36. Of the 16 patients diagnosed with glaucoma, 13 were male and only 3 were female. The prevalence of glaucoma among male is 3.07% as compared to 0.52% among females. By Chi-square test, there is statistical significant association between gender and glaucoma. Odds of having glaucoma is 6.0667 (CI: 1.7178-21.4252) times more for males compared to females.

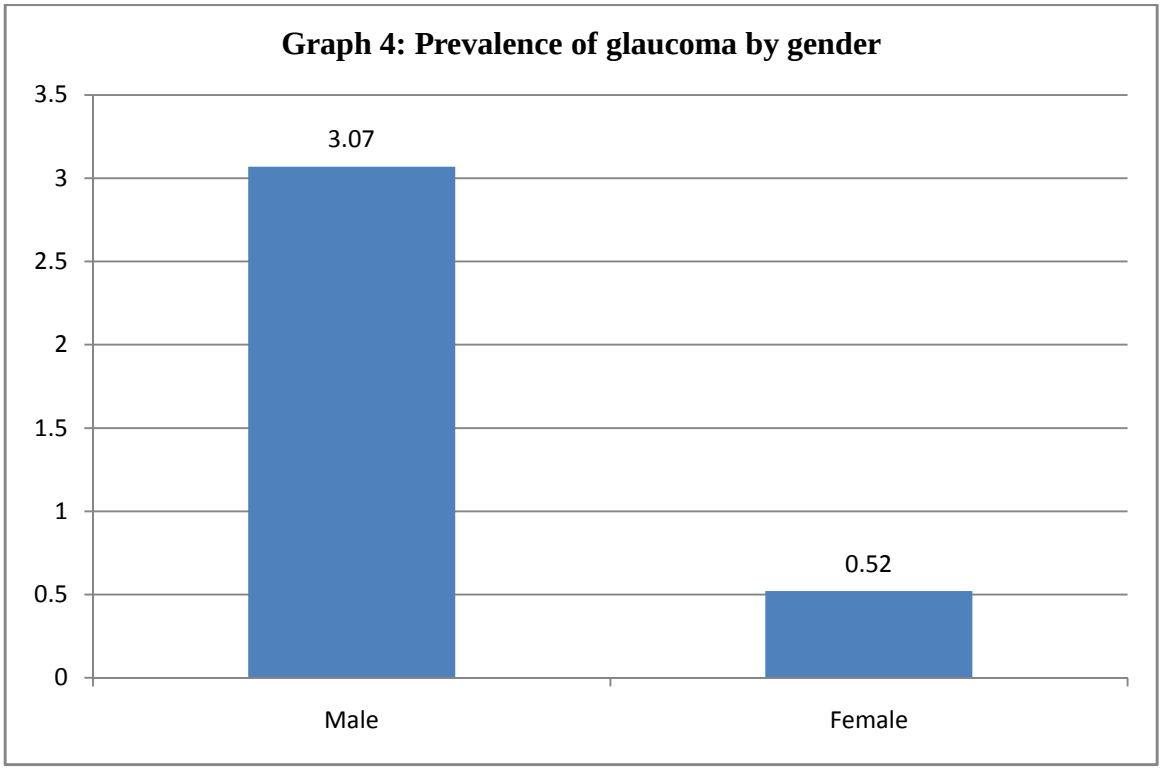

Graph 4: Prevalence of glaucoma by gender
3.5
3
2.5
2
1.5
1
0.5
0
3.07
0.52
Male
Female

Table 5: Association of risk factors among normal individuals and glaucoma patients

Sl No.	Risk factors		Total screened individuals	Glaucoma patients	%	P Value
1	**Hypertension**	No	788 (78.80%)	12	1.52	**P = 0.9470**
		Yes	212 (21.20%)	4	1.89	
2	**Diabetes mellitus**	No	894 (89.40%)	12	1.34	**P = 0.1400**
		Yes	106 (10.60%)	4	3.77	
3	**Migraine**	No	999 (99.90%)	16	1.6	**P = 1.0000**
		Yes	1 (0.10%)	0	0	
4	**Family history**	No	1000 (100.00%)	16	1.60	**P = 1.0000**
		Yes	0 (0.00%)	0	0.00	
5	**Chronic steroid use**	No	1000 (100.00%)	16	1.60	**P=1.0000**
		Yes	0 (0.00%)	0	0.00	

Table 5 shows the prevalence of glaucoma and association among individuals withrisk factors. By chi square test it is noted that p value is not significant. There is no statistically significant association between diabetes mellitus, hypertension and migraine and glaucoma. Of the 1000 individuals screened, none of the individuals had any relatives diagnosed with glaucoma. No statistically significant association between glaucoma and family history could be proved using chi square test as P value is 1. Of the 1000 individuals screened, none of the individuals had positive history of chronic use of steroids. No statistically significant association between glaucoma and steroid could be proved using chi square test as P value is 1.

Graph 5: Prevalence of glaucoma by Risk Factors

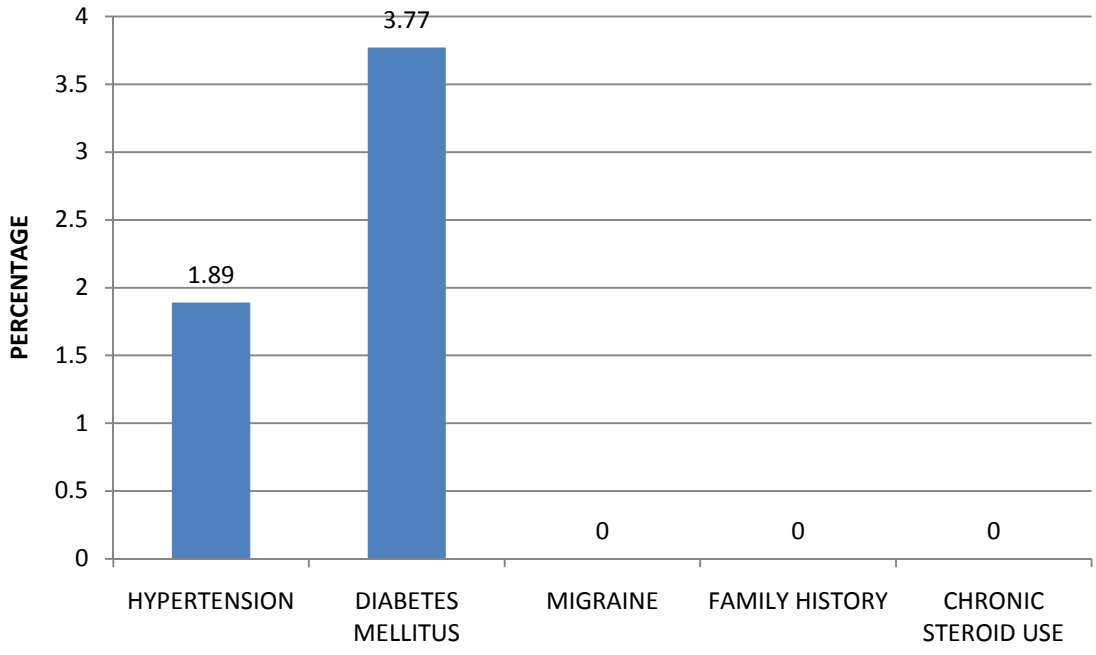


Table 6: Prevalence and Association of smoking and alcohol among normal individuals and glaucoma patients.

Sl No	Risk factors	Total screened individuals	Glaucoma patients	%	P valve
	Smoking				
1	No	988 (98.80%)	15	1.52	**P = 0.4760**
2	Yes	12 (1.20%)	1	8.33	
	Alcohol				
1	No	988 (98.80%)	15	1.52	**P = 0.4760**
2	Yes	12 (1.20%)	1	8.33	

Table 6 shows the association of glaucoma with chronic alcoholics and chronic tobacco smokers. By chi square test, p value of 0.4760 was calculated. This proves no statistically significant association between smoking and alcoholism with glaucoma. Figure 7 shows the prevalence of glaucoma among chronic alcoholics and smokers.

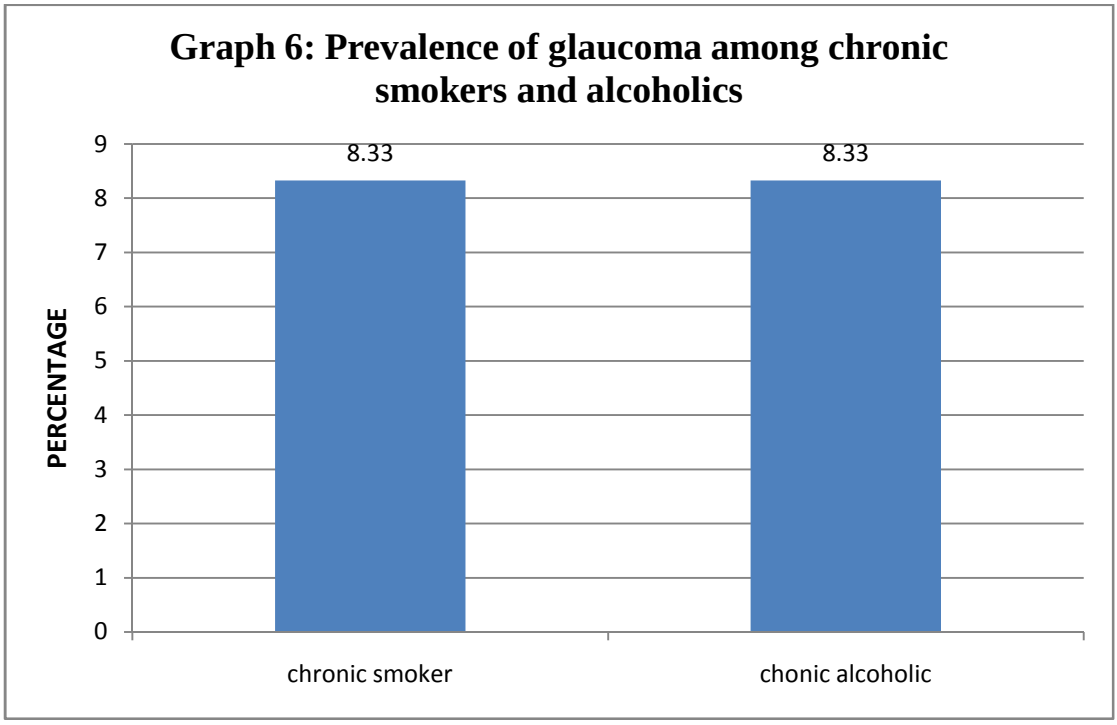

Graph 6: Prevalence of glaucoma among chronic smokers and alcoholics
PERCENTAGE
9
8
7
6
5
4
3
2
1
0
8.33
8.33
chronic smoker
chonic alcoholic

Table 7: Prevalence and Association of high myopia among glaucoma patients

Sl No	High Myopia	Total	%	Glaucoma patients	%	P value
1	No	980	99.59	15	93.7	0.06597
2	Yes	4	0.41	1	6.25	

As shown in table 7, out of the total 1000 individuals screened during the study, only 5 individuals had a myopic refractive error of more than -6D. Out these 5 individuals, only one patient was diagnosed with primary open angle glaucoma.

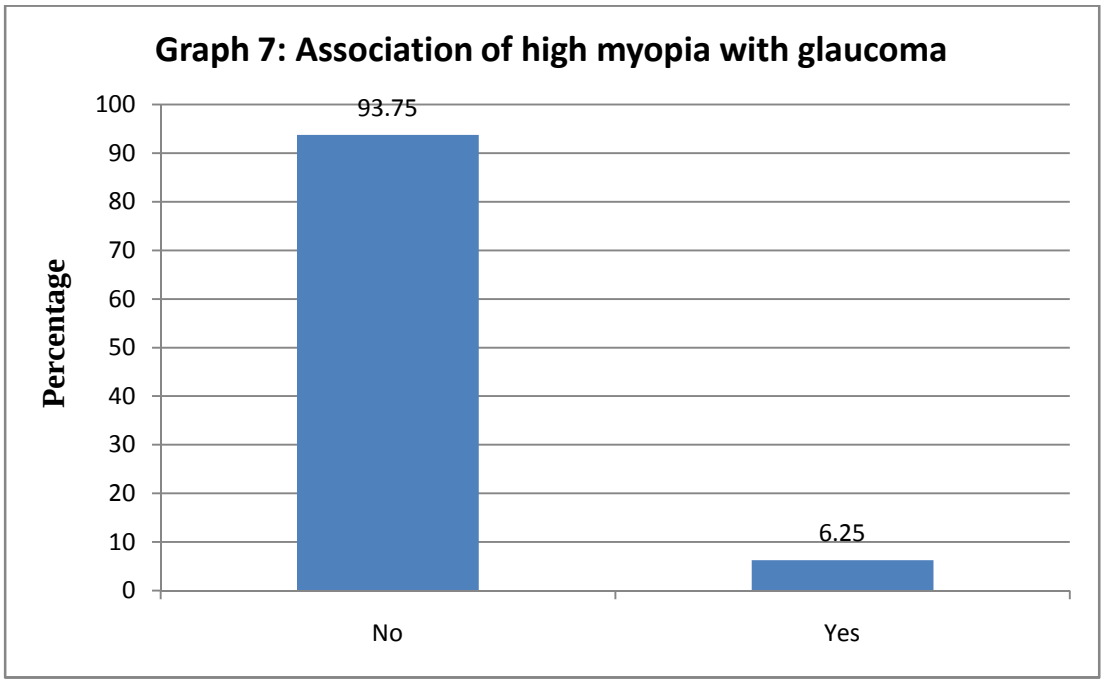
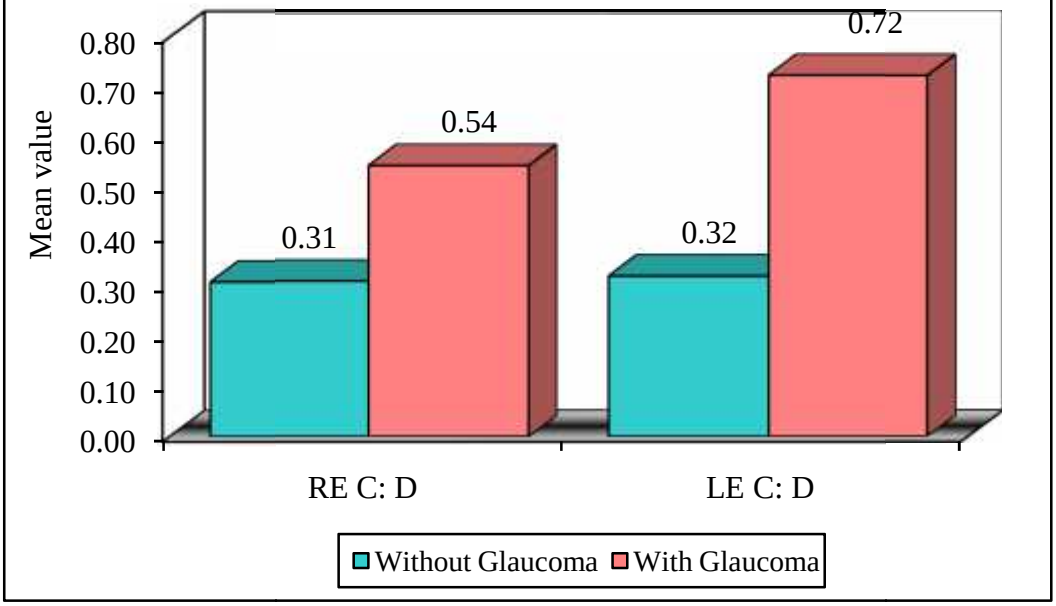


Table 8: Comparison of C: D ratio scores in right eye and left eye among normal individuals and glaucoma patients

Sl No	Ratio	Without Glaucoma		Glaucoma patients		p-value
		Mean	SD	Mean	SD	
1	RE C: D	0.31	0.04	0.54	0.18	0.0001
2	LE C: D	0.32	0.14	0.72	0.18	0.0001

Table 8 shows the comparison of cup to disc ratio of glaucomatous and non-glaucomatous eyes. The mean of the ratio is 0.31 in the RE & 0.32 in the LE in non-glaucomatous eyes. Whereas the mean of C: D ratio in glaucomatous eyes is 0.54 in the RE & 0.72 in the LE. By Mann-Whitney U test, there is significant difference in the distribution of right and left eye C: D over glaucoma.

Graph 8a: Comparison of C: D ratio scores in right eye and left eye among normal individuals and glaucoma patients



Graph 8b: Scatter plot of C: D ratio scores in normal and glaucoma subjects.

