ETIOLOGICAL PATTERN OF ANTERIOR UVEITIS IN A REFERRAL HOSPITAL

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DECLARATION

I, **Dr. JEEVAKALA.C.** solemnly declare that the dissertation titled **"ETIOLOGICAL PATTERN OF ANTERIOR UVEITIS IN A REFERRAL HOSPITAL"** has been prepared by me.

This is submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai, in partial fulfillment of the requirement for the award of M.S.,(Ophthalmology) Branch - III degree Examination to be held in MARCH 2009.

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CERTIFICATE

This is to certify that this dissertation entitled **"ETIOLOGICAL PATTERN OF ANTERIOR UVEITIS IN A REFERRAL HOSPITAL"** has been done by ***DR.JEEVAKALA. C.*** under my guidance in Department of OPHTHALMOLOGY, Madurai Medical College, Madurai.

I certify regarding the authenticity of the work done to prepare this dissertation.

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CONTENTS

INTRODUCTION TO UVEITIS

Uveitis is such a small word and yet in common usage in most medical circles it encomposes the entire spectrum of intraocular inflammation:-

iritis, iridocyclitis, parsplanitis, posterior uveitis, choroiditis, retinitis and retinal vasculitis

The Uvea of the eye consist of iris, ciliary body and choroid which is the eyes major blood supply.

Uveitis is broadly defined as inflammation of [i.e:-itis]of uvea [from the latina uva meaning grape]

The study of uveitis is complicated by the fact that the cause of inflammatory reaction of the inner layer can be infection, traumatic, neoplastic or autoimmune.

Inflammation may be acute, subacute or chronic. With inflammation and repair that as a protective response may not only damage inflamed target tissue but also may participate in collateral damage of surrounding normal tissue.

Pathological classification of uveitis is into granulomatous and non granulomatous with distinct etiologies, features, sequelae and treatment for each category.

Some uveitis entities occur bilaterally eg;-APMPPE and others occur unilaterally-ARPE (acute retinal pigment epithelitis)

Age sex and race may also help the clinician to narrow the diagnostic possibilities

HISTORICAL BACKGROUND

The problem of inflammation of the eye including uveitis was known to the Egyptians. The Edwin Smith surgical papyrus, the oldest known existing ophthalmic document, contains references to inflammatory condition of the eye.

The name iritis was introduced in 1801 by Johnn adam schmid-anatomist, surgeon and ophthalmologist of Vienna.

Inflammation of the ciliary body was originally described as an inflammation of orbicularis ciliaris by Friedrich Von Ammon. It was called cyclitis by August Bererd, which was later fully elucidated by Albricht Von Graefe. Ernst fuchs madde it clear that acute inflammation was best designated as iridocyclitis and pure cyclitis existed only in the chronic form characterised by keratic precipitates and vitreous opacities .

In the later part of 19^{th} century and during present century the amount of work done on all forms of uveitis has been immense and among the many Alan Churchill Woods laboured both in the clinic and the laboratory on the elusive and complex problems of uveitis.

Etiological classification

Uveitis may also be classified and organised etiologically and pathophysiologically according to the fallowing mechanism-traumatic infectious immunologic masquerade

Epidemiology - uveitis may affect individuals from any age from infancy on ,affects people from all parts of the world and is a significant cause of blindness.

Classification of Uveitis :

Duke Elder's Classification

1. **Uveitis wherein the infective element is dominant**

   a. Exogenous
      - Wound infection
      - Parasitic entry

   b. From neighbouring structures, from direct continuity
      - Extraocular
      - Ocular

   c. Endogenous-metastatic or ocurring in course of a infection - bacterial, rickettsial, viral, mycotic or parasitic

2.Uveitis wherein the element of hypersensitivity is dominent

   a. Anaphylactic and Atopic uveitis

b. Uveitis due to bacterial [delayed] allergy

c. Autoimmune uveitis focal infection

3.Toxic uveitis

a. Endogenous toxins

- Autotoxication
- Organismal toxin

b. Endocular toxin -atrophic,haemorrhagic,neoplastic

c. Exogenous Chemical irritants

4. Traumatic Uveitis

5. Uveitis associated with noninfective systemic diseases

a. Sarcoidosis

b. The collagen and related diseases

c. Diseases of central nervous system

d. Diseases of the skin

6.Uveitis of unknown etiology

a. Sympathetic ophthalmitis

b. Heterochromic iridocyclitis

Nussenblatt's Classification

IUSG *	TESSLER
---	Sclerouveitis
---	Keratouveitis
Anterior Uveitis Iritis Anterior cyclitis Iridocyclitis	**Anterior Uveitis** Iritis Iridocyclitis
Intermediate Uveitis Posterior cyclitis Hyalitis Iridocyclitis	**Intermediate Uveitis** Cyclitis Vitritis Parsplanitis
Posterior uveitis Focal, Multifocal or diffuse choroiditis,chorioretinitis	Retinitis
Panuveitis	Choroiditis

IUSG*

From Bloch Michael E, Nussenblatt RB. International Uveitis Study Group recommendation for the evaluation of intraocuJlar inflammatory disease. Am J Ophthalmology 103

Tesslar +

From Tessler HH:Classification and symptoms and signs of uveitis.In DuaneTD,JaegerEA.editors:Clinical Ophthalmology vol 4 Philadelphia 1987.JB Lippincott Chapter 32 pp 1-10

Causes of Acute and Chronic Uveitis

1. Acute Uveitis

- most cases of anterior uveitis
  - Idiopathic
  - ankylosing spondylitis
  - reiters syndrome
  - fuchs heterochromic iridocyclitis
- VKH syndrome
- toxoplasmosis
- AMPPE
- MEWS
- Acute retinal necrosis
- Post surgical bacterial infection
- Trauma

2. Chronic Uveitis

- Juvenile rheumatoid arthritis
- Birdshot choroidopathy
- Serpiginous chroidopathy
- Tuberculous uveitis

- Postsurgical uveitis [propionibacterium acnes,Fungal]
- Intraocular lymphoma
- Sympathetic ophthalmia
- Multifocal choroiditis
- Sarcoidosis
- Intermediate uveitis/parsplanitis

3. Causes of Granulomatous Inflammation in Eye

- Sarcoidosis
- Sympathetic ophthalmia
- Uveitis associated with multiple sclerosis
- Lens induced uveitis
- Intraocular foreign body
- VKHsyndrome
- Syphilis
- Tuberculosis
- Other infectious agents

4. Causes of Unilateral Uveitis

- Sarcoidosis
- Post surgical uveitis

- Intraocular foreign body
- Parasitic diseses
- Acute retinal necrosis
- Behcet’s disease

5. Causes of Anterior Uveitis

- Idiopathic
- Ankylosing spondylitis
- Reiter’s syndrome
- Inflammatory bowel disease
- Psoriatic arthritis
- Behcet’s disease
- HLA-B27 associated disease
- Juvenile rheumatoid arthritis
- Fuchs heterochromic iridocyclitis
- Sarcoidosis
- Syphilis
- Glaucomatocyclitic crisis
- Masquerade syndrome

6. Causes of Intermediate Uveitis

- Sarcoidosis
- Inflammatory bowel disease
- Multiple sclerosis
- Lyme disease
- Parsplanitis*

* not an etiological diagnosis but patients with intermediate uveitis of parsplanitis subtype tend to have worst prognosis

7. Causes of Posterior Uveitis

Focal Retinitis

- Toxoplasmosis
- Onchocerciasis
- Cysticercosis
- Masquerade syndrome

Multifocal Retinitis

- Syphilis
- Herpes simplex virus
- Cytomegalovirus infection

- Sarcoidosis infection
- Masquerade syndrome
- Candidiasis
- Meningococcus

Focal Choroiditis

- Toxocariasis
- Toxoplasmosis
- Nocardiosis
- Masquerade syndromes

Multifocal Choroiditis

- Histoplasmosis
- Sympathetic ophthalmia
- Vogt- Koyanagi- Harada syndrome
- Sarcoidosis
- Serpiginous choroidopathy
- Birdshot choroidopathy
- Masquerade syndromes

8. Causes of Panuveitis

- Syphilis
- Sarcoidosis
- VKH syndrome
- Infectious endophthalmitis
- Behcet’s disease

DEMOGRAPHIC CONSIDERATION IN UVEITIS

FACTOR	DISEASE RISKS
Female	Pauciarticular JRA,chronic anterior uveitis
Male	Ankylosing spondylitis,sympathetic ophthalmia
American Black	Sarcoidosis
Native American	VKH Syndrome
Japanese	VKH syndrome, Behcet's syndrome
Mid Western American	POHS
Mediterranean ancestory	Behcet's syndrome
Central American	Cysticercosis ,Onchocerciasis
South American	Cysticercosis,Toxoplasmosis
West African	Onchocersiasis
IV Drug abuser	Fungal endophthalmitis,AIDS
Promiscuous	AIDS, Syphilis
Frequent hiking in wooded area	Lyme disease

Uveitis associated with medications

Anticholinesterases and direct acting agonists	Anterior uveitis
Hydralazine	Lupus like syndrome
Nitrogen mustard	Necrotising uveitis with retinal vasculitis
Rifabutin	anterior uveitis
Procainamide	lupus like syndrome with episcleritis
Intraocular gases Air Perflurocarbon Silicone oil A chymotrypsin	 Anterior uveitis Fibrinous anterior uveitis Anterior uveitis Severe vitritis

REVIEW OF LITERATURE

Anterior uveitis is the most common form of uveitis and accounts for approximately ¾ of the cases with annual incidence rate of about 8 cases/100,000 population. Although anterior uveitis is the most easily managed form of uveitis, associated complications like glaucoma may result in severe visual loss. In addition many disease that can cause panuveitis such as sarcoidosis, behcet's syndrome and endophthalmitis start as anterior uveitis.