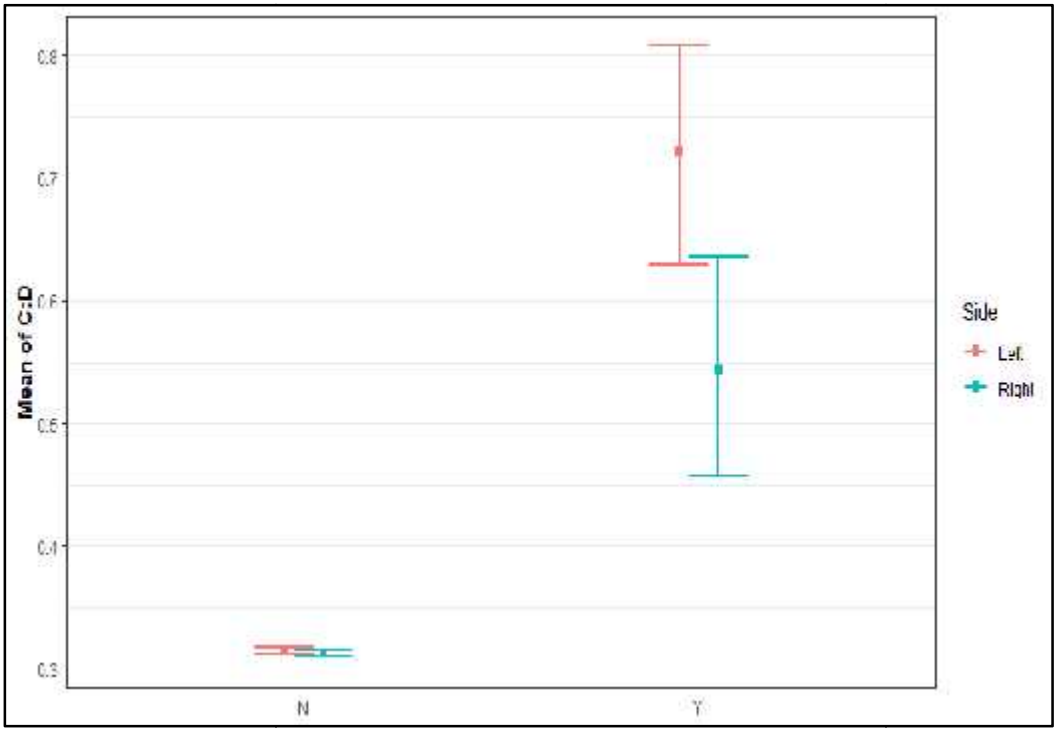
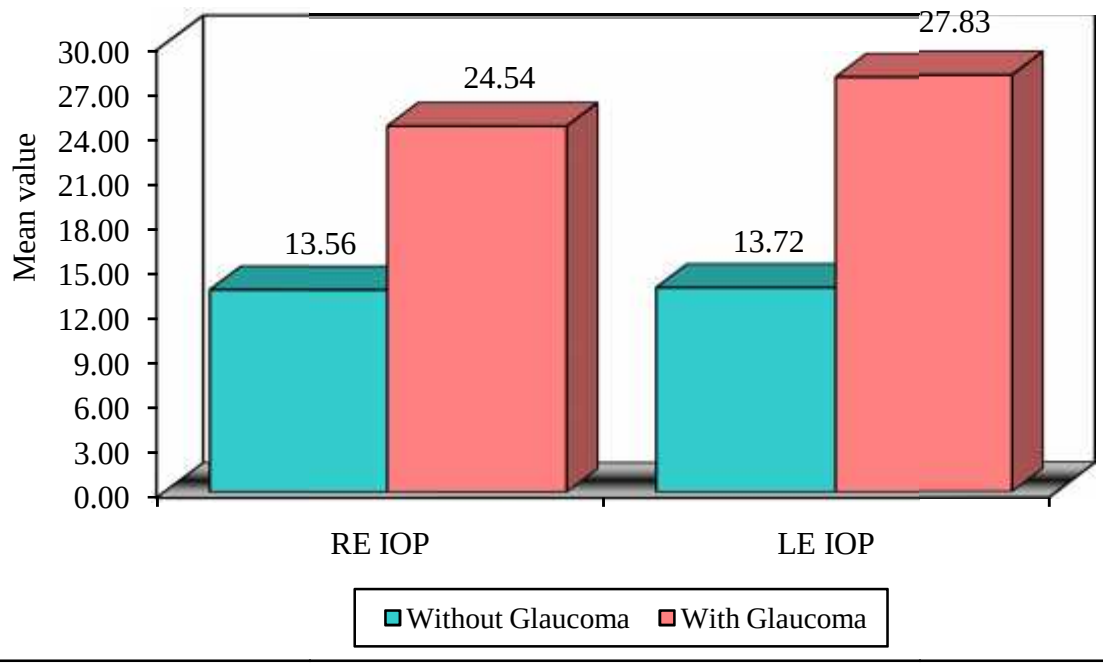


Table 9: Comparison of IOP scores in right eye and left eye among normal individuals and glaucoma patients

Sl No	IOP	Without Glaucoma		Glaucoma patients		p-value
		Mean	SD	Mean	SD	
1	RE IOP	13.56	3.59	24.54	11.78	0.0001*
2	LE IOP	13.72	4.69	27.83	12.70	0.0001*

Table 9 shows the comparison of intra ocular pressure in right eye and left eye in normal and glaucomatous subjects. Subjects without glaucoma had a mean IOP of 13.56 ± 3.59 in right eye and 13.72 ± 4.69 in left eye. Whereas among glaucoma patients, the mean IOP was 24.54 ± 11.78 in right eye and 27.83 ± 12.70 in left eye.

Graph 9a: Comparison of IOP scores in right eye and left eye among normal individuals and glaucoma patients



Graph 9b: scatter plot of IOP in normal and glaucoma subjects.

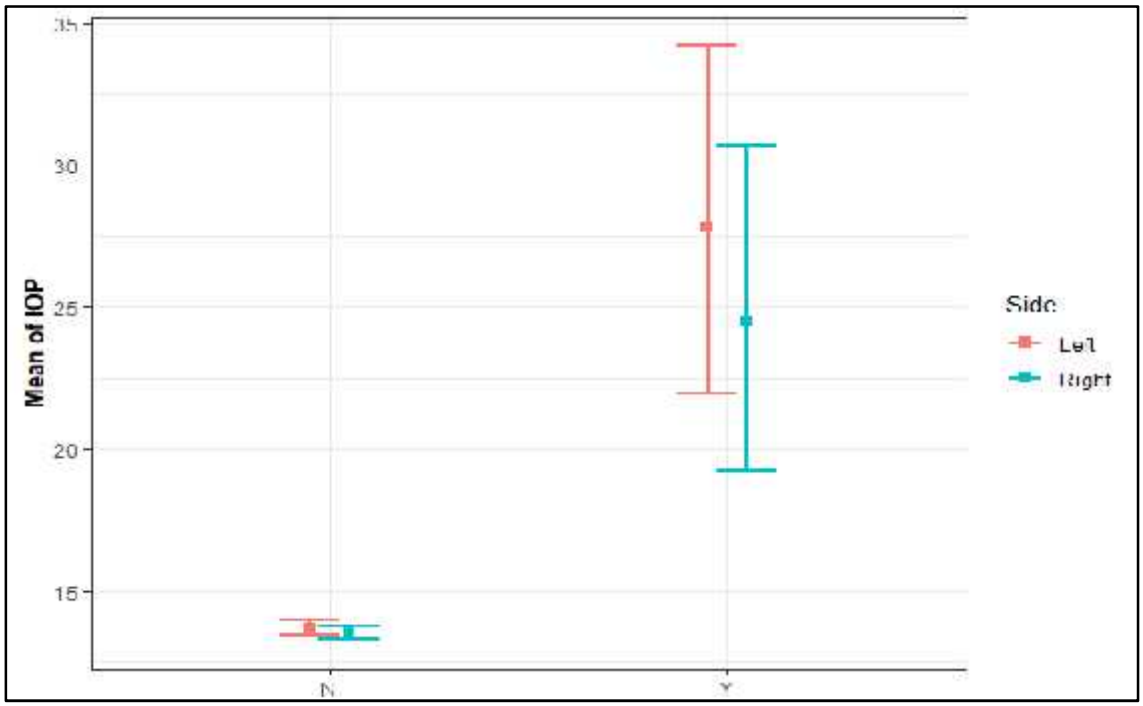
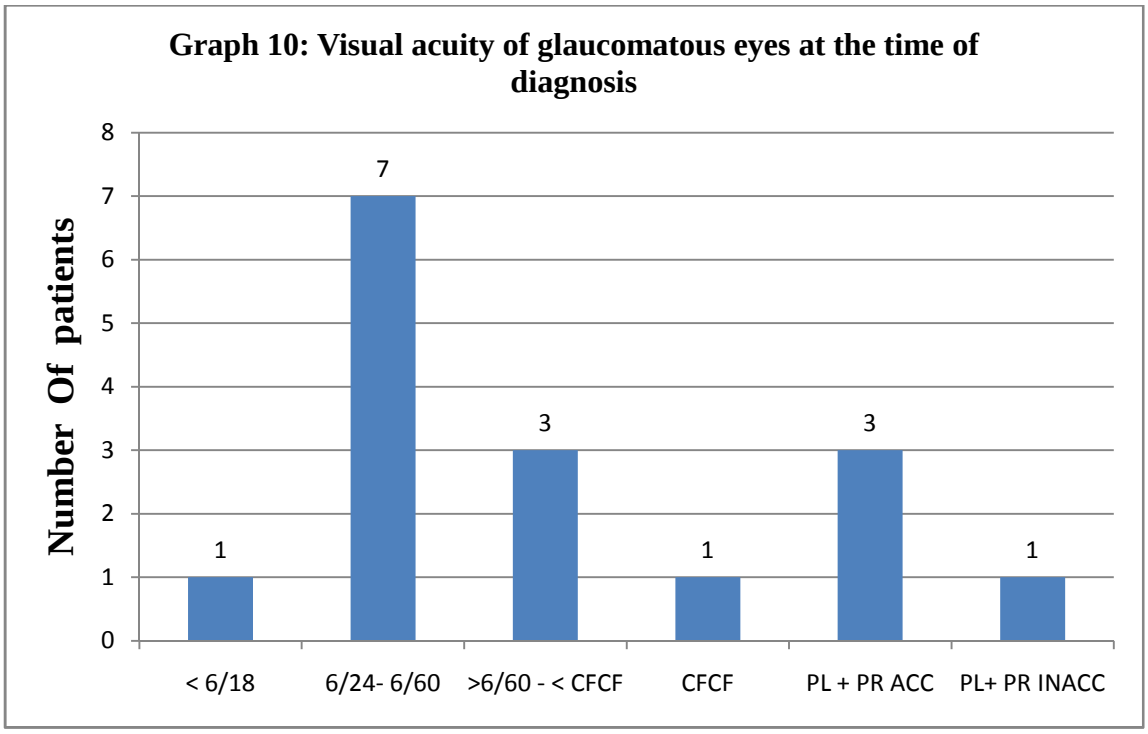


Table 10: Visual acuity of glaucomatous eyes at the time of diagnosis

Sl No	Visual acuity in better eye	No of glaucoma eye
1	< 6/18	1
2	6/24- 6/60	7
3	>6/60 - < CFCF	3
4	CFCF	1
5	PL + PR ACC	3
6	PL+ PR INACC	1
	Total	**16**

Table 10 shows the visual acuity of glaucomatous eyes at the time of diagnosis. 7 out of the total 16 patients had vision in the range of 6/24 – 6/60. 4 patients had only perception of light, out of which one patient had inaccurate projection of light. Blindness is defined as “vision less than 3/60 (CF 3mt)”. Hence 8 (50%) out of the 16 patients had blindness.



Discussion

DISCUSSION

With glaucoma taking the second place among the causes of preventable causes of blindness, meta-analysis of various population studies estimate that the global number of glaucoma patients will increase by 74% by 2040. Hence glaucoma blindness prevention strategies and screening protocols have to be strategically planned based on the prevalence and risk factors.

Prevalence

Out of the 1000 study sample, 16 patients were diagnosed with glaucoma resulting in the prevalence rate of 1.6%.

Comparison Of Various Prevalence Studies.

Studies on Indian population	**Study Population**	**Prevalence**		
		Total	**POAG**	**PACG**
The Andra Pradesh Eye Disease[24]	Rural population of Andra Pradesh	2.3%	1.6%	0.7%
The Aravind Comprehensive Eye Study[25]	Rural population of Tamil Nadu	2.6%	1.7%	0.5%
The Hooghly River Glaucoma Study[26]	Rural population of Eastern India	2.7%	1.45%	1.15%
BangalSurekha V Et.Al[27]	Rural population of Maharastra	7.08%	-	-
Present study	**Rural population of Belgaum**	**1.6%**	**1.4%**	**0.1%**

A cross sectional study in 94 clusters representing rural areas of Andhra Pradesh between 1996 and 2000 shows that among rural population aged > 40yrs the prevalence of POAG is 1.6% and PACG is 0.7%. The diagnostic criteria of glaucoma were similar to our present study.

The reported prevalence of POAG in both the studies is similar; however the prevalence of PACG in the present study is much lower.

A crosssectional study conducted as a part of The Aravind comprehensive eye survey in 50 clusters of representing rural clusters of Tamil Nadu showed that the prevalence of any glaucoma is 2.6% (POAG – 1.7% and PACG – 0.5%).

Though the prevalence of POAG is comparable to the present study, the prevalence of PACG shows much difference.

In another population based cross sectional study from rural base hospital located in Dhobapara in Bakulia village - The Hoogly River Glaucoma study, 28 contiguous villages from the district of Hoogly were included. The prevalence of glaucoma was found to be 2.7% (POAG – 1.45% and PACG – 1.15%).

The POAG prevalence of both the studies are similar, however a wide variation in noted in the prevalence of PACG. The prevalence of secondary glaucoma was 0.1% just like in the present study. The diagnostic criteria of this study were comparable to the present study.

In a study conducted by BangalSurekha V Et.Al[27] in the rural area of Maharastra screened 6860 individuals out of which 486 cases were diagnosed Glaucoma.

The prevalence rate of this study is higher than compared to the rest of the studies conducted in India and to the present study.

Though the prevalence rate of POAG of all the above mentioned studies are comparable; there is a wide variation in the prevalence of PACG. This variation can be attributed to the fact that PACG often presents as an ocular emergency hence rarely presents to a screening camp.

The present study follows method of opportunistic glaucoma screening, whereas the rest of the studies follow the methods of universal glaucoma screening. This can be a contributing factor for lower prevalence rate in this present study.

Age distribution

In the present study a total of 1000 individuals aged more than 40 years were screened for glaucoma. The mean age of all the screened individuals was 61.98±10.14. 46% (460) of the study population belonged to the age group of 60-69years. Minimum number of patients (5.3%, 53 individuals) were noted in the age group consisting of older than 80 years individuals. The prevalence of glaucoma was highest among the age group >80 years.

In the Aravindcomprehensive eye study[25], the maximum individuals were of the age group 40-49 years and minimum individuals in the age group >70 years. The prevalence of glaucoma was highest among the age group of >70 years. Similar results were also seen in The Hooghly River Glaucoma Study[26], The Andra Pradesh eye disease study[24] and the study by BangalSurekha V et.al[27]. Similarly present study reports highest

prevalence among patients aged >80years and almost equal prevalence among rest of the age group.

Gender distribution

The Gender Distributionin our study is423 male and 577 female, with a M: F ratio of 1:1.36. The prevalence of glaucoma is estimated 3.07% among male whereas among females the prevalence is 0.52%. Males are 6.0667 times at higher risk than females for having glaucoma.

Various glaucoma prevalence study on Indian rural population states similar inferences. The Aravindcomprehensive eye study states that Males are more prone to have POAG[25]. BangalSurekha V et.al in their research concluded that the gender difference of patients diagnosed with glaucoma (male 55% & female 45%) was statistically significant[27]. However the Andra Pradesh eye disease study concluded that there was no difference in the prevalence of POAG by gender[24]. The Hooghly River Glaucoma Study[26]too shows no significant of gender as risk factor of glaucoma.

Hypertension

In our study population of 1000, only 202 (20.2%) individuals had hypertension, among which only 4 (1.89%) individuals were diagnosed with glaucoma. No statistical significant was noted between hypertensive individual and non hypertensive individual with regards to glaucoma. Similarly, the Aravindcomprehensive eye study[25] and the Andra Pradesh eye disease study[24] show no significant statistical proof associating hypertension and glaucoma.In contradiction to these studies, the Ocular Hypertension

treatment study[38], the Rotterdam eye study[45] and the study by James M. Tielsch et.al[44] show a positive correlation between hypertension and glaucoma development.

Diabetes Mellitus

In our present study population of 1000, only 106(10.6%) individuals had diabetes mellitus, among whom only 4 (3.77%) individuals were diagnosed with glaucoma. No statistical significant was noted between diabetic individual and non diabetic individual with regards to glaucoma.

The Aravindcomprehensive eye study[25] and The Andra Pradesh eye disease study[24]too show that diabetes mellitus is not a risk factor for glaucoma. The Baltimore Eye Survey concludes that diabetes mellitus is associated with higher intra ocular pressure as compared to non diabetic individuals, however no association with prevalence of glaucoma was noted[71]. The Blue Mountains eye study[72] and The Rotterdam Study[73]proved diabetes in a risk factor for glaucoma.

Migraine

In our study population of 1000, only 1(0.10%) individuals had migraine, among which none were diagnosed with glaucoma. No statistical significant was noted between individual with or without migraine with regards to glaucoma.