Clinical description

Anterior uveitis includes disease previously categorised as both iritis-inflammation of iris and iridocyclitis-inflammation of iris and ciliary body.

Patients with anterior uveitis often complain of redness, pain, photophobia and blurred vision. Ciliary flush, conjunctival injection in the perilimbal area are characteristic form of the disease. Pupillary miosis, posterior synechiae and dilated iris vessels are common findings in all forms of anterior uveitis

Conjunctival hyperaemia is a common sign of acute anterior inflammation but is rare in chronic posterior segment disease.

Peripheral anterior synechiae should be looked for on gonioscopy because patients with severe synechiae are at risk for secondary glaucoma.

Major indicators of anterior uveitis are presence of cells and flare in the anterior chamber. Anterior chamber inflammation is assessed on slit lamp biomicroscopy

Gnex-crosier and colleagues recently used laser flare cell photometry to demonstrated that blood aqueous barrier disruption was very pronounced in idiopathic anterior uveitis, acute retinal necrosis but minimal in patients with toxoplasmosis or Fuchs' heterochromic cyclitis

Fibrin may accumulate in the anterior chamber and may cause the once mobile cells that circulate in the aqueous to become frozen.

The plasmoid aqueous is a sign of severe anterior uveitis that requires aggressive therapy. Another sign of severe anterior uveitis is hypopyon composed of layered leucocytes. It is frequently associated

with behcet’s disease or infectious endophthalmitis and rifabutin toxicity in patients with aids

Recently anterior uveitis including some cases with hypopyon has been described in patients with AIDS who are receiving the drug rifabutin as treatment or prophylaxis for mycobacterial infection.

A pseudohypopyon, composed of tumour cells or haemorrhagic debris, can occur in some of the masquerade syndromes after vitreous haemorrhage

Inflammatory cells collect and adhere to corneal endothelium and form keratic precipitates. Mechanism appears to involve the expression of cell adhesion molecules that are upregulated in the presence of inflammatory cytokines such as IL-1.in most inflammatory reactions, the neutrophil is the first cell present and the transformed macrophages [epithelioid cells] and lymphocytes accumulates the inflammation becomes chronic. KPs therefore mimic the course of the inflammation in the tissue.

Large greasy appearing keratic precipitates are suggestive of granulomatous inflammation and may help in determining the cause of uveitis.

Other corneal findings ; corneal dendrities in uveitis as a result of herpes simplex virus infection, interstitial keratitis may be associated with syphilis, with the presence of ghost vessels, similar findings seen in patients with sarcoidosis.

During this episode the iop is often decreased due to ciliary body shutdown.

Posterior synechiae and peripheral anterior synechiae are responsible for pupillary block glaucoma and obstruction of aqueous outflow respectively.

Iris nodules are accumulations of inflammatory cells in the iris or on its surface.Koeppe nodule develops on the pupillary border, busacca’s nodules occur on the iris surface.

Many patients with uveitis develop cataracts because of underlying inflammation and the use of corticosteroids to treat the disease

Inflammation of the Vitreous is characterised by increased cells and protein. In patients with pars planitis who have cells in the anterior vitreous developed cells in the posterior vitreous if the

inflammation is more severe. Vitreous cells aggregate into clumps called snow balls. These settle in the inferior periphery near the retinal surface and are seen best with indirect ophthalmoscope. Vitreous traction by inflammatory fibrin membranes causean incomplete posterior vitreous detachment may be associated with the development of cystoid macular oedema.

Cystoid macular oedema is a common retinal finding in patients with uveitis. Vascular sheathing of the arteries or veins caused by in infiltration of inflamatory cells around the vessels is easily seen in the posterior pole. Retinal haemorrhages and cotton wool spots frequently accompany retinal vasculitis.

Choroidal lesions with or without retinal involvement are common in posterior inflammatory disease.

Uveitis may affect the optic nerve in several ways. Disc hyperaemia, papillitis, or papillodema may be seen.

Signs of uveitis

Eyelid and skin

– vitiligo, nodules

Conjunctiva

– perilimbal or diffuse injection

- nodules

Corneal endothelium

- keratic precipitates[diffuse or gravitational]
- fibrin
- pigment[non specific]

Anterior/posterior chamber

- inflammatory cells
- flare[protinaceous influx]
- pigment[non specific]

Iris

- nodules
- posterior synechiae
- atrophy
- heterochromia

Angle-peripheral anterior synechiae

- nodules
- vascularization

Intraocular pressure

- hypotony
- secondary glaucoma

Vitreous

- inflammatory cells[single/clumped]
- traction bands

Parsplana

- snowbanking

Retina

- Inflammatory cells
- Inflammatory cuffing of blood vessels
- Oedema
- CMO
- RPE hypertrophy/clumping/loss
- Epiretinal membrane

Choroid

- Inflammatory infiltrate
- Atrophy
- Neovascularisation

Optic nerve

- Oedema [non specific]

The SUN working group grading scheme for anterior chamber cells

No.of Cells	Grade
0	<1
0.5	1-5
1+	6-15
2+	16-25
3+	26-50
4+	>50

The SUN working group grading system for anterior chamber flare

Grade	Description
0-	none
1+	faint
2+	Moderate [iris &lens details clear
3+	Marked [iris &lens details hazy]
4+	Intense [fibrin or plasmoid aqueous]

The standardization of uveitis nomenclature [SUN] working group. Standardization of nomenclature for reporting clinical data. Results of the first international workshop. AmJ Ophthalmol 2005 140:509-516. table 3.

IDIOPATHIC ANTERIOR UVEITIS

After a through medical history and an ocular and general physical examination almost 50% of patients are found to have an anterior segment inflammation that is not associated with other defined clinical syndromes.

This form of anterior uveitis is referred to as idiopathic anterior uveitis. The diagnosis of idiopathic anterior uveitis depends greatly on the extend of evaluation for an underlying condition

Diagnostic workup:

A complete medical history and through examination can help target the workup. When a through history and examination fail to suggest specific diagnosis patients have limited workup with anterior uveitis even if it is their first episode.

If uveitis is nongranulomatous FTA-Abs test is done to rule out syphilis

A complete blood count and urine analysis to rule out underlying systemic disorder such as connective tissue disease

because the associated renal disease or anaemia may be asymptomatic but may warrent therapy.

In case of granulomatous anterior uveitis - a mantoux test, chest x-ray and serum and urine calcium test and serum ACE levels to rule out tuberculosis and sarcoidosis.

HLA-B27 ASSOCIATED ANTERIOR UVEITIS

HLA-B27 associated anterior uveitis appears to be a distinct clinical disorder. This form of disease has frequent association with

Ankylosing spondylitis

Psoriatic arthritis

Reiter syndrome

Reactive inflammation

Inflammatory bowel disease

Nevertheless patients withHLB-B27 haplotype and anterior uveitis have no associated systemic illness

ANKYLOSING SPONDYLITIS

Ocular involvement occurs in 25% of patients with ankylosing spondylitis. Both eyes are involved in 80% of patients but they are rarely inflammed. Ocular findings are conjunctivitis and iritis. The disease course is variable. Recurrance of inflammation can occur as frequently as every 2-3 weeks. Anterior uveitis with ankylosing spondylitis usually has a presentation similar to idiopathic anterior uveitis.

PSORIATIC ARTHROPATHY

Psoriasis is a skin disease caused by hyperproliferation of the epidermis with resultant scaling. Uveitis occurs predominantly in patients who develop arthropathy.20% of patients with psoriasis develop psoriatic arthropathy and about 20%of these patients develop uveitis, sacroilitis and ascending spine disease. The arthropathy usually involves the distal joints of hands and feet as well as sacroiliac joint. Uveitis predominently involves the anterior segment of eye and is similar to HLA-B27 associated disease.

REITER'S SYNDROME

It is a systemic disorder characterised by arthritis, conjunctivitis and urethritis.

First described in 1818 but named after Reiter who described the entity in1916.it is the most common cause of inflammatory oligoarthropathy in young males and similar to ankylosing spondylitis and it is related to both HLA-B27 and to a specific infection that may trigger the disease. The disease develops in atleast 1% of patients with nonspecific urethritis and occurs in about 2% of patients with shigella dysentery. Other systemic association include a scaling skin eruption

called keratoderma blennorrhagicam,balanitis and aphthous stomatitis. Rheumatologic features of disease include arthralgias, plantar fasciitis and tenosynovitis. About 20% of patients with reiter syndrome develope sacroilitis and ascending spinal disease similar to ankylosing spondylitis. Hyperkeratotic skin lesions occur and may be indistinguishable from psoriasis. Conjunctivitis is the most common ocular finding in patients with Reiter's syndrome and occur in 30% - 60% of patients. Iritis and keratitis are less common. Iritis occur in 3%-12% of patients and is nongranulomatous and mild. The keratitis is characterised by multifocal punctuate subepithelial and anterior stromal infiltrates. A small pannus may also develope. Reiter's syndrome may occur after gram negative dysentery or after nongonoccocol urethritis as a result of chlamyidia trachomatis and ureaplasma urealyticum.