Similar results were noted in the Beaver Dam Eye Study, that there is no evidence of a relationship between POAG and migraine headache[74].In the Blue Mountain eye study, the frequency of reporting a past history of typical migraine headache declined with increasing age, with rates of 23.1%, 16.2%, 12.8%, and 10.4% for corresponding age groups. For all age groups combined, there was no significant association between typical migraine headache and POAG[46].

Family History

In our study population of 1000, none of the individuals had positive family history of glaucoma. No statistical significant was noted between individual with or without family history with regards to glaucoma.

The Blue Mountains Eye Study reports that a parent or siblings have 8.6% higher risk of developing glaucoma. A positive family history was reported more frequently in parents (6.4%) than siblings (2.6%)[75]. The Baltimore Eye Survey too establishes a positive correlation between Family history and primary open angle glaucoma[76].

Steroid use

In our study population of 1000, none of the individuals had positive history for chronic steroid use. No statistical significant was noted between individual with or without positive history for chronic steroid use with regards to glaucoma.

The study byMichael W Marcus et all concludes that in the elderly, the use of corticosteroids, in whatever dosage form, is not associated with an higher risk of

glaucoma[77]. The lack of association between the use of steroids and glaucoma is consistent with the results of the population-based Blue Mountains Eye Study[78].

Chronic smoking and alcohol

In our study population of 1000, none of the individuals had positive history for chronic smoking, out of which only one individual was diagnosed with glaucoma. No statistical significant was noted between individual with or without positive history for smoking with regards to glaucoma. Similarly 11 individuals were chronic alcoholics, among whom one was diagnosed with glaucoma.

In consistent to our study The Beaver Dam Eye Study shows no difference in frequency of glaucoma by drinking status or by cigarette-smoking status[47]. In contradiction Wilson et al reported increased relativeodds of glaucoma in current smokers[79].

Myopia

In our study population of 1000, 5 individuals were high myopic, among whom only one individual was diagnosed with glaucoma. No statistical significant was noted between individual with or without high myopia with regards to glaucoma.

Similarly in The Andra Pradesh eye disease study[24]no association was proved between high myopic status and prevalence of glaucoma. However in contradiction, in The Aravindcomprehensive eye study[25]51 myopics (59.3%) were diagnosed with POAG; this establisteda statistically significant association.

Cup to Disc Ratio

All the 1000 sample population underwent both direct and indirect fundus examination for evaluation of optic disc. The vertical cup to disc ratio was noted and compared. The mean of the ratio is 0.31 in the RE and 0.32 in the LE in non glaucomatous eyes. Whereas the mean of C:D ratio in glaucomatous eyes was 0.54 in the RE and 0.72 in the LE.

In The Aravindcomprehensive eye study[25], the median vertical C:D ratio was 0.3 ± 0.16 & 0.80 ± 0.11 amng thosewithout and with glaucoma respectively.In The Andra Pradesh eye disease study[24], the mean of C:D ratio in glaucomatous eyes was 0.75. These results are comparable to our study.

Intra Ocular Pressure

All the 1000 sample population underwent calculation of Intra Ocular Pressure by schiotz tonometer. Subjects without glaucoma had a mean IOP of 13.56 ± 3.59 in right eye and 13.72 ± 4.69 in left eye. Whereas among glaucoma patients, the mean IOP was 24.54 ± 11.78 in right eye and 27.83 ± 12.70 in left eye. In The Andra Pradesh eye disease study[24], the mean IOP among POAG patients was 16.7 ± 5.4mmHg and 23.5 ± 13.2mmHg among PACG., the mean IOP was higher among those with POAG than subjects without glaucoma for all age groups ($P < 0.01$). Around 33% of patients had IOP > 31mmhg and 25% of them had IOP between 27-31mmhg. 45 (52.3%) of the 86 subjects diagnosed with POAG had IOP within the normal range (< 21 mmHg). The mean IOP of our study was comparable to these two studies.

BLINDNESS

Blindness owing to glaucoma was noted in 50% of the diagnosed glaucoma patients including 4 patients with complete glaucomatous optic atropy.

In The Andra Pradesh eye disease study[24],blindness owing to POAG and PACG was 11.1% and 20% respectively (total 31.1%). In The Aravindcomprehensive eye study[25], blindness prevalence owing to POAG was 20.9%. The results of the present study show substancially higher blindness prevalence rates. These higher rates may be because of the lack of awareness among the rural population.

Conclusion

CONCLUSION

The present study was conducted by the Department Of Ophthalmology, Dr. Prabakhar Kore Hospital and Medical Research Centre, Belgaum on 1000 individuals aged > 40 years and from rural areas of Belgaum, presenting to the screening camps conducted by Department Of Ophthalmology, Dr. Prabakhar Kore Hospital and Medical Research Centre, Belagavi between January 2019 to December 2019. Out of the 1000 individuals screened, 16 patients were diagnosed with glaucoma.

The prevalence of glaucoma among rural population of Belagavi is 1.6%. The prevalence of POAG is 1.4% (including 0.4% of NTG) and PACG is 0.1%. The prevalence of Pseudoexfoliative glaucoma is 0.1%.

The study showed that males were at higher risk of glaucoma than females. Age played no influence on the prevalence of glaucoma.Systemic diseases like hypertension, diabetes mellitus and migrane had no association with prevalence of glaucoma. Family history had no predilection for developing glaucoma. High myopia is not a risk factor for glaucoma. Chronic use of steroids, cigarette smoking and alcoholism play no role in glaucoma prevalence.

Despite effective and advances medical and surgical therapies being available to reduce the rate of visual loss owing to glaucoma, there is a huge lag in early detection of the disease. Increasing the awareness of comprehensive eye screening beyond 40 years of age can help early detection and treatment, thus preventing burden of blindness. In view of the low prevalence rate, universal screening may not be feasible, hence opportunistic screening should be promoted.

Summary

SUMMARY

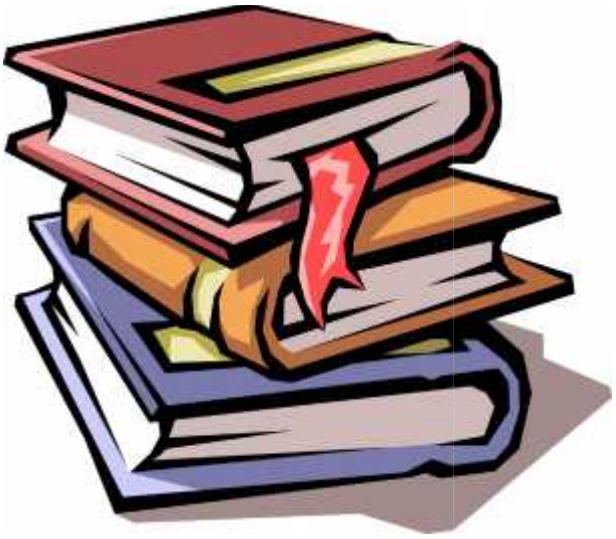
Glaucoma causes gradual loss of vision ultimately leading to total blindness. Majority of the patients present to an ophthalmologist with total vision loss secondary to glaucomatous optic atrophy. This bears a socio economic impact on the person in terms of loss of career, inability to perform day to day activities and higher risk of trauma. Vision loss due to glaucoma is avoidable with early detection and treatment.

This study estimates the prevalence of glaucoma among the rural population of Belgaum aged > 40 years and to assess the risk factors of glaucoma.

- The prevalence of glaucoma is 1.6%. The prevalence of POAG is 1.4% (including 0.4% of NTG) and PACG is 0.1%. The prevalence of Pseudoexfoliative glaucoma is 0.1%.
- The study showed that males were at higher risk of glaucoma than females.
- Age played no influence on the prevalence of glaucoma.
- Systemic diseases like hypertension, diabetes mellitus and migrane had no association with prevalence of glaucoma.
- Family history had no predeliction for developing glaucoma.
- High myopia is not a risk factor for glaucoma.
- Chronic use of steroids, cigarette smoking and alcoholism play no role in glaucoma prevalence.
- Blindness owing to glaucomatous optic nerve injury was noted in 50% of the patients.

Glaucoma should be ruled out as part of every routine eye examination, since symptoms may not be present. Differentiating open from closed angle glaucoma is necessary from a therapeutic point. Once the correct diagnosis of open or closed angle glaucoma has been made, appropriate decision can be taken regarding medications, laser, and microsurgery. This approach can prevent vision loss and disability from sight threatening glaucoma.

Bibliography



BIBLIOGRAPHY

1. Pascolini D, Mariotti SP. Global estimates of visual impairment: 2010. Br J Ophthalmol. 2012 May 1;96(5):614–8.

2. Tham Y-C, Li X, Wong TY, Quigley HA, Aung T, Cheng C-Y. Global Prevalence of Glaucoma and Projections of Glaucoma Burden through 2040. Ophthalmology. 2014 Nov;121(11):2081–90.

3. Kapetanakis VV, Chan MPY, Foster PJ, Cook DG, Owen CG, Rudnicka AR. Global variations and time trends in the prevalence of primary open angle glaucoma (POAG): a systematic review and meta-analysis. Br J Ophthalmol. 2016 Jan;100(1):86–93.

4. World Health Organization. Visual impairment and blindness: Fact Sheet october 2019.

5. Vashist P, Senjam DSS, Gupta DV, Gupta DN, Wadhwani DM, Shukla DP, et al. DATA ANALYSIS AND REPORT WRITING. :20.

6. Doshi V, Ying-Lai M, Azen SP, Varma R. Sociodemographic, Family History, and Lifestyle Risk Factors for Open-angle Glaucoma and Ocular Hypertension. Ophthalmology. 2008 Apr;115(4):639-647.e2.

7. Riva I, Legramandi L, Katsanos A, Oddone F, Rulli E, Roberti G, et al. Influence of Sociodemographic Factors on Disease Characteristics and Vision-related Quality of Life in Primary Open-angle Glaucoma Patients: The Italian Primary Open Angle Glaucoma Study (IPOAGS). J Glaucoma. 2018 Sep;27(9):776–84.

8. Topouzis F, Coleman AL, Harris A, Koskosas A, Founti P, Gong G, et al. Factors Associated with Undiagnosed Open-Angle Glaucoma: The Thessaloniki Eye Study. Am J Ophthalmol. 2008 Feb;145(2):327-335.e1.

9. Heijl A, Leske MC, Bengtsson B, Hyman L, Bengtsson B, Hussein M. Reduction of Intraocular Pressure and Glaucoma Progression. ARCH OPHTHALMOL. 2002;120:12.

10. Friedman DS, Freeman E, Munoz B, Jampel HD, West SK. Glaucoma and mobility performance: the Salisbury Eye Evaluation Project. Ophthalmology. 2007 Dec;114(12):2232–7.

11. Freeman EE, Mun~oz B, Rubin G, West SK. Visual Field Loss Increases the Risk of Falls in Older Adults: The Salisbury Eye Evaluation. Investig Opthalmology Vis Sci. 2007 Oct 1;48(10):4445.

12. West SK. How Does Visual Impairment Affect Performance on Tasks of Everyday Life?: The SEE Project. Arch Ophthalmol. 2002 Jun 1;120(6):774.

13. Szlyk JP, Mahler CL, Seiple W, Edward DP, Wilensky JT. Driving Performance of Glaucoma Patients Correlates With Peripheral Visual Field Loss. J Glaucoma. 2005;14(2):6.

14. Prum BE, Rosenberg LF, Gedde SJ, Mansberger SL, Stein JD, Moroi SE, et al. Primary Open-Angle Glaucoma Preferred Practice Pattern® Guidelines. Ophthalmology. 2016 Jan;123(1):P41–111.

15. South East Asia Glaucoma Interest Group, Asian-Oceanic Glaucoma Society. Asia Pacific glaucoma guidelines. Sydney: South East Asia Glaucoma Interest Group; 2004.

16. European Glaucoma Society Terminology and Guidelines for Glaucoma, 4th Edition - Part 1Supported by the EGS Foundation. Br J Ophthalmol. 2017 Apr;101(4):1–72.

17. Prevention of Blindness from Diabetes Mellitus-with-cover-small.pdf [Internet]. [cited 2020 Mar 17]. Available from: https://www.who.int/blindness/Prevention%20of%20Blindness%20from%20Diabetes%20Mellitus-with-cover-small.pdf

18. Stamper RL, Lieberman MF, Drake MV, Becker B, Shaffer RN. Becker-Shaffer's Diagnosis and therapy of the Glaucoma. 8th ed. 100–12 p.

19. Frezzotti R. The glaucoma mystery from ancient times to the 21st century. The glaucoma mystery: ancient concepts. Acta Ophthalmol Scand. 2000 Dec;78(S232):14–8.

20. Barnshaw HD. Great Names in the Early History of Glaucoma: Int Ophthalmol Clin. 1979;19(1):3–7.

21. Budenz DL, Barton K, Whiteside-de Vos J, Schiffman J, Bandi J, Nolan W, et al. Prevalence of Glaucoma in an Urban West African Population: The Tema Eye Survey. JAMA Ophthalmol. 2013 May 1;131(5):651.

22. Foster PJ. Glaucoma in Mongolia: A Population-Based Survey in Hövsgöl Province, Northern Mongolia. Arch Ophthalmol. 1996 Oct 1;114(10):1235.

23. Cho H, Kee C. Population-based glaucoma prevalence studies in Asians. Surv Ophthalmol. 2014 Jul;59(4):434–47.

24. Garudadri C, Senthil S, Khanna RC, Sannapaneni K, Rao HBL. Prevalence and Risk Factors for Primary Glaucomas in Adult Urban and Rural Populations in the Andhra Pradesh Eye Disease Study. Ophthalmology. 2010 Jul;117(7):1352–9.

25. Ramakrishnan R, Nirmalan PK, Krishnadas R, Thulasiraj RD, Tielsch JM, Katz J, et al. Glaucoma in a rural population of southern India. Ophthalmology. 2003 Aug;110(8):1484–90.

26. Paul C, Sengupta S, Choudhury S, Banerjee S, Sleath B. Prevalence of glaucoma in Eastern India: The Hooghly River Glaucoma Study. Indian J Ophthalmol. 2016;64(8):578.

27. Bangal SV, K. SV, Misra NS. BLINDNESS PREVENTION THROUGH SCREENING FOR DIABETIC RETINOPATHY AND GLAUCOMA IN RURAL POPULATION – A NOVEL APPROACH. Int J Biomed Res. 2012 Feb 10;3(1):46–51.

28. Grant WM. Further Studies on Facility of Flow Through the Trabecular Meshwork. Arch Ophthalmol. 1958 Oct 1;60(4):523–33.

29. Southren AL, Gordon GG, Munnongi PR, Vittek J, Schwartz J, Monder C, et al. Altered Cortisol Metabolism in Cells Cultured from Trabecular Meshwork Specimens Obtained from Patients with Primary Open-angle Glaucoma. (10):5.

30. Stamper RL, Lieberman MF, Drake MV. Becker-Shaffer's Diagnosis and therapy of the Glaucoma. 8th ed. 244–5 p.

31. Stamper RL, Lieberman MF, Drake MV. Becker-Shaffer's Diagnosis and therapy of the Glaucoma. 245 p.

32. Gottanka J, Kuhlmann A, Scholz M, Johnson DH, Lu¨tjen-Drecoll E. Pathophysiologic Changes in the Optic Nerves of Eyes with Primary Open Angle and Pseudoexfoliation Glaucoma. Investig Opthalmology Vis Sci. 2005 Nov 1;46(11):4170.

33. Flammer J, Orgül S, Costa VP, Orzalesi N, Krieglstein GK, Serra LM, et al. The impact of ocular blood flow in glaucoma. Prog Retin Eye Res. 2002 Jul;21(4):359–93.

34. Cartwright MJ, Anderson DR. Correlation of Asymmetric Damage With Asymmetric Intraocular Pressure in Normal-Tension Glaucoma (Low-Tension Glaucoma). Arch Ophthalmol. 1988 Jul 1;106(7):898–900.

35. Keel S, Xie J, Foreman J, Lee PY, Alwan M, Fahy ET, et al. Prevalence of glaucoma in the Australian National Eye Health Survey. Br J Ophthalmol. 2019 Feb;103(2):191–5.

36. Leske MC. The Barbados Eye Study: Prevalence of Open Angle Glaucoma. Arch Ophthalmol. 1994 Jun 1;112(6):821.

37. Mitchell P, Smith W, Attebo K, Healey PR. Prevalence of Open-angle Glaucoma in Australia. Ophthalmology. 1996 Oct;103(10):1661–9.

38. Gordon MO. The Ocular Hypertension Treatment Study: Baseline Factors That Predict the Onset of Primary Open-Angle Glaucoma. Arch Ophthalmol. 2002 Jun 1;120(6):714.

39. Kahn HA. Alternative Definitions of Open-Angle Glaucoma: Effect on Prevalence and Associations in the Framingham Eye Study. Arch Ophthalmol. 1980 Dec 1;98(12):2172.

40. Dielemans I, Vingerling JR, Wolfs RCW, Hofman A, Grobbee DE, de Jong PTVM. The Prevalence of Primary Open-angle Glaucoma in a Population-based Study in The Netherlands. Ophthalmology. 1994 Nov;101(11):1851–5.

41. Sommer A. Relationship Between Intraocular Pressure and Primary Open Angle Glaucoma Among White and Black Americans: The Baltimore Eye Survey. Arch Ophthalmol. 1991 Aug 1;109(8):1090.

42. Rosenthal AR, Perkins ES. Family studies in glaucoma. Br J Ophthalmol. 1985 Sep 1;69(9):664–7.

43. Bonovas S, Peponis V, Filioussi K. Diabetes mellitus as a risk factor for primary open-angle glaucoma: a meta-analysis. Diabet Med. 2004 Jun;21(6):609–14.

44. Tielsch JM. Hypertension, Perfusion Pressure, and Primary Open-angle Glaucoma: A Population-Based Assessment. Arch Ophthalmol. 1995 Feb 1;113(2):216.

45. Dielemans I, Vingerling JR, Algra D, Hofman A, Grobbee DE, de Jong PTVM. Primary Open-angle Glaucoma, Intraocular Pressure, and Systemic Blood Pressure in the General Elderly Population. Ophthalmology. 1995 Jan;102(1):54–60.

46. Wang JJ, Mitchell P, Smith W. Is There an Association between Migraine Headache and Open-angle Glaucoma? Ophthalmology. 1997 Oct;104(10):1714–9.

47. Klein BEK, Klein R, Ritter LL. Relationship of Drinking Alcohol and Smoking to Prevalence of Open-angle Glaucoma. Ophthalmology. 1993 Nov;100(11):1609–13.

48. Lee AJ, Rochtchina E, Wang JJ, Healey PR, Mitchell P. Does Smoking Affect Intraocular Pressure? Findings from the Blue Mountains Eye Study: J Glaucoma. 2003 Jun;12(3):209–12.

49. Choplin NT, Lundy DC. Atlas of glaucoma [Internet]. New York: CRC Press; 2007 [cited 2020 Mar 23]. Available from: http://site.ebrary.com/id/10313913

50. European Glaucoma Society, editor. Terminology and guidelines for glaucoma. 4th ed. Savona: PubliComm; 2014. 195 p.

51. Leighton DA, Phillips CI. Systemic blood pressure in open-angle glaucoma, low tension glaucoma, and the normal eye. Br J Ophthalmol. 1972 Jun 1;56(6):447–53.

52. Yamagami J, Araie M, Aihara M, Yamamoto S. Diurnal Variation in Intraocular Pressure of Normal-tension Glaucoma Eyes. Ophthalmology. 1993 May;100(5):643–50.

53. Hollows FC, Graham PA. Intra-ocular pressure, glaucoma, and glaucoma suspects in a defined population. Br J Ophthalmol. 1966 Oct 1;50(10):570–86.

54. Kitazawa Y. Untreated Ocular Hypertension: A Long-Term Prospective Study. Arch Ophthalmol. 1977 Jul 1;95(7):1180.

55. Abedin S, Simmons RJ, Grant WM. Progressive Low-tension Glaucoma. Ophthalmology. 1982 Jan;89(1):1–6.

56. Grodum K, Heijl A, Bengtsson B. A comparison of glaucoma patients identified through mass screening and in routine clinical practice. Acta Ophthalmol Scand. 2002 Dec;80(6):627–31.

57. He M, Huang W, Friedman DS, Wu C, Zheng Y, Foster PJ. Slit Lamp–Simulated Oblique Flashlight Test in the Detection of Narrow Angles in Chinese Eyes: The Liwan Eye Study. Investig Opthalmology Vis Sci. 2007 Dec 1;48(12):5459.

58. Pollack IP. Glaucoma screening. Indian J Ophthalmol. 1966 Jan 1;14(1):1.

59. Kitazawa Y, Shirato S, Yamamoto T. Optic Disc Hemorrhage in Low-tension Glaucoma. Ophthalmology. 1986 Jun;93(6):853–7.

60. Tuulonen A, Airaksinen PJ. Initial Glaucomatous Optic Disk and Retinal Nerve Fiber Layer Abnormalities and Their Progression. Am J Ophthalmol. 1991 Apr;111(4):485–90.

61. Eid TM, Spaeth GL, Bitterman A, Steinmann WC. Rate and amount of visual loss in 102 patients with Open-Angle glaucoma followed up for at least 15 years. Ophthalmology. 2003 May;110(5):900–7.

62. Drance SM. Diffuse Visual Field Loss in Open-angle Glaucoma. Ophthalmology. 1991 Oct;98(10):1533–8.

63. Weber J, Schultze T, Ulrich H. The visual field in advanced glaucoma. Int Ophthalmol. 1989 Jan;13(1–2):47–50.

64. Hart WM, Becker B. The Onset and Evolution of Glaucomatous Visual Field Defects. Ophthalmology. 1982 Mar;89(3):268–79.

65. Friedenwald JS. Contribution to the Theory and Practice of Tonometry*. Am J Ophthalmol. 1937 Oct;20(10):985–1024.

66. Stamper RL, Lieberman MF, Drake MV, Becker B, Shaffer RN. Becker-Shaffer's diagnosis and therapy of the glaucomas. 8th ed. Edinburgh: Mosby, Elsevier; 2009. 53–55 p.

67. Allingham, R. R., & Shields, M. B. (2005). Shields' textbook of glaucoma. Philadelphia: Lippincott Williams & Wilkins.

68. Stamper RL, Lieberman MF, Drake MV, Becker B, Shaffer RN. Becker-Shaffer's diagnosis and therapy of the glaucomas. 8th ed. Edinburgh: Mosby, Elsevier; 2009. 73 p.

69. Gonioscopic Grading Systems [Internet]. American Academy of Ophthalmology. 2017 [cited 2020 Apr 2]. Available from: https://www.aao.org/disease-review/gonioscopic-grading-systems

70. Census of India - Census Terms [Internet]. [cited 2020 Aug 26]. Available from: https://censusindia.gov.in/data_products/library/indian_perceptive_link/census_terms_link/censusterms.html

71. Tielsch JM, Katz J, Quigley HA, Javitt JC, Sommer A. Diabetes, Intraocular Pressure, and Primary Open-angle Glaucoma in the Baltimore Eye Survey. Ophthalmology. 1995 Jan;102(1):48–53.

72. Mitchell P, Smith W, Chey T, Healey PR. Open-angle Glaucoma and Diabetes. Ophthalmology. 1997 Apr;104(4):712–8.

73. Dielemans I, de Jong PTVM, Stolk R, Vingerling JR, Grobbee DE, Hofman A. Primary Open-angle Glaucoma, Intraocular Pressure, and Diabetes Mellitus in the General Elderly Population. Ophthalmology. 1996 Aug;103(8):1271–5.

74. Klein BEK, Klein R, Meuer SM, Goetz LA. Migraine Headache and Its Association With Open-Angle Glaucoma: The Beaver Dam Eye Study. :4.

75. Mitchell P, Rochtchina E, Lee AJ, Wang JJ. Bias in self-reported family history and relationship to glaucoma: The Blue Mountains Eye Study. Ophthalmic Epidemiol. 2002 Jan;9(5):333–45.

76. Tielsch JM. Family History and Risk of Primary Open Angle Glaucoma: The Baltimore Eye Survey. Arch Ophthalmol. 1994 Jan 1;112(1):69.

77. Marcus MW, Müskens RPHM, Ramdas WD, Wolfs RCW, De Jong PTVM, Vingerling JR, et al. Corticosteroids and Open-Angle Glaucoma in the Elderly: A Population-Based Cohort Study. Drugs Aging. 2012 Dec;29(12):963–70.

78. Mitchell P, Cumming RG, Mackey DA. Inhaled corticosteroids, family history, and risk of glaucoma. Ophthalmology. 1999 Dec;106(12):2301–6.

79. Wilson MR, Hertzmark E, Walker AM, Childs-Shaw K, Epstein DL. A Case-Control Study of Risk Factors in Open Angle Glaucoma. Arch Ophthalmol. 1987 Aug 1;105(8):1066–71.

Annexure-I

ANNEXURE - I –

ETHICAL CLEARANCE CERTIFICATE

K.L.E. ACADEMY OF HIGHER EDUCATION AND RESEARCH
(Deemed – to- be- University)
Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category 'A' by MHRD (GoI)
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu
Phone: (+ 91-(0)831 Office : 2472550
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 70 **Date: 24/11/2018**

To.
REG. NO. BK0118002
PG student in Ophthalmology,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"ASSESSMENT OF PREVALENCE AND RISK FACTORS OF GLAUCOMA IN RURAL POPULATION OF ABOVE 40 YEARS OF BELAGAVI DISTRICT – A ONE YEAR CROSS SECTIONAL STUDY",** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Arathi Darshan)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Roopa M Bellad)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

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Annexure-II

ANNEXURE - II –

INFORMED CONSENT STUDY ID NO:

TITLE OF THE STUDY : "ASSESSMENT OF PREVALENCE AND RISK FACTORS OF GLAUCOMA IN RURAL POPULATION OF ABOVE 40 YEARS OF BELAGAVI DISTRICT – A ONE YEAR CROSS SECTIONAL STUDY"

PRINCIPAL INVESTIGATOR: REG. NO. BK0118002

GUIDE: Dr. _____

INTRODUCTION AND PURPOSE:

This study is designed to study the prevalence of glaucoma among above 40year age group in the rural population and to study the associated risk factors. Better awareness of this, will help in identifying the risk factors, and to provide treatment to the underprivileged rural areas.

PROCEDURE:

I request you to kindly participate in the study titled **"ASSESSMENT OF PREVALENCE AND RISK FACTORS OF GLAUCOMA IN RURAL POPULATION OF ABOVE 40 YEARS OF BELAGAVI DISTRICT – A ONE YEAR CROSS SECTIONAL STUDY".** If youagree to participate in the study please provide the details pertaining to the study. We will check visual acuity, anterior segment, optic disc changes and intraocular pressure. In case of suspicion of glaucoma based on iop values and optic disc changes, bjerrum‟s charting and visual fields will be assessed.

BENEFITS: Results will help to study prevalence and risk factors of glaucoma in individuals.

RISKS: No proven side effects

ALTERNATIVES:

If patient is not willing to take part in the study, his / her treatment or any other further investigations the patient wants to undergo, in future, in KLE will not be affected by his/ her decision.

VOLUNTARY PARTICIPATION/WITHDRAWAL:

Taking part in this study is voluntary. I may choose not to take part in this study, or if I decide to take part I can later change my mind and withdraw from the study. My decision will not change the present or future health care or other services that I receive. The study doctor or the sponsor may stop my participation in this study. I will tell of any important new findings that may change my willingness to continue to take part. If I choose not to take part in the study I will receive the standard treatment for patients with my condition.

COSTS: NIL

COMPENSATION: In the event that I become injured as a result of taking part in this study, treatment will be offered to me. No reimbursement, compensation or free medical care is given.

CONFIDENTIALITY:

All information collected about me during the course of the study will be kept confidential to the extent permitted by the law. The code numbers will identify me in this research record. Information from this study may be published but my identity will be confidential in any publication.

CONSENT TO PARTICIPATE IN RESEARCH STUDY

I voluntarily agree to take part in this study by signing on the line below. I may withdraw at any time. I am not giving up any of my legal rights by signing this form. My signature below indicated that I have read this entire consent form or it has been read to me, and has been explained to me in my vernacular language and had all my questions answered. I will be given a copy of this consent form.

Signature /Left Thumb print of the Participant or legally authorized representative.

Participant‟sName : ……

Signature/ Left Thumb impression: ……..…….

Name of the legally authorized representative: …….

Signature/ Left Thumb impression: ……...…….

Witness‟s Name: ……..…….

Signature/ Left Thumb impression: ……

Investigators name and Signature: ……

Date and Place: ……...

in this research record. Information from this study may be published but my identity will be confidential in any publication.

QUESTION:

If any enquiries in the future or in case of research related injury illness, you may contact following person.

1) PRINCIPAL INVESTIGATOR: **REG. NO. BK0118002**

Post graduate student,

Department of Ophthalmology,

J N Medical College, Belagavi.

2) GUIDE: **DR: _____**

Professor,

Department of Ophthalmology,

J N Medical College,

KAHER, Belagavi.

Even if u have any queries in future, you may contact following person

3) **Dr.ROOPA BELLAD M.D.DCH**,

Professor of Pediatrics,

Chairman of JNMC Institutional Ethics

Committee on Human Subjects Research,

J N Medical College, Belagavi.

Annexure-III

PROFORMA

PATIENTS ID NO:_____ DATE OF EXAMINATION:_____

NAME:_____AGE: ___ Years

SEX: F M

ADDRESS:_____

HAS INFORMED CONSENT BEEN GIVEN? YES NO

IMPRESSION

CHIEF COMPLAINTS:

	YES	NO	DURATION(DAYS/MONTHS/YEARS)
DIMINUTION OF VISION			
	Gradual / Sudden		Progressive / Static
HEADACHE			
REDNESS			
WATERING			
BLINDSPOTS			

PAST HISTORY:

	YES	NO	REMARKS
OCULAR TRAUMA			
OCULAR SURGERY			
			DURATION(DAYS/MONTHS/YEARS)
HTN			
DM			
MIGRANE			
ANY OTHER MEDICAL DISORDERS			

FAMILY HISTORY:

H/O blindness among any family member yes no

Sl no	Relation	Age of onset of blindness	Nature of blindness	Treatment history

PERSONAL HISTORY:

HABIT	YES	NO	DURATION (MONTHS/YEAR)	FREQUENCY (PER DAY)
SMOKING				
ALCOHOL				

DRUG HISTORY:

H/O any regular drug intake: YES NO

h/o any steroid use: yes no if yes, systemic topical

Name of the drug: 1] _____ Duration: months/years

OCULAR EXAMINATION

Visual Acuity:

	RE	LE
DISTANT		
PINHOLE		

Adnexa (1- Normal; 2-Abnormal)		
Sclera (1- Normal; 2- Congested)		
Conjunctiva (1-normal; 2-conjunctival congestion; 3-ciliary congestion; 4-chemosis)		
Cornea (1- normal; 2-opacity; 3-vascularisation)		
Anterior chamber (1- normal depth; 2-shallow; 3-deep)		
Iris (1-normal colour& pattern; 2-Abnormal)		
Pupil: Shape- 1- Round & Regular; 2-Abnormal Reaction: 1- reactive, 2- non reactive, 3- RAPD		
Lens Cataract - (1) , PCIOL - (2) PCO - 3 Cataract if present- 1.immature 2.mature 3. hyper mature		

POSTERIOR SEGMENT:

FUNDUS	RE	LE
GLOW		
MEDIA		
DISC		
C:D RATIO		
BLOODVESSELS		
BACKGROUND		
MACULA		

IS THE EYE HIGH MYOPIC,

RE- YES NO RETINOSCOPY VALUE

LE- YES NO RETINOSCOPY VALUE

IOP MEASUREMENT: (by schiotz tonometer)

Time when iop was measured: _____

RIGHT EYE: _____ MM/HG LEFT EYE: _____ MM/HG

RBS = MG/DL BP = MMHG

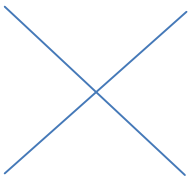
SIGNATURE OF INVESTIGATOR SIGNATURE OF GUIDE

[DR.MANJUSHREE K S] [DR. REKHA B.K]

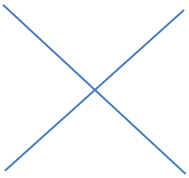
For patients with suspicion of glaucoma based on IOP and optic disc evaluation,

GONIOSCOPY

OD



OS



VISUAL FIELDS

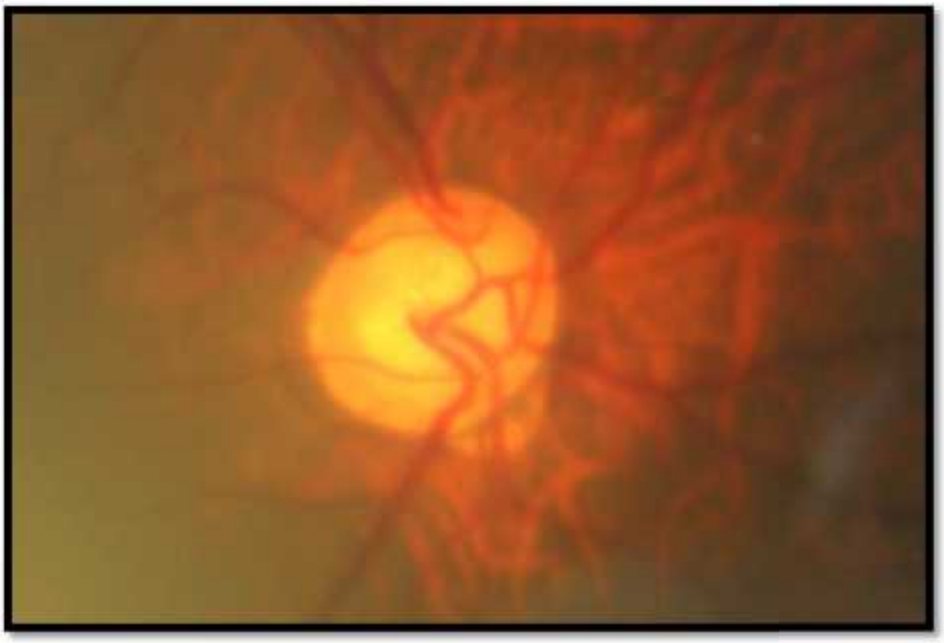
DIURNAL VARIATION(if needed)