INFLAMMATORY BOWEL DISEASE

Patients with ulcerative colitis and Crohn's disease can develop uveitis.5% of patients with ulcerative colitis will develop ocular disease. Conjunctivitis, episcleritis and anterior uveitis are most commonly described. Posterior uveitis may also occur.

Similar ocular inflammatory disease has been associated with Crohn's disease.

WHIPPLE DISEASE

Systemic disorder characterized by malabsorption causing chronic diarrhoea. Anterior uveitis and vitritis have been rarely reported. Because antibiotic therapy can effectively treat this disease it is important to diagnose whipple's disease in uveitis patients with gastrointestinal symptoms.

JUVENILE RHEUMATOID ARTHRITIS

The diagnosis of JRA is based on the presence of arthritis in children under the age of 16 years and is usually found by negative Rh factor test result and there is no other cause for the joint disease. Joint inflammation maybe polyarticular or pauciarticular and majority of the patients are Rh factor negative. Systemic form of JRA is characterized by systemic polyarthritis with an associated fever, rash, hepatosplenomegaly and leucocytosis

Uveitis is rare in children with systemic JRA. Patients with polyarticular arthritis only occasionally develope uveitis. Patients

with pauciarticular form of JRA are at much higher risk for the development of ocular inflammation. Girls with pauciarticular arthritis and positive result of an ANA test are at higher risk for developing chronic iridocyclitis. High risk of uveitis is associated with arthritis sparing the wrist but involving a lower extremity joint.75% of boys with pauciarticular arthritis are HLA-B27 positive and the ocular inflammation they develop is similar to ankylosing spondylitis.

Uveitis is characterised by an acute episodic non granulomatous anterior uveitis and some of the boys go on to develop ankylosing spondylitis later in life.

DISEASE ASSOCIATIONS

FUCHS' HETEROCHROMIC IRIDOCYCLITIS

In 1906 Fuchs described 7 patients with heterochromic iridocyclitis and later described 38 patients with the disease and reported on the pathologic features of 6 eyes. Fuchs observed that most patients with this disorder develop cataract. The typical patient is young and presents with iris heterochromia and a mild disturbance of vision. Anterior chamber inflammation is mild and low grade vitritis may be seen. Many patients are unaware of their disease until their vision decreases because of cataract or glaucoma.

KAWASAKI DISEASE

It is also called mucocutaneous lymphnode syndrome is a disease of children and young adults, characterised by an erythematous and desquamative exanthema, oral mucosal erythema, conjunctivitis, fever, and an asymmetric cervical adenopathy. Anterio uveitis has also been noted in many patients with this disorder. The uveitis does not appear to be severe or chronic and usually resolves without therapy. Optic disc odema and dilated retinal veins may also be seen. Kawasaki disease have an antibody to a interferon-activated

endothelial cells from the umbilical vein that express major histocompatability complex class 2 antigens. In one study 66% of patients had evidence of anterior uveitis that occurred most commonly during the first week of illness.

ANTERIOR UVEITIS ASSOCIATED WITH RENAL DISEASE

Anterior uveitis has been associated with interstitial nephritis. Patients usually present with an acute uveitis and later develop manifestations of acute interstitial nephritis with cellular casts in the urine. Anterior uveitis has been reported in patients with IgA Nephropathy. This disease often occurs in children and is associated with an upper respiratory tract infection. The uveitis appears to occur with the pulmonary disease and responds to standard therapy.

GLAUCOMATOCYCLITIC CRISIS

Also known as Possner Schlossman syndrome is inflammatory glaucoma manifested by fine KPs mydriasis and elevated intraocular pressure.

SCHWARZ SYNDROME

Rhegmatogenous retinal detachment is frequently associated with a mild reduction of IOP. In some patients IOP is elevated and associated with anterior uveitis .

ANTERIOR SEGMENT ISCHAEMIA

Anterior segment ischemia caused by carotid artery insufficiency may simulate an anterior uveitis in older patients with the presence of cells and flare.

LENS INDUCED ANTERIOR UVEITIS

Anterior uveitis occurs in association with several forms of lens induced glaucoma. Phacolytic glaucoma occurs when a hypermature cataract leaks liquefied cortical material into the anterior chamber. Phaco antigenic glaucoma occurs after rupture of the lens capsule is characterised by conjunctival chemosis and anterior segment inflammation that develops within days to weeks after the capsule disruption. Phacotoxic glaucoma may also occur after cataract extraction or traumatic rupture of the lens capsule.

ANTERIOR UVEITIS ASSOCIATED WITH AIDS

Anterior uveitis is found in a number of patients AIDS. The anterior uveitis is often associated with other infectious disease such as syphilis. Cytomegalovirus retinitis, toxoplasmosis, herpes simplex or herpes zoster. A mild anterior uveitis may be associated with HIV virus infection in the absence of coinfection. In addition anterior uveitis may result as an adverse reaction to one of the many medications that patients with AIDS receive.

INFECTIOUS CAUSE OF ANTERIOR UVEITIS

OCULAR TUBERCULOSIS

Ocular involvement, particularly intraocular by the tubercle bacillus [mycobacterium species] remains a presumptive one because these bacilli are only rarely isolated for want of adequate tissue specimen. This should be suspected in any patient of uveitis [anterior/posterior] wherein

- the disease is chronic and non responsive to conventional treatment
- history of systemicTB is positive or radiographic signs
- mantoux reaction is strongly positive
- patient responds to a therapeutic trial
- PCR for mycobacteria is positive

Clinically, tubercular uveitis does not have any distinct features excepting that it is usually granulomatous in nature. Reaction in the anterior chamber and vitreous is usually variable. Choroidal involvement can be unifocal or multifocal choroiditis. Miliary tubercles and giant granuloma may sometimes be present. The mainstay of treatment of tubercular uveitis is administration of course of ATT.

LEPROSY

Uveal involvement may occur in both the tuberculoid and lepromatous forms of systemic disease caused by mycobacterium leprae.due to decrease in endemicity and appropriate drug regimens. Cases of leprosy with ocular involvement are less frequently encountered now. In leprosy uveal involvement is confined to the anterior uvea and the usual manifestation is that of an acute or chronic iridocyclitis and associated complications such as cataract and glaucoma. Clinically in chronic iridocyclitis there may be present white granulomas [lepra pearls] on the iris stroma. With time the pupil becomes miosed and the iris may have a moth eaten appearance. Most eyes with uveal involvement, other obvious systemic and ocular signs are present [eg; madarosis, lagophthalmos, loss of corneal sensation, neuroparalytic keratitis]. In the management such uveitis it is important to remember that both initiation and withdrawal of treatment with dapsone may worsen the ocular inflammation transiently.

VIRAL

HERPES ZOSTER UVEITIS

Anterior uveitis is usually nongranulomatous iritis with mild to moderate flare and cells. 40% of patients with herpes zoster ophthalmicus eventually develop iritis. It is particularly more likely in those with involvement of the nasociliary branch. [Hutchinson's rule]. The uveitis has certain features such as fine scattered keratic precipitates, decreased corneal sensation, sectoral iris atrophy and a hypopyon tinged with blood.

HERPES SIMPLEX

Granulomatous CAU which may be associated with trabeculitis and high IOP [hypertensive uveitis], may occur with or without active corneal disease. Iris atrophy is often patchy and occasionally sectoral is common. Spontaneous hyphema may also occur but is uncommon.

OTHER DISEASE ASSOCIATION

- Infectious causes of uveitis such as syphilis. Herpes simplex, herpes zoster and toxoplasmosis are frequently accompanied by an anterior uveitis.
- Non infectious causes of uveitis such as Behcet's syndrome. Sarcoidosis multiple sclerosis are also associated with anterior segment inflammation.

- Anterior uveitis may also be caused by postoperative infection.
- Acute bacterial endophthalmitis may present with a hypopyon.
- Propionibacterium acnes infection has been associated with an indolent smoldering anterior uveitis after cataract surgery.
- Anterior uveitis may also be sign of corneal allograft rejection, especially when seen in conjunction with corneal inflammation such as a Koudadoust line.
- Anterior uveitis can occur after immunisation or vaccination and may develope as a toxic effect of certain medications.
- Finally a number of malignancies such as Leukaemia, Retinoblastoma and Intraocular lymphoma may masquerade as an idiopathic anterior uveitis.

TREATMENT OF ANTERIOR UVEITIS :

Treatment of uveitis is undertaken in a rational manner only by first categorizing the nature of uveitis and then defining the treatment objectives.

Categorization is based on several attributes such as

- anatomical (anterior, intermediate, posterior)
- etiological (infectious, non infectious)
- clinical (acute, chronic, recurrent)
- with / without systemic association
- vision threatening
- peripheral / dormant

Objectives of treating any patient with anterior uveitis is

a) To rapidly curtail the inflammatory process so as to prevent or decrease risk of vision threatening complications.