OD						
OS						

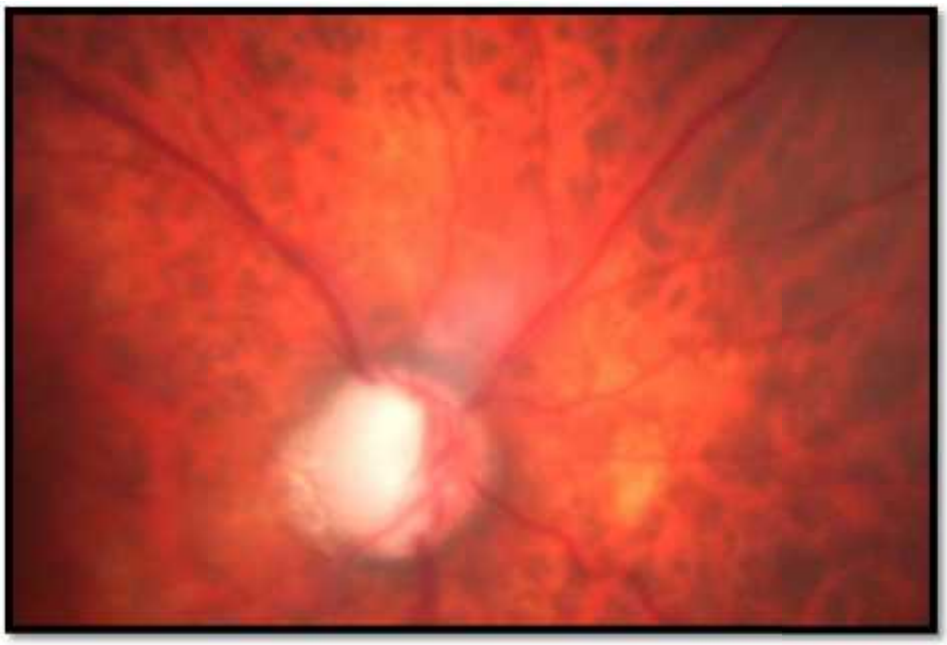
FINAL DIAGNOSIS:

Annexure-IV

PHOTOGRAPHS

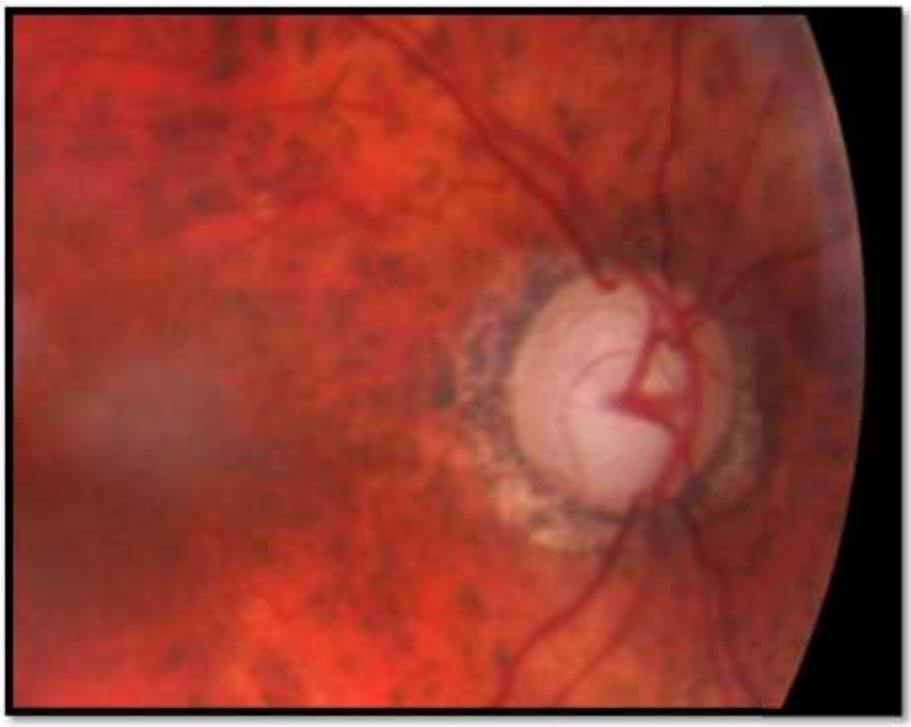


Photograph 2: Colour fundus photograph showing inferior notching of neuroretinal rim with laminar dot sign.

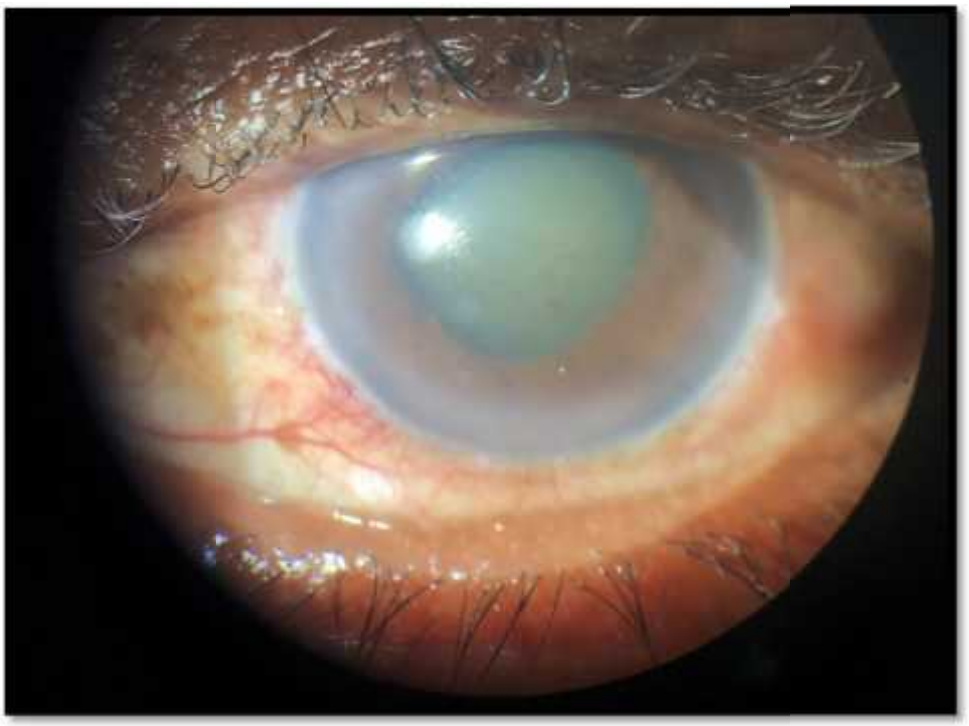


Photograph 3: Colour fundus photograph showing total optic atrophy secondary to glaucoma with baring of retinal vessels.

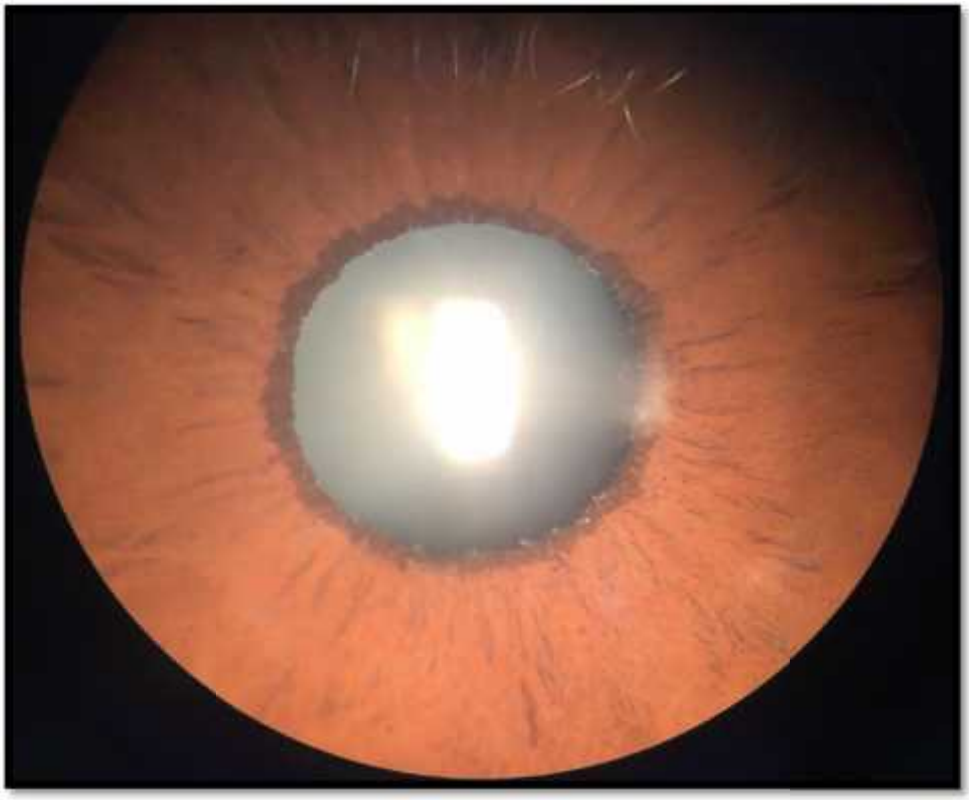
Photograph 4: Colour fundus photography of the optic disc showing 0.9 cutting, nasal displacement of retinal vessels and bayonetting sign.



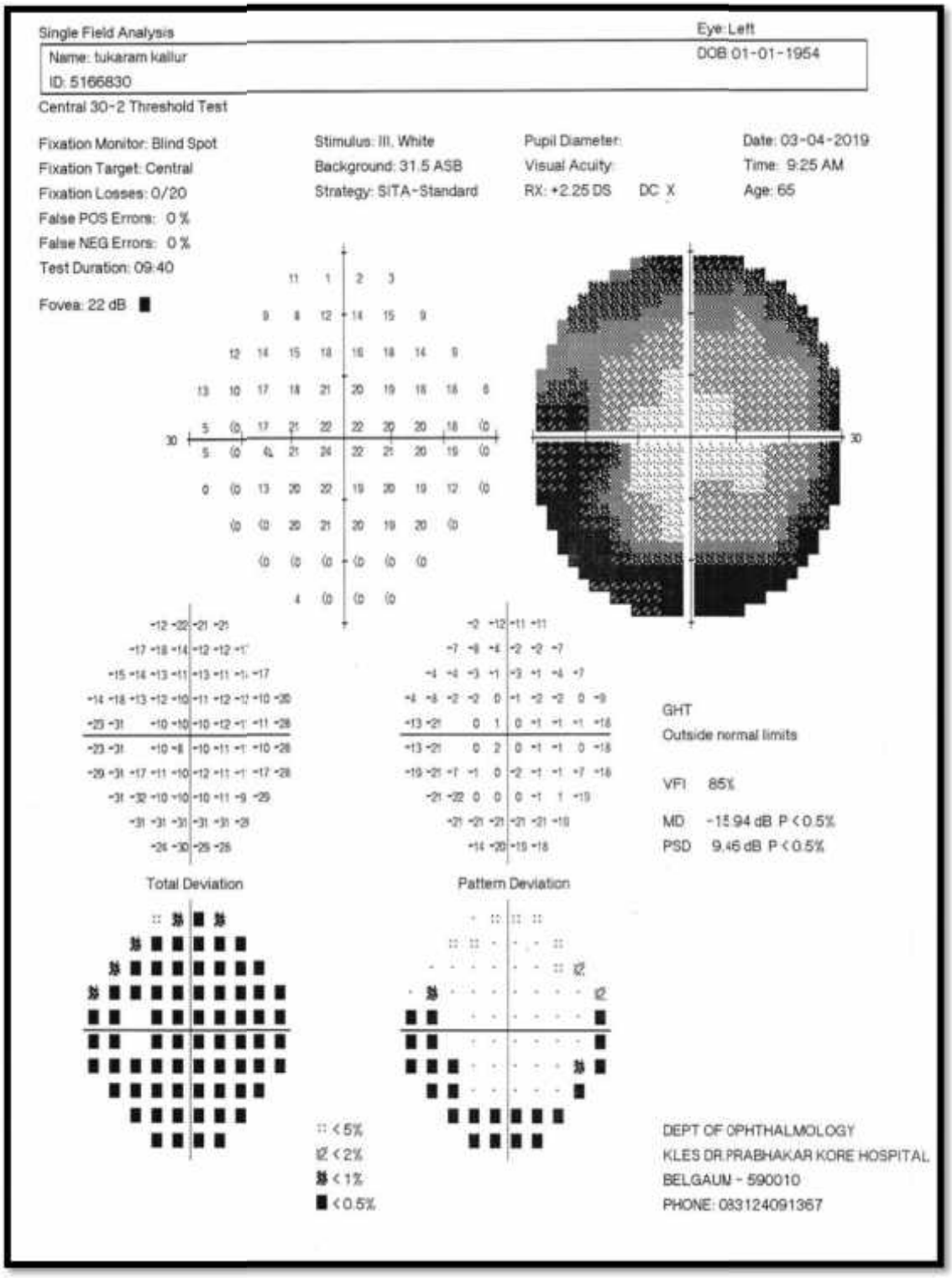
Photograph 5: Colour fundus photography showing total optic atrophy with bean pot cupping, laminar dot sign and peripapillary atrophy.



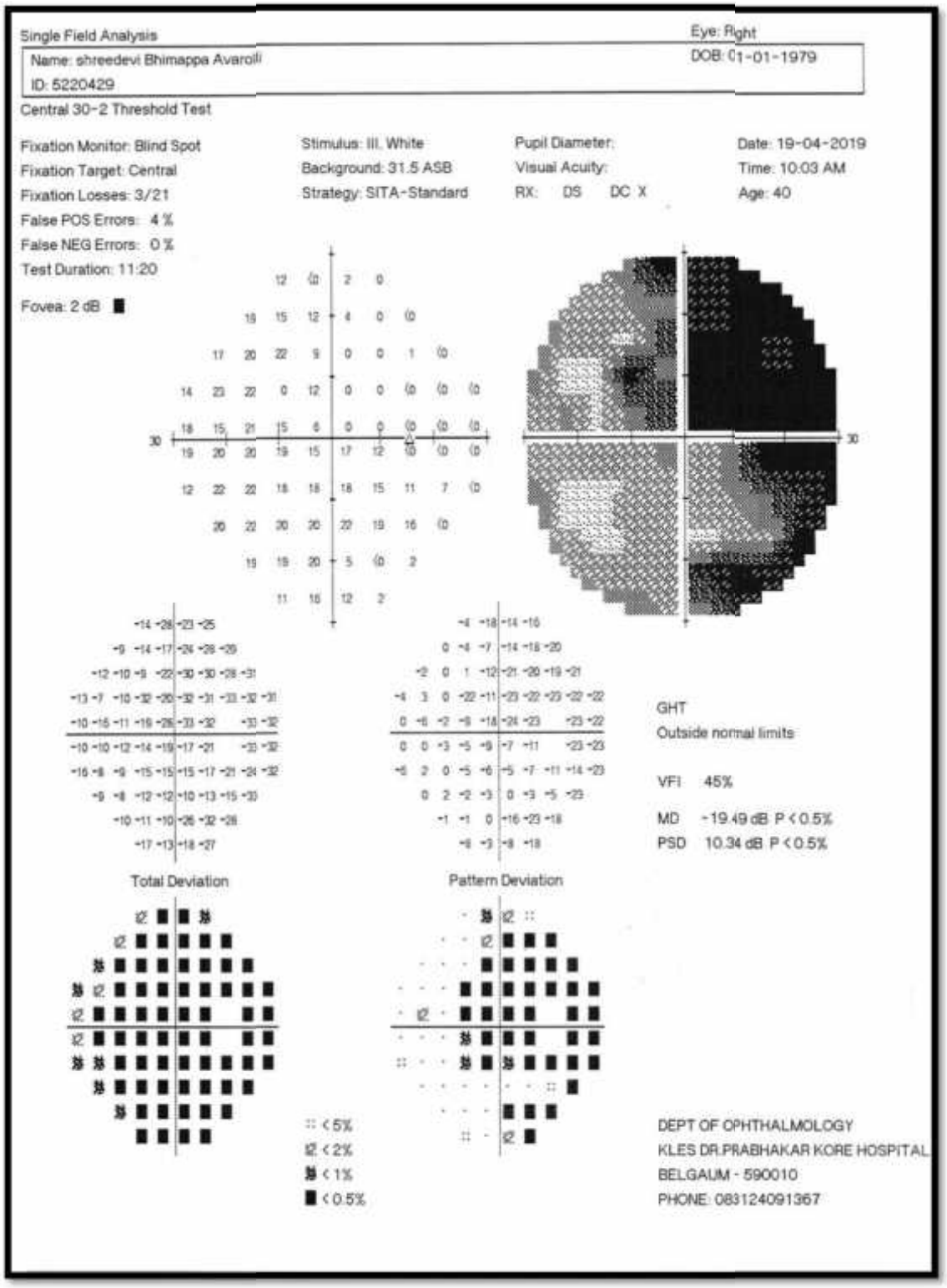
Photograph 6: Acute angle closure glaucoma.