Eg. Cyclitic membrane formation

Secondary glaucoma

Scarring

Oedema

b) To restore vision when possible

Eg : by cataract surgery

c) Symptomatic relief

Eg. During acute iridocyclitis

d) To manage associated systemic disease

Eg. Tuberculosis

Syphilis

MEDICAL TREATMENT

I - Mydriatics

Preparations :

Topical Medications :

a) Short acting

i) Tropicamide (0.5% & 1%) has duration of 6 hours

ii) Cyclopentolate (0.5% & 1%) has duration of 24 hours

iii) Phenylephrine (2.5% & 10%) has duration of 3 hours but no cycloplegic effects

b) Long acting

i) Homatropine 2% has duration of 48 hours

ii) Atropine 1% is the most powerful cycloplegic and mydriate with duration of up to 2 weeks

Sub conjunctival mydricaine

INDICATIONS :

a) To promote comfort by relieving spasm of ciliary musle and papillary sphincter

b) To prevent formation of posterior synechiae

c) To bread down recently formed posterior synechiae

II - TOPICAL STEROIDS

Topical steroids are useful only for anterior uveitis because therapeutic levels are not reached behind the lens.

Solution penetrates the cornea better than a suspension or ointment

The frequency of instillation of drops depends on the severity of the inflammation.

PREPARATIONS

A) SUSPENSION

i) Prednisolone acetate (0.125% - 1%)

ii) Dexamethasone acetate (0.1%)

iii) Fluonometholone (0.1% - 0.25%)

B) SOLUTIONS

i) Prednisolone sodium phosphate (1%)

ii) Dexamethasone phosphate (0.1%)

iii) Betamethasone phosphate

INDICATIONS

a) Treatment of AAU : is relatively straight forward and depends on the severity of inflammation

* Initial intensive therapy involves instillation either hourly or every minute for the first 5 minutes of every hour

* Once the inflammation is well controlled the frequency should be carefully tapered to 2 hourly and followed by 3 hourly and gradually tapered.

b) Treatment of CAU :

It is more difficult because the inflammation may last for months and even years so that long term steroids are often required with the risk of complications such as cataract and steroid induced elevation of intraocular pressure.

i) Weak steroid preparation such as rimexolone or loteprednol stabonate, may be attempted particularly in steroid reactors as they have much lesser propensity for elevation of intraocular pressure but are less effective in controlling the inflammation.

ii) It may be difficult to discontinue therapy since exacerbation are common. Exacerbations are initially treated in the same way as AAU. If the inflammation is controlled with no more than +1 aqueous cells, the rate of instillation can be gradually reduced to one drop / month.

iii) The measurement of the flare gives a direct quantification of the integrity of the blood aqueous barrier. The intensity of the flare can also indicate an active process which may respond to therapy.

Complications :

a) Elevation of IOP is common in susceptible individuals (steroid – reactors) but long term exposure to topical steroids may eventually result in ocular hypertension in many patients.

b) Cataract is induced by both systemic and less frequently, topical steroid administration. The risk increases with dose and duration of therapy.

c) Corneal complications which are uncommon include secondary infection with bacteria and fungi, recrudescence of herpes simplex keratitis and corneal melting, which may be enhanced by inhibition of collagen synthesis.

d) Systemic side effects are rare, but may occasionally occur following prolonged administration, particularly in children.

III – SYSTEMIC STEROIDS

Occasionally depending upon the severity of the presentation and bilateral involvement systemic corticosteroids can be used

Dosage and preparation oral prednisone 1-2 mg / kg / day

The high dose is maintained until one sees clinical effect. Slow tapering plan permits the treating physician to see if the reduction will cause a reactivation.

IV – SPECIFIC TREATMENT

ATT for ocular tuberculosis associated anterior uveitis

Antimicrobial therapy for syphilis

SURGICAL MANAGMENT

Despite even optimal medical therapy to control ocular inflammation, structural damage will develop in many eyes with chronic inflammation which can be repaired only by surgical intervention.

Considerations :

Corticosteroids are used in the preoperative period for control of inflammation

It is critical to examine patients with uveitis daily during the first 5-7 days after surgery.

1. Band Keratopathy :

Calcium hydroxyl apatite accumulates in Bowman's membrane of the cornea in some patients JRA. Chelation with 1% to 2% ethylene diamino tetraacetic acid (EDTA) can be performed under LA, the age of most patients with this condition makes general anaesthesia necessary.

2. Cataract Surgery :

- Cataract is extremely common in Fuch's heterochromic cyclitis and is often the presenting feature. Results of surgery of PCIOL implantation is good.

- The treatment for phacolytic glaucoma is lens removal, done after IOP is controlled medically. Care should be taken not to rupture the zonules when performing anterior capsulotomy.

3. Glaucoma Surgery :

It has been estimated that about 18% of uveitis eyes and almost 20% of patients with uveitis will develop secondary glaucoma. Secondary glaucoma that cannot be controlled by medical therapy is sometimes a consequence of severe anterior segment inflammation. It is important to differentiate between papillary block glaucoma and secondary angle closure by PAS.

It may be difficult to distinguish papillary block glaucoma in some patients with chronic inflammation and posterior synechiae that involve the entire lens surface. Laser iridectomy will confirm the diagnosis and also be therapeutic.

Filtering surgery such as trabeculectomy in performed when the eye is quiet. Drugs such as 5-Fluorouracil and Mitomycin C are used to improve the success of filtering surgery. Another approach in most cases of uveitis in the use of aqueous draining device.

If the aforementioned surgical approaches fail, aqueous formation is decreased by cyclotherapy or laser destruction.

AIM OF THE STUDY

Etiological pattern of anterior uveitis in a referral hospital

1. To identify the different causes of anterior uveitis and syndromes causing anterior uveitis in our hospital population.

2. To compare the pattern of anterior uveitis with that of the other studies

MATERIALS AND METHOD

STUDY DESIGN AND METHODOLOGY

A prospective study of 83 cases of anterior uveitis was conducted at uvea clinic, Department of Ophthalmology, GRH during the period from January 2008 to June 2008. Any case of anterior uveitis that was presented for the first time to our hospital was included in the study. Lens induced uveitis like phacolytic glaucoma was also included in the study. Cases of anterior uveitis secondary to trauma was also included. Cases with corneal pathology like infection were excluded from the study. Cases were followed up for a period of 4-5 months from the period of onset and were documented thereby avoiding repetition. After clinical examination the defined cases were subjected to a battery of questions regarding the time of onset progression and regarding various etiologies associated. The patients were subjected to relevant laboratory investigations, a clinical diagnosis made and appropriate treatment started.

AGE :

- HLA-B27 associated uveitis and Behcet syndrome usually affect young adults
- Uveitis associated with JRA and ocular toxocariasis typically affects children

- It is less common for primary uveitis to first manifest in old age, suspect a masquerade syndrome.

SEX :

- JRA common in girls than boys
- Ankylosing spondylitis common in males
- Behcets and trauma more common in males

ADDRESS :

Geographic location may be of importance because infectious uveitis may be endemic in certain locations laterality. Often unilateral in Fuch's heterochromic cyclitis ankylosing spondylitis often bilateral in Behcet's disease

- Socioeconomic status
- Presenting complaint in detail
- Leading questions regarding various etiological factors
- Any systemic disease associated : diabetes / cancer / syphilis / tuberculosis / leprosy
- Treatment history : corticosteroids – mode of administration,dose and duration
- Past history of Trauma,eye surgery,eye inflammation

EXAMINATION

Local Examination : Lids and surrounding skin

Lacrimal gland enlargement

Ocular examination

1. Visual acuity [Best corrected]

2. IOP at presentation

3. Slit lamp examination, specifically for type of keratic precipitates, anterior chamber reaction and consistency of hypopyon, iris changes, syenechiae, lens changes and examination of anterior vitreous face.

4. Fundus examination after dilatation by IDO and +90 D slitlamp biomicroscopy.

SYSTEMIC EXAMINATION

Skin / hair /nails / mouth ulceration /arthritis

Gut involvement / lungs / urethritis /CNS involvement

According to the need and specification patients were subjected to laboratory investigation.

The investigations included

Total leucocyte count

Differential count

Erythrocyte sedimentation rate

Mantoux test

VDRL

ELISA for HIV I & II

Rheumatoid factor

Ultra sound B scan for posterior segment

X ray chest and sacroiliac joint

The final aetiological diagnosis was made based on the clinical features, relevant investigations and systemic evaluation by medical specialities.

RESULTS AND COMPARATIVE ANALYSIS

DEMOGRAPHY BY LOCATION

Table 1: Age distribution

Age group	Cases	
	No.	%
Upto 20 years	6	7.2
21-30	11	13.3
31-40	20	24.1
41-50	15	18
51-60	17	20.5
Above 60 years	14	16.9
Total	83	100

Table -1 shows the age distribution. Most number of cases of anterior uveitis occurred in the third to fourth decade of life with maximum number of cases 20 [24.1%] occurring in the third decade.

Table 2: Sex distribution

Sex	Cases	
	No.	**%**
Male	52	62.7
Female	31	37.3
Total	83	100

Table -2 shows the sex distribution wherein around 52 [62.7%] of patients were males and the rest of the patients with anterior uveitis about 31 [37.3%] were females.

Table 3: Range of Occurrence

Range	16 – 76
Mean	41.8 years
S.D.	15.1 years

Table 3 shows, Age of the patient who were included in the study ranged from 16 to 76 years with mean age of 44.8 with S.D of 15.1 years.

The mean age at presentation of anterior uveitis was found to be 41.8%. In one study by Rodriguez et al showed a mean [±SD] age at presentation of anterior uveitis to be 39.8 [±18.3].in the same study the percentage of male population with uveitis accounted for 41.3 % and females 58.7 % ,whereas in our study it showed 62.7 % and 37.3 % respectively. Such a low percentage of female population is probably due to poor socioeconomic status making them work with a disease of the eye than to attend the hospital. The demographic pattern in our study is more or less correlating with other studies

Table 4: Laterality

Laterality	Cases	
	No.	**%**
Right eye	45	54.2
Left eye	34	41
Both eyes	4	4.8
Total	83	100

Table 4 shows the laterality, where out of 83 cases 45 [54.2 %] had right eye involvement while 34 patients 41 %] had their left eye affected. 4 cases [4.8 %] had bilateral involvement.

Table 5: Chronology

Acute / Chronic	Cases	
	No.	**%**
Chronic	6	7.2
Acute	77	92.8
Total	83	100

Table -5 shows the pattern of anterior uveitis where the number of patients with acute anterior uveitis presentation was 77 [92.8 %] and 6 cases [7.2 %] were chronic anterior uveitis.

Table 6 : Type of Inflammation

Type of Inflammation	Cases	
	No.	%
Granulomatous	6	7.2
Non granulomatous	77	92.8
Total	83	100

Table 7 : Iris Nodules

Iris Nodules	Cases	
	No.	%
Present	7	8.4
Absent	76	91.6
Total	90	100

The type of inflammation is showed in table 6 where the non granulomatous type was present in 7.2% and the rest 92.8% had non granulomatous type of inflammation.

Among the 83 cases of anterior uveitis 77 had an acute onset among which 1 case was recurrent which was a case of inflammatory bowel disease associated anterior uveitis

In contrast to the study by Rodriquez et al we have more of acute uveitis than chronic uveitis and recurrent uveitis. This is probably because of early referral by the physician / ophthalmologist from rural areas to the tertiary hospital because of lack of facilities like slit lamp and indirect ophthalmoscopy for diagnosing and early intervention , whereas in developed countries where there are facilities they refer cases only after a proper initial treatment in the peripheral centre. This might be the cause of a higher percentage of chronic uveitis in tertiary centre than acute cases.

The percentage of granulomatous and nongranulomatous uveitis detected in our study is based only on the clinical picture and not by histopathological examination which is difficult in our setup and also that the patients cannot afford. With the clinical identification in our study the percentages are in par with major studies as that of Rodriquez et al which was 89.8% and 10.2% respectively.

Laterality of the ocular involvement cannot be predicted properly as it depends on the presentation of uveitis. As in our study 95.2 % had unilateral involvement and 4.8 5% had bilateral involvement.

The study showed the presence of iris nodules in cases of chronic anterior uveitis wherein there was the presence of koeppe’s nodules in case with tuberculosis as the etiology

Table 8: Final Diagnosis

Final Diagnosis	Cases	
	No.	**%**
1. Idiopathic	36	43.9
2. HLA – B27 related	4	4.9
3. Viral Kerato uveitis	2	2.4
4. Traumatic anterior uveitis	16	19.5
5. Tuberculosis	3	3.7
6. Fuch's heterochromic uveitis	1	1.2
7. Hansen's uveitis	2	2.4
8. Lens induced uveitis	5	6.1
9. RD induced uveitis	1	1.2
10. Sclerokerato uveitis	1	1.2
11. Inflammatory bowel disease	1	1.2
12. Post operative uveitis	10	12.2
Total	83	100

Table 8 shows the etiological association in patients with anterior uveitis. The arrival to the final diagnosis was based on only clinical findings in certain cases, while others were confirmed with the help of laboratory investigations that are mentioned and a few cases were arrived wherein the etiology was strongly suspected based on the clinical presentation an negative laboratory results. Our study showed the commonest cause of anterior uveitis to be idiopathic where 36 [43.9 %]out of 83 cases had no identifiable aetiology. Next came trauma and post operative uveitis that were 16 [19.5%] and 10 [12.2]respectively. HLA-B27 associated anterior uveitis was suspected in about 4 [4.9%] of the patients.3 [3.7%] cases of anterior uveitis were of tuberculosis etiology.2 [2.4%] cases were due to leprosy .one case each of fuch's heterochromic iidocyclitis, inflammatory bowel disease, sclerokeratitis and retinal detachment associated anterior uveitis. Herpetic anterior uveitis was the cause in 2 [2.4%] cases.

Table – 9

COMPARATIVE ANALYSIS OF ASSOCIATED CONDITIONS IN ANTERIOR UVEITIS

	England study 1916	USA study 1986	Israel study 1988	Present study 2008
Idiopathic	271 /44.1	72 /43.1	94 /51.4	36 /43.9
Trauma / surgery	--/--	10 /5.9	32 /17.5	26 /31.7
Herpes simplex	---/--	10 /5.9	14 /7.7	---/-
JRA	1 /0.2	17 /10.2	7 /3.8	---/--
Fuch's hetero chromic iridocyclitis	30 /4.9	11 /6.6	6 /3.3	1 /1.2
Leukaemia	---/--	---/--	4 /2.2	---/---
Reiters disease	---/---	6 /3.6	3 /1.6	---/---
TB	158 /25.7	---/--	3 /1.6	3 / 3.7
Leprosy	2 /0.3	---/---	3 /1.6	2 /2.4
Syphilis	----/---	5 / 3.0	1 10.5	---/--
Herpes zoster	---/--	5 /3.0	1 /0.5	2 /2.4
IBD	--/--	2 /1.2	1 /1.05	1 /1.2
Glaucomatocyclitic crisis	---/---	2 /1.2	1 /0.5	---/--
Others	55 /8.9	--/--	5 /2.7	12 /14.4
Total	614 /100	167 /100	183 /100	83 /100

In the comparative analysis of associated conditions in anterior uveitis in our study with that of other international studies, it was found that idiopathic uveitis formed the most common entity, with England study

[1961] showing 44.1% ,USA study [1986] showing 43 .1%, Israel study [1988] showing 51.4 % and our study showing 43.9 %.trauma and surgery formed 5.9% in the USA study and 17.5% and 31.7 % in Israel and our study respectively.

Herpes simplex was the causative factor of 5.9 % and7.7 % in the USA and Israel study respectively, the England study and ours had none. JRA formed 0.2 % in the England study ,10.2 5 in the USA study and 3.8 % in the Israel study with our study having no such case. Fuch's was detected in 4.9 % in England study, 6.6% in USA study ,3.3% in Israel study and 1.2 % in our study. Leukaemia was the cause in2.2% of cases in the Israel study while there were no such cases in the England,USA and our study.

Reiter's disease was seen 3.6% of anterior uveitis in the USA study and 1.65 in the Israel study and none in the England and our study.TB was found in 25.7% in the England study, 1.6% in the Israel study and 3.7 % in our study. Leprosy was seen in 0.35 in the England study, 1.6 % in the Israel study and 2.4 % in our study. Syphilis was the causative organism in 3.0% of cases in the USA study and 0.5% in the Israel study and no cases in the England study and our study. Herpes zoster uveitis was seen in 3.0% in the USA study, 0.5% in the Israel study and 2.4 % in our study. IBD associated uveitis seen in 1.2% in the USA study ,2.7% in the Israel study and 1.2 % in our study with no cases in the England study. Glaucomatocyclitic crisis was seen in 1.2% in the USA study,0.5% in the Israel study and none in the England and our study. Other causes contributed about 8.9% in the England study,2.7% in the Israel study and 14.4 % in our study.

Table – 10

COMPARISON OF AETILOGICAL DIAGNOSIS OF ANTERIOR UVEITIC ENTITIES.

Diagnosis	Henderly et al 1987(I) %	Latanza et al 1991(II) %	Das et al 1995(III) %	Present Study 2008(IV) %
Idiopathic	12.1	36.8	17.8	43.9
Fuch's hetrochromic cyclitis	1.8	1.4	1.5	1.2
Herpetic uveitis	2.5	3.00	0.2	0.2
Traumatic	0.7	0	1.1	19.5
Collagen diseases	8.3	6.8	10.7	0
Iol Induced	1	0	3.9	0
Others	1.4	4.00	1.3	24.6
Total	27.8	52	36.5	89.4

In a comparative analysis of the aetiological analysis of anterior uveitis the most commonly found are the idiopathic anterior uveitis, was found to be the most common in Henderly et al study, Latanza study, Das study as in our study showing 43.9%.the percentage of occurance of Fuch's heterochromic iridocyclitis was within 2% in all the studies that have been taken up for comparison with our study which showed a1.2 % result.herpetic anterior uveitis was 2.5% and 3.0% in Henderly study and Latanza study while it was 0.2% in Das study and our study. Traumatic

uveitis was 0.7% in henderly study, 1.1% in Das study and 19.5% in our study. collagen disease as the etiological factor was a significant finding in Henderly study with 8.3%, Latanza study showed 6.8% and Das study showed10.7% and our study did not show any cases with this aetiology. IOLinduced anterior uveitis as the cause was seen with 1% and 3.9% in Henderly study and Das study respectively, while our study and Latanza study showed no cases of anterior uveitis which were IOL induced.