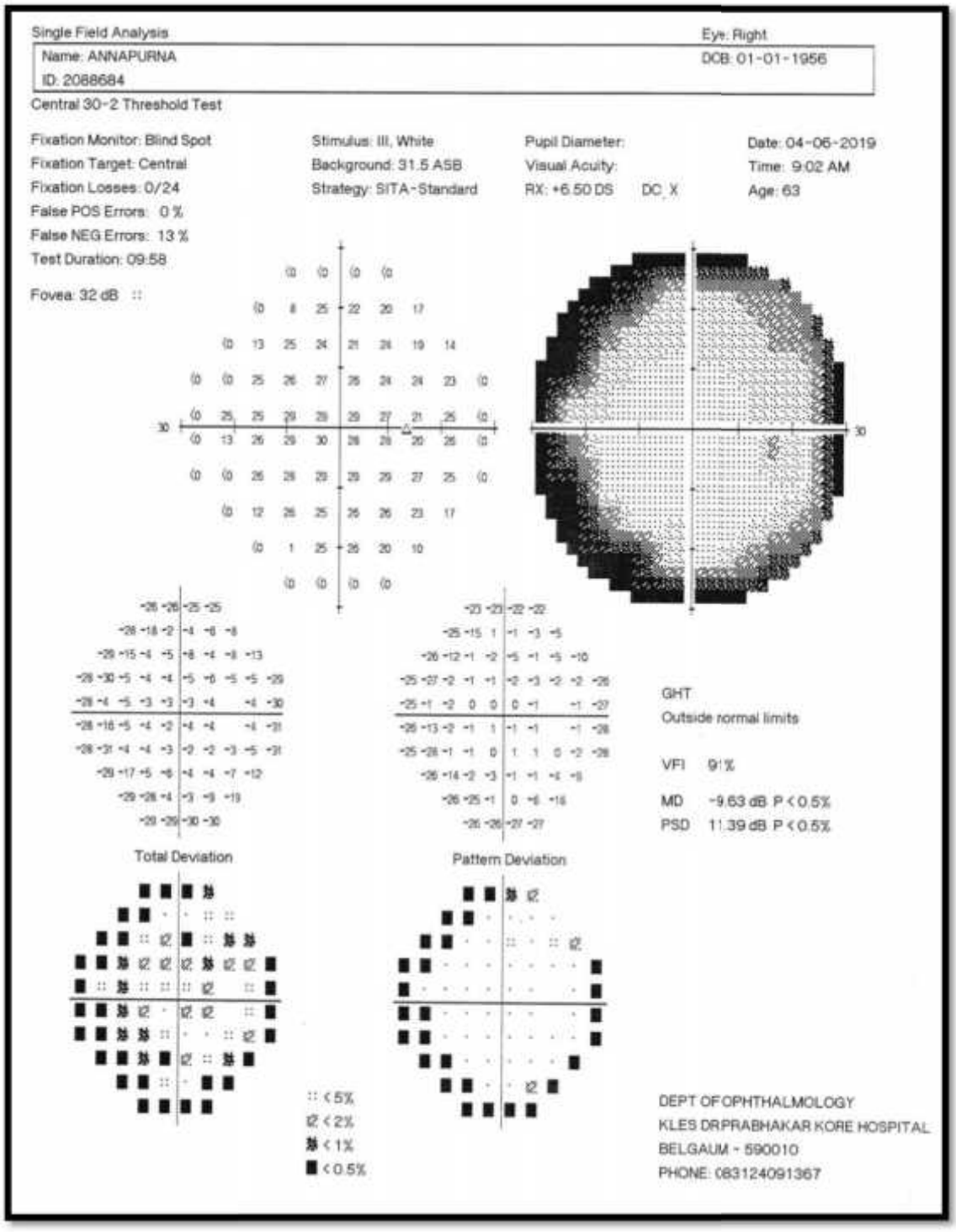
Photograph 7: pseudo exfoliative material seen at pupillary margin



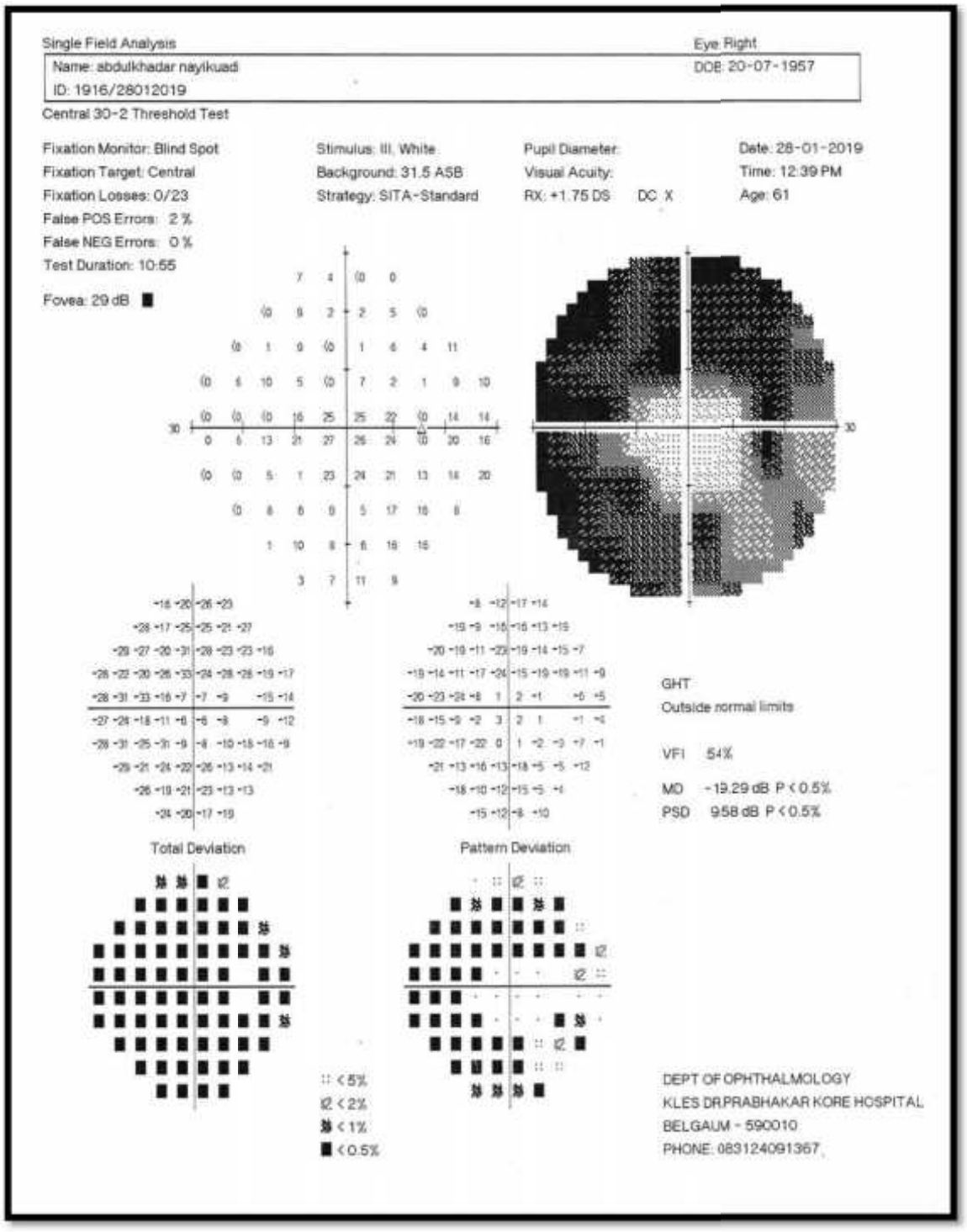
Photograph 8: Single field analysis print out of 30-2 SITA standard showing inferior arcuate scotoma



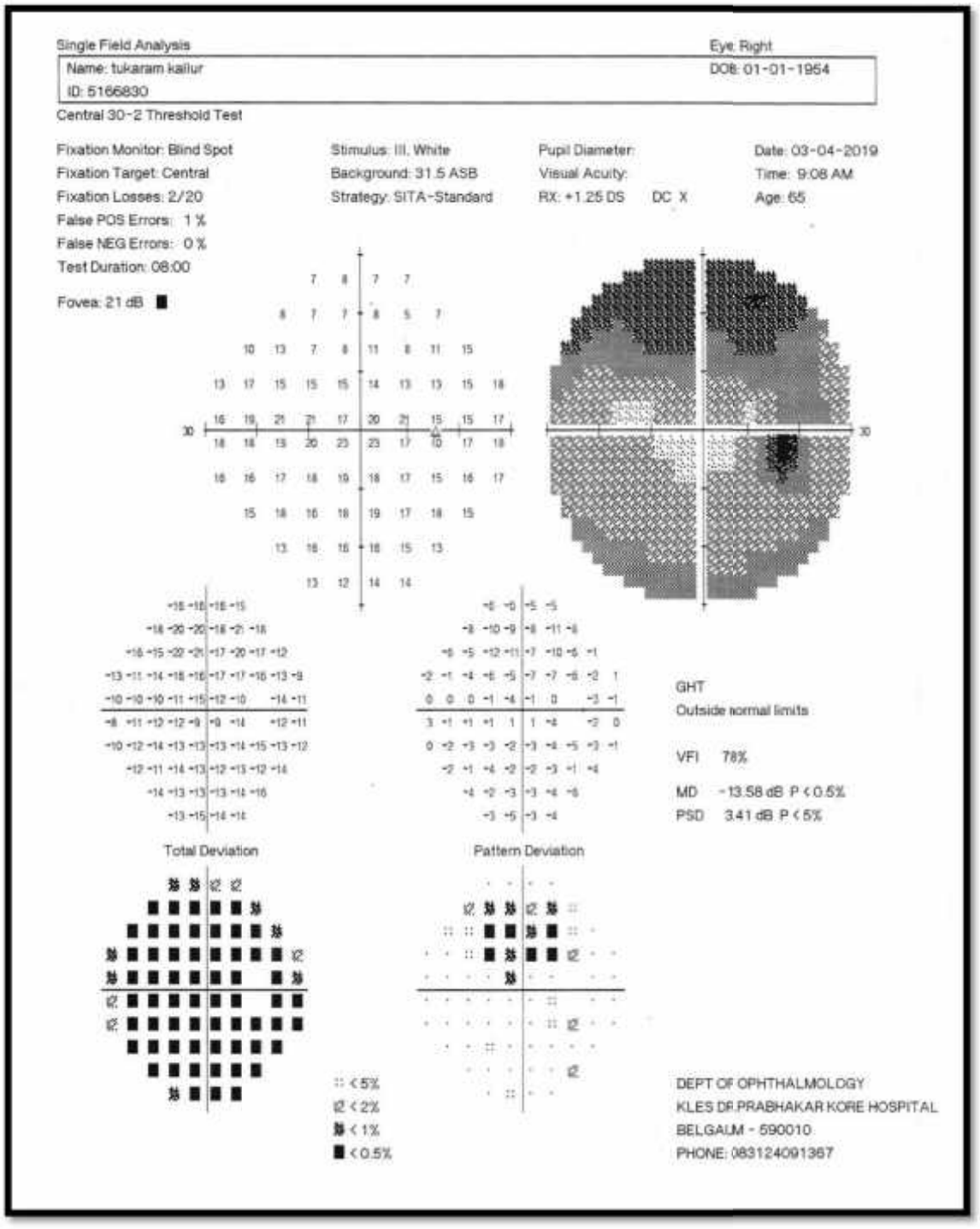
Photograph 9: Single field analysis print out of 30-2 SITA standard showing double arcuate scotoma with sparing of temporal island.



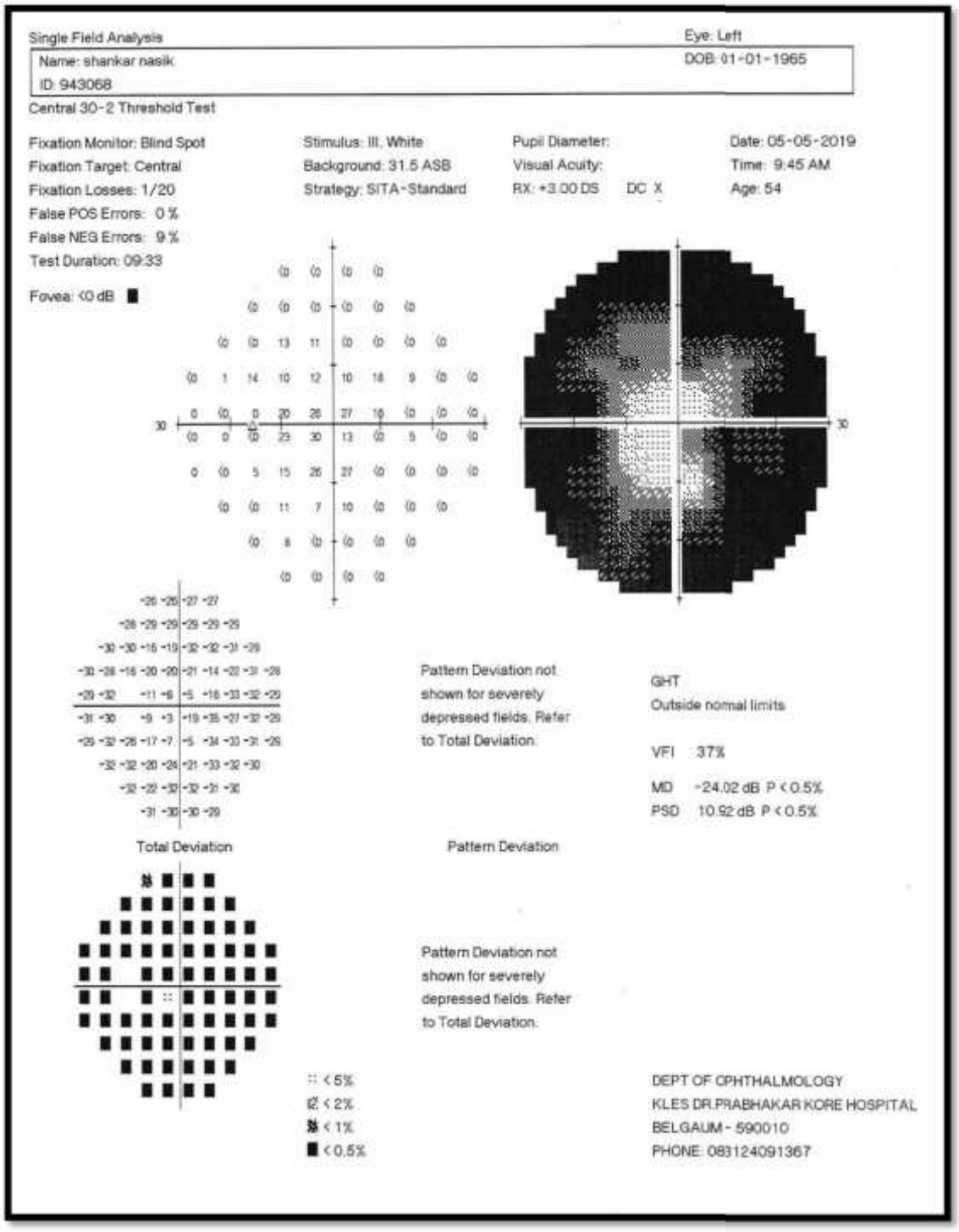
Photograph 10: Single field analysis print out of 30-2 SITA standard showing double arcuate scotoma.



Photograph 11: Single field analysis print out of 30-2 SITA standard showing ring scotoma with central tubular vision.



Photograph 12: Single field analysis print out of 30-2 SITA standard showing early paracentral scotoma.



Photograph 13: Single field analysis print out of 30-2 SITA standard showing severe visual field defect.