Table 11: Systemic Association

Systemic Association	Cases	
	No.	%
Present	6	7.2
Absent	77	92.8
Total	83	100

In our study of anterior uveitis systemic association was found only in 6 [7.2%] of the cases while the rest 77 [92.85] did not show any systemic association. They were mostly idiopathic or had causative factor confined to the ocular sys tem like post operative uveitis, trauma to the eye, phacolytic uveitis and herpes zoster ophthalmicus.

Table 12: Complications

Complications	Cases	
	No.	**%**
None	67	80.5
Corneal Opacity	11	13.4
Glaucoma	1	1.2
Complicated cataract	3	3.6
Others	1	1.2
Total	83	100

Table 13: Intra Ocular Pressure

Intra Ocular Pressure	Cases	
	No.	**%**
Normal	75	90.4
Raised	8	9.6

We cannot compare our study with that of hatzeistefanou et al where it was 36.2% , because the study was characteristic of uveitis in the elderly patients above 60 years of age.

Table : 14 : Final Visual Acuity

Vision	Presenting Visual acuity		Final visual acutity	
	No.	%	No.	%
6/6 – 6/18	30	38.1	64	77.1
< 6/18 – 6/60	29	36.8	15	18.1
< 6/60 – 3/60	14	16.8	4	4.8
< 3/60	10	8.3	0	0
Total	83	100	83	100

These final tables show the complications that had resulted from the episode of both acute and chronic anterior uveitis in our study.67 cases [80.5%] had no complications and these were mostly idiopathic acute anterior uveits.1 case [1.2%] had secondary glaucoma which was the resultant of chronic topical medication of steroids. complicated cataract was seen in Fuch's heterochromic iridocyclitis and secondary to trauma.corneal opacity resultd secondary to corneal ulcer and trauma in 11 [13.4%] of the cases.

Table 13 shows the raise of IOP during the episode of anterior uveitis both acute and chronic form.75 patients [90.4%] a normal IOP whereas 8 cases [9.6%] showed a raise of IOP which was transient that was due to lens induced uveitis that normalised on lens extraction among which only one resulted in secondary glaucoma as complication due to topical steroid use in IBD.

Visual acuity was between 6/6 – 6/18 in 38.1% and improved 77.1% after the episode of anterior uveitis. It was 36.8% initially and improved 18.1% were visual acuity < 6/18 – 6/60 and preexisting immature cataract contributed significantly to decrease in vision.

SUMMARY

- That the mean age of presentation of the 83 cases of anterior uveitis was found to be 41.8 years with S.D of 15.1 years.
- Sex wise the number of male patients were 62.7% and female patients were 37.3%
- Acute anterior uveitis was seen in 92% of the cases and the rest 7.2% were chronic anterior uveitis.
- Majority of acute anterior uveitis was unilateral with 79 case (95.2%). CAU involved in both eyes seen in 4 cases (4.8%).
- Koeppe's nodule were seen in CAU in 8.4%.
- That 43.9% the majority of the cases that had anterior uveitis were idiopathic
- Trauma and postoperative anterior uveitis were the next major cause with 31.7%
- One case of uveitis was seen in Fuch's heterochromic cyclitis, IBD and RD induced.

- Lens induced uveitis was seen in 5 cases (6.1%), Phacolytic glaucoma and treatment consisted of surgical removal of lens.

- Tuberculosis as cause of uveitis was seen in 3 (3.7%) patients.

- Systemic association was absent in 92.8% of the patients while 7.2% had anterior uveitis associated with a systemic condition

- Complication included complicated cataract 3.6%, secondary glaucoma in 1.2% of patients and corneal opacity following corneal trauma in 13.4%.

- Final visual acuity following treatment of an episode of acute anterior uveitis was excellent in 77.1% of cases. 18.1% had acuity between <6/18 – 6/60 and preexisting lenticular changes contributed to decrease in vision.

DISCUSSION

Anterior uveitis is the most common form of uveitis.

The mean age of the presentation of anterior uveitis in our study was found to be 41.8% with S.D. of ± 15.1 years. This finding is more or less correlated with one study by Rodrigurez et al where it showed a mean of 39.8% and S.D of ± 18.3.

In our study males and females contributed 62.7% and 37.3% respectively whereas study by Rodrigurez et al showed as slightly higher percentage of men. Such low percentage of female population in our study is probably due to poor socio economic status of our study population where they had to work with disease of the eye than to attend hospital.

The same study showed high number of chronic and recurrent uveitis whereas our study shows acute uveitis because our patients had early referral from rural areas to the tertiary hospital because of lack of facilities.

The percentage of granulomatous and non granulomtous uveitis based on clinical identification was in par with major studies as that of Rodriguerez et al.

Commonest cause of anterior uveitis was idiopathic in our study and was 43.9% which was more or less similar to that of other international studies like England study (1916) 44.1%, the USA study 1986 which showed 43.1% and the Israel study 1988 which had 51.4%. Similar findings were seen with respect to Herpes Zoster ophthalmicus, IBD, Leprosy.

The idiopathic anterior uveitis as the etiological factor was also found in the Latanza et al study. Fuch's heterochromic cyclitis was 1.2% in our study and was comparable to Henderly et al study which showed 1.8%, Latanza et al study 1.4%, Das et al study 1.5%.

Herpetic uveitis was 0.2% in our study showing similarity with Das et al study which was also 0.2%

Our study was not a population based study but we still find that our study findings is comparable with our studies.

CONCLUSION

The cause of uveitis vary greatly by geographical region throughout the world. Such variation is due largely to complex ecological, racial, nutritional and socioeconomic differences. Many developing countries have a tropical climate allowing unique disease pathogens, vectors and host reservoir to flourish. Poverty, overcrowding, limited formal and public education, poor hygiene and finite medical resources also play a role. The perineal migration of people from city to city and around the world requires that all phycisians be aware of global variations in disease pattern to provide optimal medical care.

There are an estimate 45 million blind people in the world today of whom approximately 75% live in developing nations. Although data on the prevalence and incidence of uveitis as a cause of vision loss in developing region are scarce, it is probably safe to say that ocular complications of well recognised and endemic infection constitute a major cause of blindness. we review those infectious and non infectious cause of anterior uveitis encountered most often in the developing world.

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PROFORMA

UVEITIS SURVEY DATA SHEET

NAME Age Sex: M / F Date

Occupation Address OPno

History : pain, redness, photophobia, defective vision

Duration :

Onset : acute / insidious

Severity : mild / moderate / severe

Course : acute / subacute / recurrent / chronic

Previous attack: treated / not treated / stopped / tapering

Past ocular history: trauma / eye surgery

Past medical history: tuberculosis / syphilis / oral and genital ulcers
Leprosy / skin lesions /
Joint pain / inflammatory bowel disease
Medications like rifabutin & cidofovir

Hygiene and dietary habits

History of sexual practices

Recreational drugs

Pets

Family history : TB / chronic infectious disease

Ocular findings : laterality RE LE BE

Severity : mild / moderate / severe

Pathology : granulomatous / nongranulomatous

Anterior segment :

Conjunctiva : congestion / nodules

Cornea : stain / sensation / ulcer

Anterior chamber : flare / cells / haemorrhage / hypopyon

Iris : colour / PS/ PAS / nodules / granulomas / vessels / atrophic patches

Lens : clear / senile cataract / complicated cataract / pseudophakia

Glaucoma : acute / angle closure / steroid induced

Gonioscopy : Open / closed / PAS

Anterior vitreous

Fundus :

Ultrasound B scan :

Investigations :

Date ordered	Laboratory tests	Result

Clinical Diagnosis :

Differential Diagnosis :

1.
2.
3.

Treatment

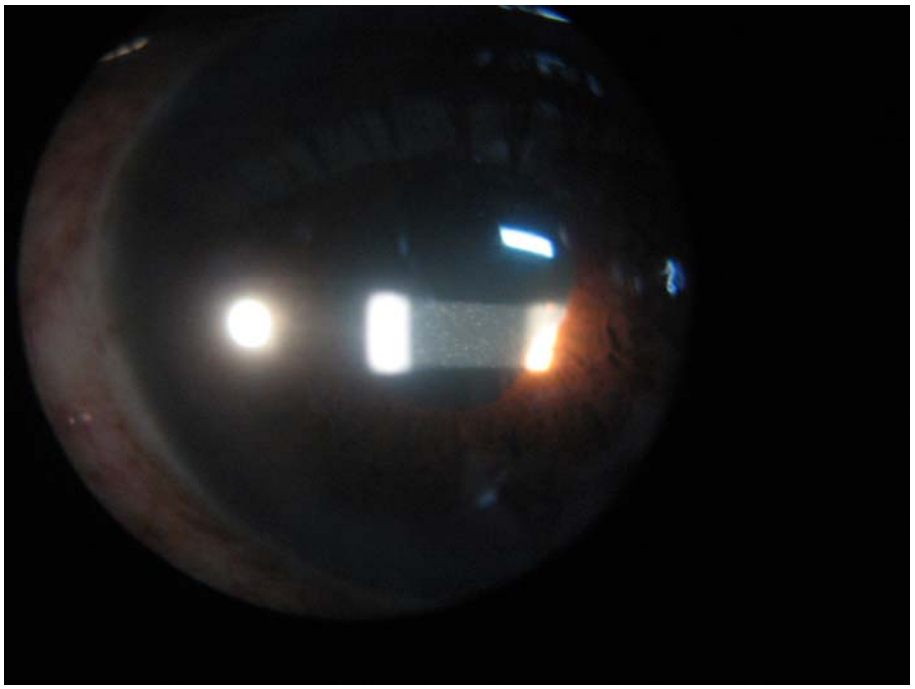
Follow up Plan

To be reviewed on / Review after

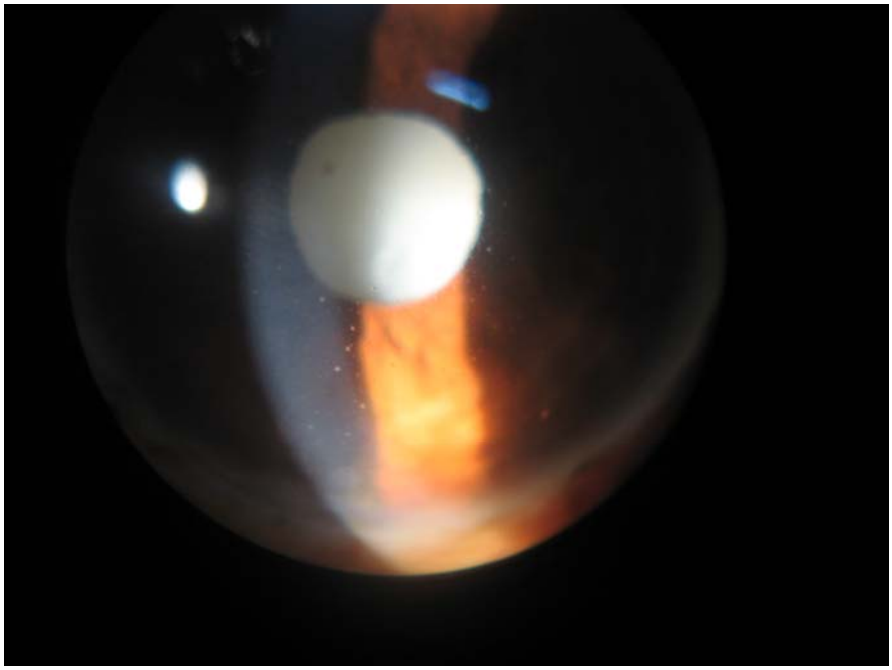
ABBREVIATIONS

ANA	ANTI NUCLEAR ANTIBODY
AAU	ACUTE ANTERIOR UVEITIS
ATT	ANTI TUBERCULOSIS TREATMENT
CAU	CHRONIC ANTERIOR UVEITIS
CMO	CYSTOID MACULAR OEDEMA
IDO	INDIRECT OPHTHALMOSCOPY
IOP	INTRAOCULAR PRESSURE
JRA	JUVENILE RHEUMATOID ARTHRITIS
RD	RETINAL DETACHMENT
PCR	POLYMERASE CHAIN REACTION
KP	KERATIC PRECIPITATES
Rh	RHEUMATOID FACTOR
ACE	ANGIOTENSIN CONVERTING ENZYME
FTA Abs	FLUORESCEIN TEMPONNMAL ANTIBODY ABSORPTION TEST
IC – I	INTERLEUKIN – I
POHS	PRESUMED OCULAR HISTOPLASMOSIS SYNDROME