Annexure-V

KEY TO MASTER CHART

Gender

M – male

F – Female

HTN – Hypertension

DM – Diabete Mellitus

F/H – Family History

RE – Right Eye

LE – Left Eye

C:D – cup : disc ratio

IOP – Intra ocular pressure

Y – Yes

N – No

DNMO – Details not made out

PPA – Peripapillary atrophy

NRR – Neuroretinal rim

PL – Perception of light

PR – Projection of light

CF– Counting fingers

Visual fields

1- superior arcuate scotoma

2- inferior arcuate scotoma

3- double arcuate scotoma

4- paracentral scotoma

5- nasal step

6- tubular vision

7- generalized depression

8-within normal limit

Gonioscopy (shaffer system)

0- grade 0

1- grade 1

2 - grade 2

3- grade 3

4- grade 4

Annexure-V

Master Chart

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
1	82	M	N	N	N	N	N	N	N	PPA	PPA	0.3	0.3	N	7.6	7.6	N
2	44	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.8	13.2	N
3	75	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	9.9	8.9	N
4	70	F	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	18.9	14	N
5	75	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	13.1	15.9	N
6	65	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	13.1	15.9	N
7	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	11.2	12	N
8	51	M	N	N	N	N	Y	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12	N
9	75	M	N	N	N	N	Y	Y	N	NORMAL	NORMAL	0.3	0.3	N	11.8	13.2	N
10	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.5	12.5	N
11	70	F	N	N	N	N	N	N	N	DNMO	PALE, PPA	DNMO	0.3	N	7.8	7.8	N
12	75	F	Y	Y	N	N	N	N	N	PPA	PPA	0.3	0.3	N	10.7	11.7	N
13	60	F	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	13.5	14.1	N
14	82	M	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.6	14.6	N
15	45	M	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.8	7.8	N
16	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.1	10.1	N
17	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.9	14.6	N
18	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.6	12.6	N
19	80	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
20	81	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	10.2	N
21	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	16.5	N
22	56	F	N	N	N	N	N	N	N	PPA	PPA	0.4	0.4	N	14.6	14.6	N
23	78	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
24	62	M	N	N	N	N	Y	N	N	NORMAL	NORMAL	0.5	0.5	N	17.3	14.6	N
25	70	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	17.3	N
26	59	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
27	47	M	N	N	N	N	N	N	N	DNMO	PPA	DNMO	0.3	N	8.5	10.6	N
28	68	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
29	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	20.6	17.3	N
30	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
31	69	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
32	68	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	18.9	17.3	N
33	60	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.4	13.9	N
34	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
35	53	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
36	80	M	N	N	N	N	Y	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.6	N
37	63	M	N	Y	N	N	N	N	N	PALLOR, THINNED NRR,BAYONETTING, PPA	THINNED NRR, BAYONETTING	0.8	0.5	N	42.5	29	Y
38	48	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
39	68	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	12.2	N
40	70	M	N	N	N	N	Y	Y	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
41	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	10.2	13.4	N
42	67	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
43	60	M	N	N	N	N	N	Y	N	NORMAL	NORMAL	0.3	0.3	N	14.6	11.2	N
44	65	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N
45	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
46	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
47	70	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	13.9	N
48	49	M	N	N	N	N	Y	N	N	NORMAL	NORMAL	0.5	0.5	N	7.1	10.2	N
49	66	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
50	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
51	73	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
52	70	M	N	N	N	N	N	Y	N	NORMAL	NORMAL	0.4	0.4	N	14.6	15.9	N
53	53	M	N	N	N	N	N	N	N	NORMAL	THINNED NRR, BAYONETTING	0.3	0.9	N	20.6	46.9	Y
54	62	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	18.9	N
55	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	13.4	N
56	73	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	14.6	15.8	N
57	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	11.2	N
58	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
59	75	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
60	44	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
61	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	13.9	20.6	N
62	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	17.3	N
63	78	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	17.3	N
64	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
65	65	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	18.9	N
66	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	14.6	15.8	N
67	55	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
68	62	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	7.8	7.8	N
69	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.5	12.5	N
70	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.1	10.1	N
71	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	7.6	N
72	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.9	14.6	N
73	59	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.6	12.6	N
74	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
75	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	14	N
76	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.1	15.9	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
77	73	M	Y	N	N	N	Y	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12	N
78	70	M	N	N	N	N	N	N	N	PPA	PPA	0.3	0.3	N	7.6	7.6	N
79	52	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	17.3	N
80	48	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	18.9	N
81	44	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
82	42	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
83	40	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.8	15.8	N
84	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
85	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
86	75	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
87	80	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	15.8	N
88	58	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
89	43	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	17.3	17.3	N
90	70	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	14.6	N
91	63	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	14.6	N
92	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
93	60	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	20.4	N
94	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
95	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
96	42	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	13.4	12.2	N
97	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.3	N	15.9	14.6	N
98	51	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
99	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.8	12.7	N
100	67	M	N	N	N	N	N	Y	N	NORMAL	NORMAL	0.3	0.3	N	14.6	15.9	N
101	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	18.9	N
102	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
103	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
104	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	20.6	N
105	42	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N
106	65	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.6	N
107	48	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	15.9	N
108	62	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
109	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	17.3	N
110	42	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	17.3	20.8	N
111	55	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
112	45	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	14.6	N
113	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	17.3	N
114	42	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N
115	56	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	17.3	N
116	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
117	48	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	20.6	N
118	60	F	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	20.6	14.6	N
119	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
120	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
121	50	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
122	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	12.2	N
123	40	M	N	N	N	N	N	N	N	THINNED NRR	THINNED NRR	0.6	0.6	N	20.6	24.4	Y
124	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
125	55	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	20.6	N
126	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
127	46	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
128	63	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
129	41	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
130	49	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
131	76	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
132	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
133	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
134	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
135	52	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.4	N	20.6	20.6	N
136	56	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	20.6	20.6	N
137	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
138	65	M	N	N	N	N	N	N	N	THINNED NRR, BAYONETING	THINNED NRR, BAYONETTING	0.5	0.5	N	29	34.5	Y
139	46	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
140	63	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.8	20.6	N
141	47	M	N	N	N	N	Y	N	N	NORMAL	NORMAL	0.3	0.3	N	19.6	19.6	N
142	69	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
143	56	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
144	52	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
145	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
146	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
147	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
148	76	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
149	55	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	20.5	N
150	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
151	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	12.2	N
152	67	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	7.7	10.8	N
153	65	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17	14.5	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
154	76	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15	12.7	N
155	68	F	Y	N	N	N	N	N	N	PPA	PPA	0.3	0.3	N	16.3	15.5	N
156	74	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8	8.6	N
157	70	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	13.3	N
158	70	M	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.3	10.7	N
159	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.3	12.2	N
160	66	M	Y	Y	N	N	N	N	N	TEMPORAL PALLOR	PPA	0.3	0.4	N	17.5	19	N
161	68	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.5	10.5	N
162	48	M	N	N	N	N	N	N	N	TEMPORAL PALLOR	DNMO	0.3	DNMO	N	15.9	18.1	N
163	65	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	19.3	20	N
164	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.1	12.5	N
165	56	M	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	16.5	20.2	N
166	60	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
167	69	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	13.8	20.1	N
168	63	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.7	9.4	N
169	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.4	18.5	N
170	72	M	N	N	N	N	Y	Y	N	NORMAL	NORMAL	0.4	0.4	N	18.9	15.2	N
171	80	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.9	10.9	N
172	85	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	19.3	16.3	N
173	54	M	N	N	N	N	N	N	N	THINNED NRR, BAYONETING	THINNED NRR, BAYONETTING	0.5	0.5	N	26.6	29	Y
174	60	M	N	N	N	N	N	N	N	THINNED NRR	THINNED NRR	0.5	0.5	N	26.6	24.4	Y
175	50	F	Y	N	N	N	N	N	N	THINNED NRR, BAYONETING	THINNED NRR, BAYONETING	0.5	0.7	N	41.5	34.5	Y
176	64	F	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	15.9	N
177	70	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	12.2	N
178	70	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	10.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
179	60	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	12.2	N
180	62	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	7.1	12.2	N
181	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	15.9	N
182	80	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.4	DNMO	N	17.3	13.4	N
183	80	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	9.4	8.5	N
184	65	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
185	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	15.9	18.9	N
186	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	10.2	N
187	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
188	66	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	17.3	N
189	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
190	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	14.6	N
191	72	F	Y	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	8.5	7.1	N
192	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	7.1	N
193	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	10.2	N
194	60	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.5	8.5	N
195	80	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.5	8.5	N
196	62	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	9.4	N
197	75	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.4	12.2	N
198	63	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	13.4	N
199	61	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
200	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	8.5	N
201	60	M	N	Y	N	N	N	N	N	THINNED NRR, BAYONETTING, LAMELLAR DOT SIGN	THINNED NRR, BAYONETTING, LAMELLAR DOT SIGN	0.9	0.9	N	15.6	12.2	Y
202	58	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
203	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
204	55	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	20.6	20.6	N
205	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
206	44	M	N	N	N	N	N	Y	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
207	70	M	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	14.6	N
208	66	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
209	69	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
210	80	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
211	64	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	17.3	N
212	62	M	N	Y	N	N	N	Y	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
213	40	M	N	N	N	N	N	Y	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
214	68	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
215	75	M	N	N	N	N	N	Y	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
216	79	M	N	N	N	N	N	N	N	THINNED NRR, BAYONETTING	PALE DISC	0.4	0.9	N	17.3	17.3	Y
217	54	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	7.1	10.2	N
218	40	F	N	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	Y	54	35.7	Y
219	65	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	ERROR	15.9	N
220	62	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	17.3	N
221	58	M	Y	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	17.3	N
222	40	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	17.3	N
223	81	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	17.3	N
224	51	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
225	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	20.6	20.6	N
226	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	12.2	N
227	59	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
228	70	M	N	N	N	N	Y	N	N	NORMAL	NORMAL	0.4	0.4	N	20.6	20.6	N
229	64	M	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	59.1	Y
230	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	11.2	N
231	64	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	7.8	8.5	N
232	59	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.6	N
233	70	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	7.8	8.5	N
234	55	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N
235	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	15.9	N
236	42	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
237	62	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.2	DNMO	N	12.2	12.2	N
238	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
239	61	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	8.5	N
240	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
241	41	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N
242	64	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
243	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
244	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
245	50	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	18.9	N
246	80	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	15.9	N
247	80	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	9.4	N
248	69	M	Y	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.2	8.5	N
249	80	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
250	55	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
251	48	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	15.9	N
252	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	15.9	N
253	80	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	15.9	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
254	45	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	12.2	N
255	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.4	N
256	52	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
257	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
258	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	12.2	N
259	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	13.4	18.9	N
260	60	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	9.4	N
261	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	12.2	N
262	60	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	8.5	9.4	N
263	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
264	73	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	11.2	10.2	N
265	66	F	Y	N	N	N	N	N	N	THINNED NRR, BAYONETTING, LAMELLAR DOT SIGN	NASALIZATION, BAYONETTING, LAMELLAR DOT SIGN	0.8	0.8	N	13.2	10.2	Y
266	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
267	63	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
268	48	F	N	N	N	N	N	N	N	TEMPORAL PALLOR	TEMPORAL PALLOR	0.4	0.4	N	10.2	10.2	N
269	52	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
270	80	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
271	41	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N
272	74	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
273	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	20.6	N
274	89	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	14.6	N
275	45	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	18.9	17.3	N
276	52	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
277	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.4	N	20.6	17.3	N
278	66	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	12.2	N
279	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	17.3	N
280	75	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	17.3	17.3	N
281	77	M	Y	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	20.6	20.6	N
282	45	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	14.6	N
283	62	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	13.4	N
284	68	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	17.3	N
285	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	18.9	N
286	66	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	3	N	11.2	12.2	N
287	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.6	N
288	69	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
289	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	3	N	12.2	11.2	N
290	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12.2	N
291	74	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	9.4	10.2	N
292	66	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	9.4	N
293	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	15.9	15.9	N
294	70	F	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.8	8.5	N
295	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	13.2	N
296	80	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	9.4	7.8	N
297	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	11.2	13.2	N
298	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	15.9	N
299	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
300	70	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	9.4	9.4	N
301	63	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	18.9	17.3	N
302	63	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	13.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
303	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	15.9	N
304	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.2	10.2	N
305	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	12.2	N
306	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	10.2	12.2	N
307	67	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.4	12.2	N
308	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12.2	N
309	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	12.2	N
310	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
311	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	8.5	8.5	N
312	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	9.4	N
313	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	15.9	N
314	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
315	77	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.2	10.2	N
316	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	13.2	N
317	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	9.4	N
318	66	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	8.5	N
319	64	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	9.4	N
320	55	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	15.9	15.9	N
321	64	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	8.5	9.4	N
322	57	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	10.2	10.2	N
323	63	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	10.2	N
324	60	F	N	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	15.9	N
325	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	15.9	N
326	65	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.5	9.4	N
327	70	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	8.5	N
328	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
329	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.9	9.4	N
330	48	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	10.2	N
331	58	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	13.2	N
332	70	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	13.2	10.2	N
333	42	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	13.2	N
334	45	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	15.9	17.3	N
335	80	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	11.2	12.2	N
336	80	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	15.9	15.9	N
337	75	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.2	12.2	N
338	60	M	N	N	N	N	Y	Y	N	NORMAL	THINNED NRR, BAYONETTING	0.5	0.9	N	17.3	29	Y
339	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	11.2	N
340	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	8.5	N
341	75	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	13.2	N
342	55	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.4	7.8	N
343	62	M	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	11.2	N
344	71	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	9.4	N
345	50	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.4	8.5	N
346	72	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	10.2	N
347	85	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.4	8.5	N
348	75	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	8.5	N
349	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
350	55	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.5	8.5	N
351	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	12.2	N
352	45	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	13.4	N
353	45	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
354	70	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	12.2	N
355	68	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	18.6	13.4	N
356	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
357	62	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
358	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
359	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
360	60	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
361	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
362	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.1	20.1	N
363	50	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	15.9	N
364	45	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
365	40	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
366	66	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
367	42	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
368	48	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
369	63	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	13.4	N
370	65	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.4	13.4	N
371	75	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.8	8.5	N
372	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
373	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.4	8.4	N
374	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	12.2	N
375	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
376	68	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.4	8.4	N
377	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.4	10.2	N
378	51	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
379	45	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
380	59	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	20.6	17.3	N
381	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
382	61	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	8.4	10.2	N
383	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
384	47	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.4	12.2	N
385	49	M	N	N	N	N	Y	Y	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
386	62	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
387	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	14.6	N
388	60	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	11.2	N
389	60	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	13.4	N
390	48	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.5	14.6	N
391	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	7.1	N
392	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	10.2	N
393	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
394	73	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	10.2	7.1	N
395	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	12.2	N
396	50	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	15.9	N
397	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	15.9	17.3	N
398	70	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	8.4	N
399	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	12.2	N
400	64	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	15.9	N
401	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
402	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
403	43	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	15.9	N
404	57	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	14.6	N
405	63	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
406	61	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
407	58	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N
408	70	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	12.2	N
409	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	Y	20.6	17.3	N
410	61	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	13.4	N
411	59	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
412	47	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	15.9	N
413	53	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.4	10.2	N
414	72	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	12.2	N
415	70	F	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	11.2	12.2	N
416	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	18.9	N
417	66	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	15.9	18.9	N
418	74	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	11.2	14.6	N
419	68	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	15.9	18.9	N
420	68	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	12.2	N
421	60	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	15.9	N
422	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	15.9	18.9	N
423	78	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	15.9	15.9	N
424	57	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
425	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.6	N
426	78	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
427	80	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	10.2	N
428	65	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	11.2	N
429	85	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	13.4	N
430	48	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	15.9	N
431	70	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	15.9	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
432	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	13.4	14.6	N
433	52	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	15.9	N
434	50	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.6	N
435	50	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	12.2	N
436	78	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
437	70	F	Y	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	10.2	N
438	70	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	7.8	8.4	N
439	57	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
440	42	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
441	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
442	57	M	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	12.2	N
443	60	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	10.2	10.2	N
444	72	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
445	52	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	10.2	7.1	N
446	63	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
447	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	11.2	11.2	N
448	69	M	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	11.2	N
449	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	10.2	10.2	N
450	56	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	11.2	N
451	66	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	15.9	N
452	70	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	12.2	N
453	54	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
454	66	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	12.2	N
455	70	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	14.6	20.6	N
456	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	12.2	N
457	48	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	14.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
458	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	14.6	N
459	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	17.3	N
460	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
461	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	13.4	N
462	62	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.1	8.5	N
463	57	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.4	DNMO	N	8.5	7.1	N
464	49	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
465	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
466	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
467	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	12.2	N
468	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	14.6	N
469	50	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	Y	14.6	12.2	N
470	55	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
471	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
472	67	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
473	75	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
474	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	14.6	12.2	N
475	60	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.4	DNMO	N	14.6	17.3	N
476	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	7.1	N
477	59	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	10.2	N
478	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	17.3	14.6	N
479	72	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	8.5	12.2	N
480	80	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	14.6	N
481	70	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	8.5	10.2	N
482	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	Y	10.2	8.5	N
483	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
484	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	11.2	N
485	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
486	83	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	10.2	12.2	N
487	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	15.9	N
488	80	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.5	9.4	N
489	74	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	13.4	N
490	70	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	13.4	11.2	N
491	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	15.9	N
492	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	9.4	N
493	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	9.4	N
494	68	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	7.8	9.4	N
495	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	11.2	N
496	68	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.4	13.4	N
497	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12.2	N
498	75	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	14.6	N
499	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	13.4	N
500	68	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	13.4	13.4	N
501	70	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
502	69	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
503	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
504	76	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	13.4	N
505	64	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	18.9	20.6	N
506	50	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	14.6	N
507	44	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	12.2	N
508	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
509	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	13.4	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
510	54	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	11.2	N
511	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	8.4	9.5	N
512	64	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
513	62	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	13.4	N
514	40	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
515	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
516	60	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.8	9.4	N
517	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
518	70	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	18.9	13.4	N
519	60	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	9.4	9.4	N
520	86	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	15.9	15.9	N
521	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	13.4	N
522	65	F	N	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.4	N	11.2	9.4	N
523	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	13.4	14.6	N
524	57	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	0.4	10.2	14.6	N
525	58	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	0.4	11.2	12.2	N
526	55	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	17.3	N
527	64	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
528	45	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
529	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
530	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.5	15.9	N
531	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	12.2	N
532	64	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	20.6	N
533	51	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	17.3	17.3	N
534	70	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
535	66	F	N	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	9.4	9.4	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
536	65	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	14.6	N
537	48	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.4	N	14.6	14.6	N
538	67	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
539	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	10.2	N
540	63	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	10.2	N
541	80	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	12.2	N
542	50	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	17.3	N
543	69	M	Y	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	14.6	N
544	61	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	13.4	12.2	N
545	63	M	N	N	N	N	N	N	N	DNMO	THINNED NRR, BAYONETTING	DNMO	0.9	N	17.3	17.3	Y
546	70	M	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	14.6	N
547	72	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.4	N	8.5	8.5	N
548	51	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	8.4	N
549	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
550	80	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
551	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
552	57	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
553	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	14.6	10.2	N
554	65	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	12.2	N
555	68	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
556	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
557	70	M	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	14.6	N
558	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
559	55	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	11.2	11.2	N
560	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
561	67	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.4	N	13.4	17.3	N
562	51	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	10.2	N
563	64	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	8.5	N
564	75	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	14.6	N
565	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	14.6	N
566	63	M	N	N	N	N	N	N	N	PALE	PALE			N	9.4	8.5	N
567	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	11.2	N
568	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	17.3	N
569	73	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.4	10.2	N
570	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	15.9	N
571	70	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	12.2	N
572	52	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.5	10.2	N
573	50	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	18.9	18.9	N
574	70	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.5	N	15.9	15.9	N
575	74	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	18.9	N
576	67	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
577	65	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	14.6	N
578	55	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.4	13.4	N
579	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	8.5	7.8	N
580	45	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	18.9	20.6	N
581	61	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.8	7.8	N
582	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.5	N	12.2	9.4	N
583	75	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	13.4	12.2	N
584	73	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
585	54	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	9.4	N
586	70	F	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	11.2	12.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
587	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
588	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12.2	N
589	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
590	71	M	Y	Y	N	N	N	N	N	NORMAL	THINNED NRR, BAYONETTING, PERIPAPPILLARY ATROPY	0.4	0.9	N	15.9	24.4	Y
591	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	12.2	7.1	N
592	75	F	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	14.6	N
593	40	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
594	60	F	N	N	Y	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
595	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
596	60	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	12.2	N
597	43	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	17.3	N
598	50	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	8.5	12.2	N
599	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	12.2	12.2	N
600	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
601	86	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
602	44	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	14.3	N
603	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
604	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	11.2	15.9	N
605	60	M	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	14.6	N
606	46	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
607	65	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	7.1	N
608	45	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	14.6	N
609	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	12.2	N
610	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
611	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
612	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.3	N	17.3	14.6	N
613	90	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	17.3	N
614	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
615	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	17.3	N
616	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	13.4	N
617	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
618	80	M	N	N	N	N	N	N	N	THINNED NRR	THINNED NRR	0.6	0.6	N	17.3	17.3	Y
619	73	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	17.3	N
620	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
621	62	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
622	62	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	13.4	12.2	N
623	65	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	12.2	N
624	72	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	14.6	N
625	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
626	58	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.9	N
627	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
628	63	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	9.4	N
629	69	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
630	60	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	10.2	N
631	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
632	65	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	12.2	N
633	55	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	14.6	N
634	69	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
635	65	F	N	N	N	N	N	N	N	TILTED DISC	TEMPORAL PALLOR	0.3	0.4	N	20.6	20.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
636	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
637	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	12.2	N
638	65	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	12.2	N
639	75	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	17.3	N
640	72	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	14.6	N
641	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	12.2	12.2	N
642	68	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	14.6	17.3	N
643	70	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	14.6	N
644	68	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.4	N	14.6	20.6	N
645	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
646	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	14.6	14.6	N
647	95	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
648	65	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	20.6	17.3	N
649	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	20.6	N
650	80	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	20.6	20.6	N
651	52	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
652	52	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	14.6	N
653	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	17.3	14.6	N
654	68	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	17.3	N
655	75	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
656	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
657	62	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N
658	69	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
659	70	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	15.9	N
660	67	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	12.2	N
661	69	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	8.5	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
662	50	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.2	10.2	N
663	67	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
664	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
665	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
666	76	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	17.3	N
667	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
668	70	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
669	40	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	17.3	N
670	60	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
671	66	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	18.9	18.9	N
672	60	F	N	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	17.3	N
673	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
674	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
675	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
676	50	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
677	73	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
678	61	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
679	65	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.4	N	14.6	14.6	N
680	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
681	64	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
682	65	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
683	54	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	17.3	N
684	60	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
685	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
686	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N
687	46	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
688	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
689	51	F	N	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	17.3	N
690	65	F	Y	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	20.6	17.3	N
691	69	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
692	66	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
693	63	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N
694	50	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
695	67	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
696	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
697	70	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
698	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
699	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	13.4	N
700	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
701	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	14.6	N
702	70	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	17.3	17.3	N
703	64	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	20.6	17.3	N
704	62	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
705	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
706	85	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	18.9	N
707	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
708	70	F	Y	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	20.6	17.3	N
709	77	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
710	67	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	13.4	17.3	N
711	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
712	65	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	14.6	N
713	42	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.4	0.3	N	11.2	11.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
714	55	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.2	N
715	62	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12.2	N
716	72	M	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
717	65	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	17.3	N
718	60	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
719	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
720	66	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	7.1	N
721	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	10.2	N
722	50	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	7.1	N
723	46	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
724	65	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	17.3	N
725	79	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
726	47	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
727	60	M	Y	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	8.5	N
728	60	M	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	14.6	N
729	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	15.9	N
730	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
731	77	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
732	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
733	70	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	7.1	N
734	75	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
735	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
736	60	F	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
737	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	10.2	13.4	N
738	63	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
739	54	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	14.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
740	61	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	7.1	N
741	40	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	13.4	N
742	66	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	12.2	N
743	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
744	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	6.4	9.5	N
745	58	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	13.4	14.6	N
746	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.6	7.1	N
747	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N
748	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	18.9	14.6	N
749	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	10.2	9.5	N
750	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
751	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	14.6	N
752	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	9.5	N
753	40	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	17.3	N
754	45	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.5	12.2	N
755	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.5	9.5	N
756	55	F	N	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	10.2	10.2	N
757	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	20.6	N
758	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
759	75	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
760	55	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
761	61	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
762	44	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	13.4	N
763	68	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	15.9	N
764	72	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	14.6	N
765	46	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
766	65	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	17.3	N
767	46	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	11.2	N
768	70	F	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	17.3	N
769	66	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
770	40	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	20.6	N
771	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	13.4	17.3	N
772	70	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
773	75	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	12.2	N
774	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
775	75	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
776	61	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	14.6	N
777	56	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
778	63	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	13.4	N
779	44	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
780	60	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
781	61	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
782	68	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
783	65	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	10.2	7.1	N
784	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
785	65	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	12.2	N
786	62	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	10.2	N
787	65	M	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	17.3	N
788	65	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	14.6	N
789	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	10.2	N
790	69	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	11.2	N
791	55	M	Y	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	8.5	8.5	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
792	72	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
793	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	20.6	N
794	61	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
795	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	11.2	N
796	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	17.3	N
797	66	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
798	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	11.2	N
799	50	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	15.9	N
800	40	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	18.9	N
801	68	M	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	13.4	15.9	N
802	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	11.2	11.2	N
803	61	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	10.4	N
804	62	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	10.2	N
805	63	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	15.9	14.6	N
806	75	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	18.9	17.3	N
807	65	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.4	N	7.8	9.4	N
808	70	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.4	DNMO	N	15.9	14.6	N
809	80	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	15.9	14.6	N
810	75	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
811	58	M	N	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	12.2	N
812	75	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	11.2	12.2	N
813	67	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.8	N
814	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
815	77	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
816	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
817	65	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	10.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
818	60	F	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	11.2	N
819	66	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
820	48	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
821	73	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	10.2	N
822	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	13.4	N
823	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	8.5	N
824	63	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
825	62	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	7.1	7.1	N
826	57	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
827	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	7.1	N
828	75	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
829	80	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	10.2	N
830	80	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
831	75	F	Y	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
832	86	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
833	64	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.1	14.6	N
834	78	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
835	58	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
836	76	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
837	60	M	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	7.1	7.1	N
838	70	F	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	15.9	N
839	52	F	N	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	12.2	N
840	73	M	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	18.9	15.9	N
841	62	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	12.2	N
842	70	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	17.3	N
843	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
844	65	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	7.1	10.2	N
845	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	10.2	N
846	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	10.2	N
847	70	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.3	N
848	52	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	14.3	N
849	50	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
850	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
851	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	10.2	N
852	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	14.6	N
853	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N
854	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
855	80	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	10.2	N
856	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
857	59	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	20.6	N
858	57	M	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	13.4	N
859	60	F	Y	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	12.2	N
860	80	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
861	50	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	14.6	N
862	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	12.2	N
863	63	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	7.1	7.1	N
864	62	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	10.2	7.1	N
865	65	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	14.6	14.6	N
866	60	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	8.5	N
867	65	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	17.3	N
868	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	14.6	N
869	52	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	18.9	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
870	73	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	12.2	12.2	N
871	42	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	18.9	N
872	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	12.2	N
873	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
874	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	12.2	N
875	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	10.2	N
876	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
877	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
878	48	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
879	80	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	10.2	10.2	N
880	67	F	Y	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	14.6	12.2	N
881	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	10.2	N
882	45	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
883	71	F	Y	N	N	N	N	N	N	MYOPIC CRESCENT	MYOPIC CRESCENT	0.3	0.3	Y	12.2	14.6	N
884	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	14.6	N
885	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
886	58	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
887	80	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	8.5	8.5	N
888	62	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	8.5	N
889	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
890	57	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	13.4	N
891	66	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	20.6	N
892	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
893	40	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
894	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
895	46	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	17.3	N
896	49	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
897	72	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
898	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	12.2	N
899	44	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	20.6	12.2	N
900	50	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
901	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	8.9	N
902	60	F	Y	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	13.4	14.3	N
903	60	F	Y	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	17.3	N
904	63	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	14.6	N
905	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.8	7.8	N
906	52	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
907	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	14.6	N
908	75	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
909	63	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
910	73	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
911	57	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
912	80	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	8.5	N
913	71	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	8.5	N
914	65	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
915	66	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	12.2	N
916	75	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	7.1	N
917	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
918	63	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
919	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	11.2	N
920	80	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	14.6	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
921	58	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
922	68	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	13.4	14.6	N
923	58	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
924	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
925	70	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	12.2	12.2	N
926	55	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	10.2	N
927	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
928	58	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	12.2	N
929	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	12.2	N
930	0	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	114.6	N
931	60	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	14.6	N
932	55	F	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	17.3	17.3	N
933	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	15.9	N
934	58	F	N	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	14.6	N
935	51	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	17.3	14.6	N
936	80	F	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	10.2	10.2	N
937	71	M	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	17.3	12.2	N
938	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
939	65	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	10.2	N
940	50	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	10.2	N
941	80	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
942	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	14.6	N
943	94	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	15.9	14.6	N
944	60	M	N	Y	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	17.3	17.3	N
945	81	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
946	65	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.5	0.5	N	15.9	17.3	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
947	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
948	55	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
949	70	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	11.2	12.2	N
950	55	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	8.2	8.5	N
951	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	14.3	N
952	67	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.1	9.1	N
953	64	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	9.4	N
954	53	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	15.9	N
955	70	F	Y	Y	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	18.9	N
956	67	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	15.9	N
957	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	18.9	18.9	N
958	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	17.3	N
959	70	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	8.5	10.2	N
960	50	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	10.2	N
961	57	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.4	0.4	N	15.9	15.9	N
962	55	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	10.2	N
963	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	17.3	N
964	60	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.4	DNMO	N	11.2	14.6	N
965	60	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.9	10.2	N
966	67	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	11.2	14.6	N
967	60	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.1	9.1	N
968	70	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	10.2	N
969	60	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	9.1	10.2	N
970	70	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	11.2	11.2	N
971	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	9.9	10.2	N
972	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
973	70	F	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	13.2	13.2	N
974	75	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	9.1	N
975	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.1	12.2	N
976	60	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	9.1	9.1	N
977	55	M	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	11.2	11.2	N
978	50	F	Y	Y	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	11.2	14.6	N
979	60	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.9	7.1	N
980	80	M	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	11.2	10.2	N
981	73	M	Y	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	15.9	17.3	N
982	47	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	12.2	11.2	N
983	60	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	15.9	17.3	N
984	70	M	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	13.2	N
985	60	F	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	10.2	13.2	N
986	58	F	N	N	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	9.1	7.4	N
987	80	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	9.1	10.2	N
988	47	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	17.3	N
989	64	F	N	N	N	N	N	N	N	DNMO	DNMO	DNMO	DNMO	N	12.2	12.2	N
990	72	M	N	N	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	13.2	12.2	N
991	63	M	N	Y	N	N	N	N	N	DNMO	NORMAL	DNMO	0.3	N	14.6	12.2	N
992	67	M	N	Y	N	N	N	N	N	NORMAL	DNMO	0.3	DNMO	N	14.6	10.2	N
993	48	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	14.6	N
994	77	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	9.4	N
995	65	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	12.2	N
996	61	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	14.6	17.3	N
997	55	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	10.2	10.2	N
998	70	F	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	7.1	9.4	N

Patient Id	Age	Gender	HTN	DM	Migraine	F/H	Smoking	Alcohol	steroid use	RE Disc	LE Disc	RE C:D	LE C:D	High myopia	RE IOP	LE IOP	Glaucoma
999	45	M	N	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	17.3	15.9	N
1000	66	F	Y	N	N	N	N	N	N	NORMAL	NORMAL	0.3	0.3	N	12.2	9.5	N

Patient Id	visual acuity RE	visual acuity LE	pseudoexfoliation	RE C:D	LE C:D	RE IOP	LE IOP	visual fields RE	visual field LE	gonioscopy RE	gonioscopy LE	diurnal variation	Impression
37	6/12	6/24	no	0.8	0.5	42.5	29	6	8	4	4		BE PRIMARY OPEN ANGLE GLAUCOMA
53	6/12	PL+ PR inacc	YES	0.5	0.9	20.6	46.9	7	no visio n	4	4		BOTH EYES PSEUDOEXFOLIATIVE GLAUCOMA
123	6/24	6/18	NO	0.6	0.6	20.6	24.4	3	1	4	4		BE PRIMARY OPEN ANGLE GLAUCOMA
138	6/36	6/24	NO	0.5	0.5	29	34.5	1	2	4	4		BE PRIMARY OPEN ANGLE GLAUCOMA
173	6/24	6/36	NO	0.5	0.5	26.6	29	NA	NA	N A	NA		BE PRIMARY OPEN ANGLE GLAUCOMA
174	6/60	6/24	NO	0.5	0.5	26.6	24.4	NA	NA	N A	NA		BE PRIMARY OPEN ANGLE GLAUCOMA
175	6/60	CF 3 MT	NO	0.5	0.7	41.5	34.5	NA	NA	N A	NA		BE PRIMARY OPEN ANGLE GLAUCOMA
201	6/12	6/12	NO	0.9	0.9	15.6	12.2	7	7	4	4	1	BE NORMAL TENSION GLAUCOMA
216	6/24	PL+ PR acc	NO	0.4	0.9	17.3	17.3	1	no visio n	4	4	1	BE NORMAL TENSION GLAUCOMA
218	6/60	PL + PR acc	NO	DNM O	D N M	54	35.7	3	no visio n	4	4		BE PRIMARY OPEN ANGLE GLAUCOMA

Patient Id	visual acuity RE	visual acuity LE	pseudoexfoliation	RE C:D	LE C:D	RE IOP	LE IOP	visual fields RE	visual field LE	gonioscopy RE	gonioscopy LE	diurnal variation	Impression
					O								
229	6/24	PL+ PR acc	NO	0.3	DNMO	17.3	59.1	8	no vision	4	0		LE PRIMARY ANGLE CLOSURE GLAUCOMA
265	6/24	6/36	NO	0.8	0.8	13.2	10.2	2	3	4	4	1	BE NORMAL TENSION GLAUCOMA
338	6/60	CF 1 MT	NO	0.5	0.9	17.3	29	7	7	4	4		LE PRIMARY OPEN ANGLE GLAUCOMA
545	CF 2MT	CF 0.5MT	NO	DNMO	0.9	17.3	17.3	7	no vision	4	4	1	BE NORMAL TENSION GLAUCOMA
590	CF 2MT	6/60	NO	0.5	0.9	15.9	24.4	8	6	4	4	2	LE PRIMARY OPEN ANGLE GLAUCOMA
618	CFCF	CFCF	NO	0.6	0.6	17.3	17.3	no vision	no vision	4	4	1	NORMAL TENSION GLAUCOMA