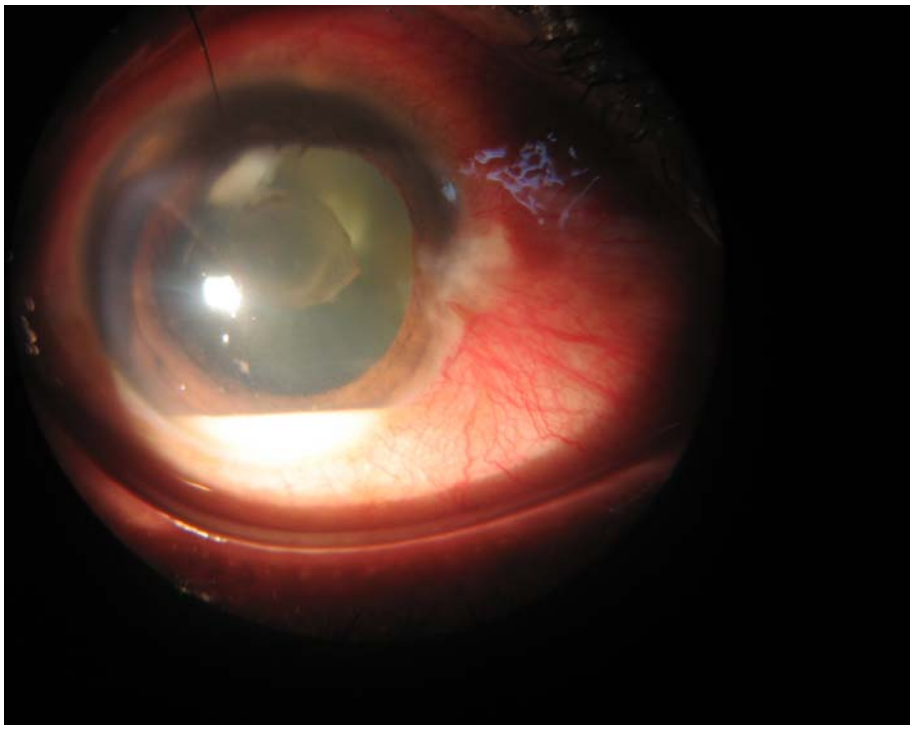
FLARE AND CELLS



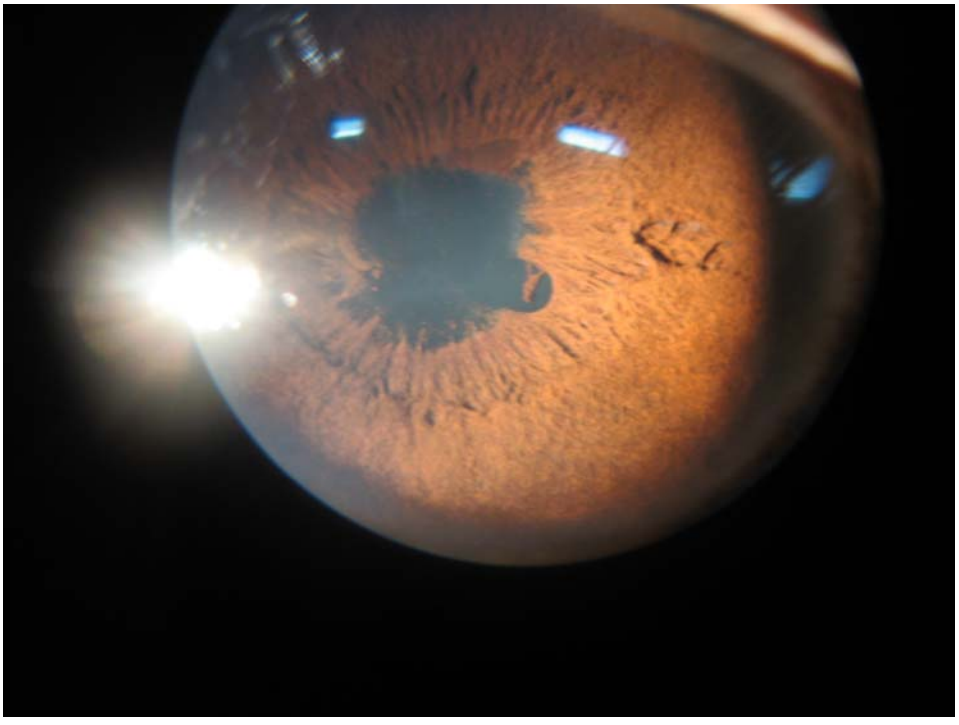
KERATIC PRECIPITATES WITH COMPLICATED CATARACT



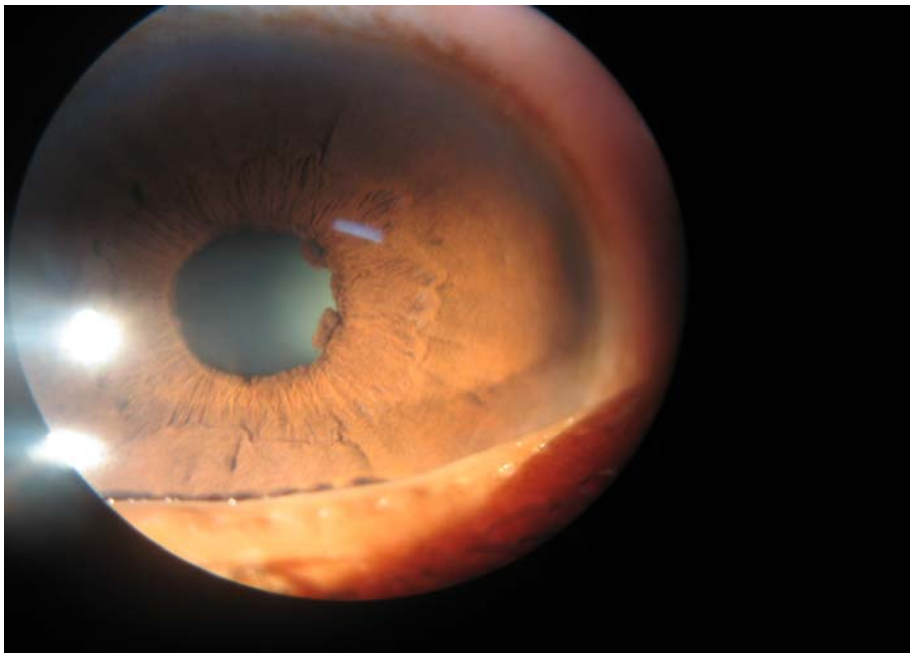
TRAUMATIC IRIDOCYCLITIS WITH HYPOPYON



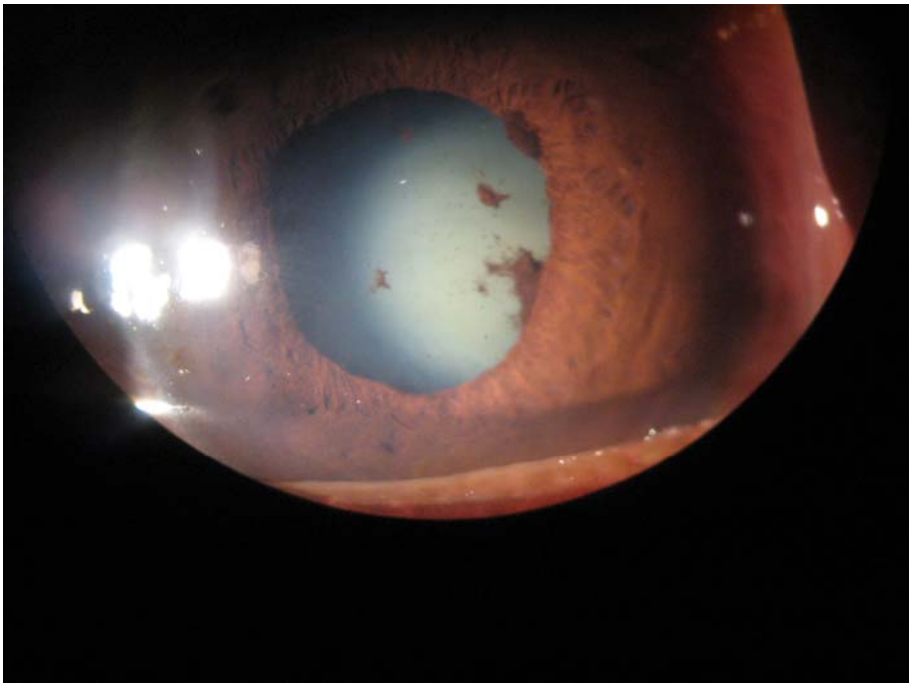
POSTERIOR SYNECHIAE



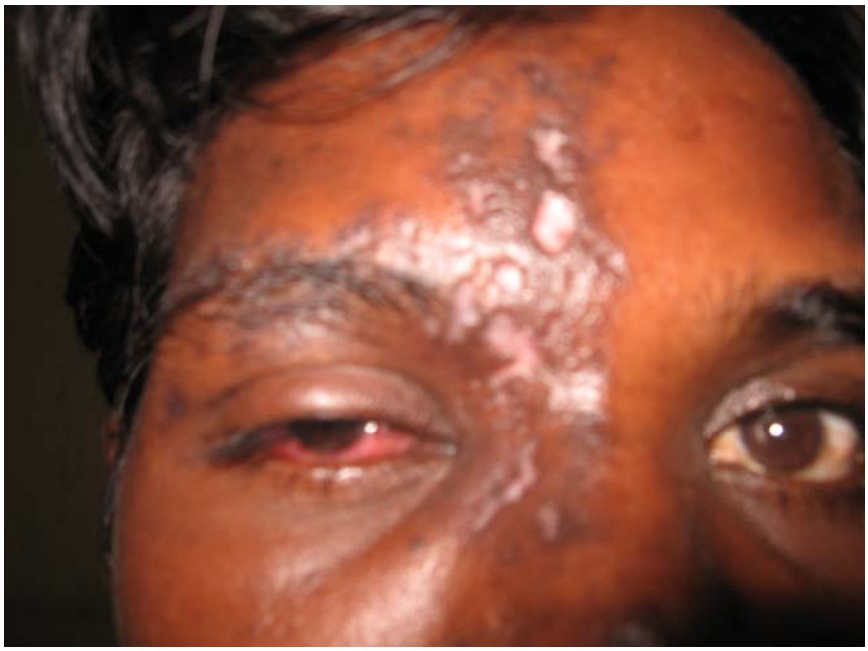
KOEPPE'S NODULES



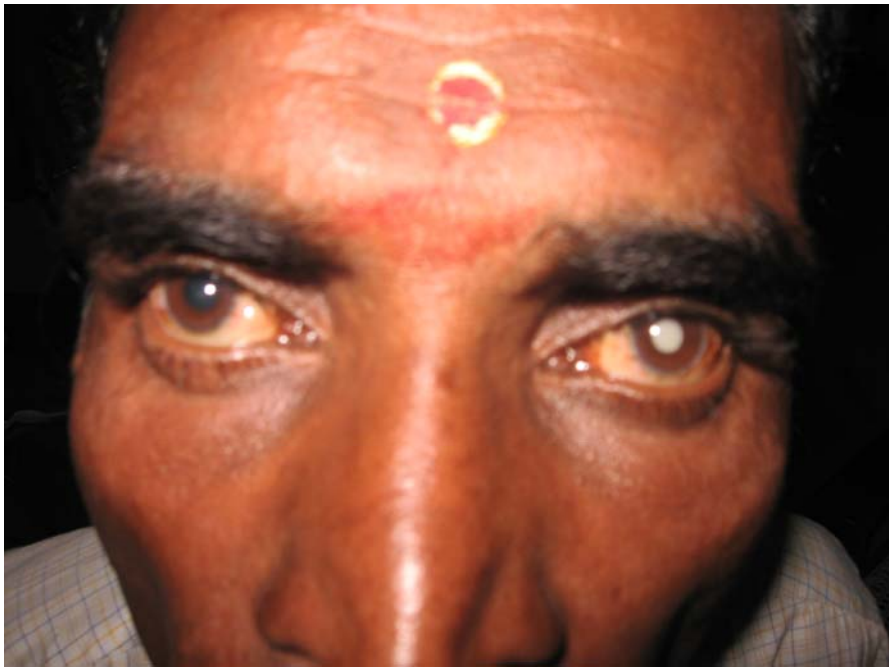
BROKEN POSTERIOR SYNECHIAE



HERPES ZOSTER OPHTHALMICUS

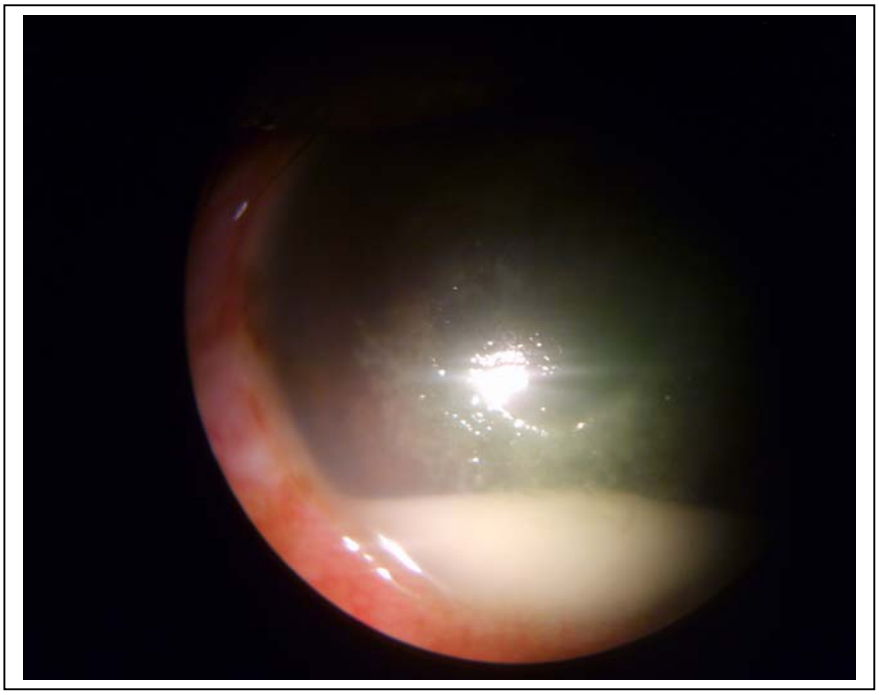


FUCH'S HETEROCHROMIC IRIDOCYCLITIS



TRAUMATIC

CORNEAL ULCER WITH HYPOPYON



MASTER CHART

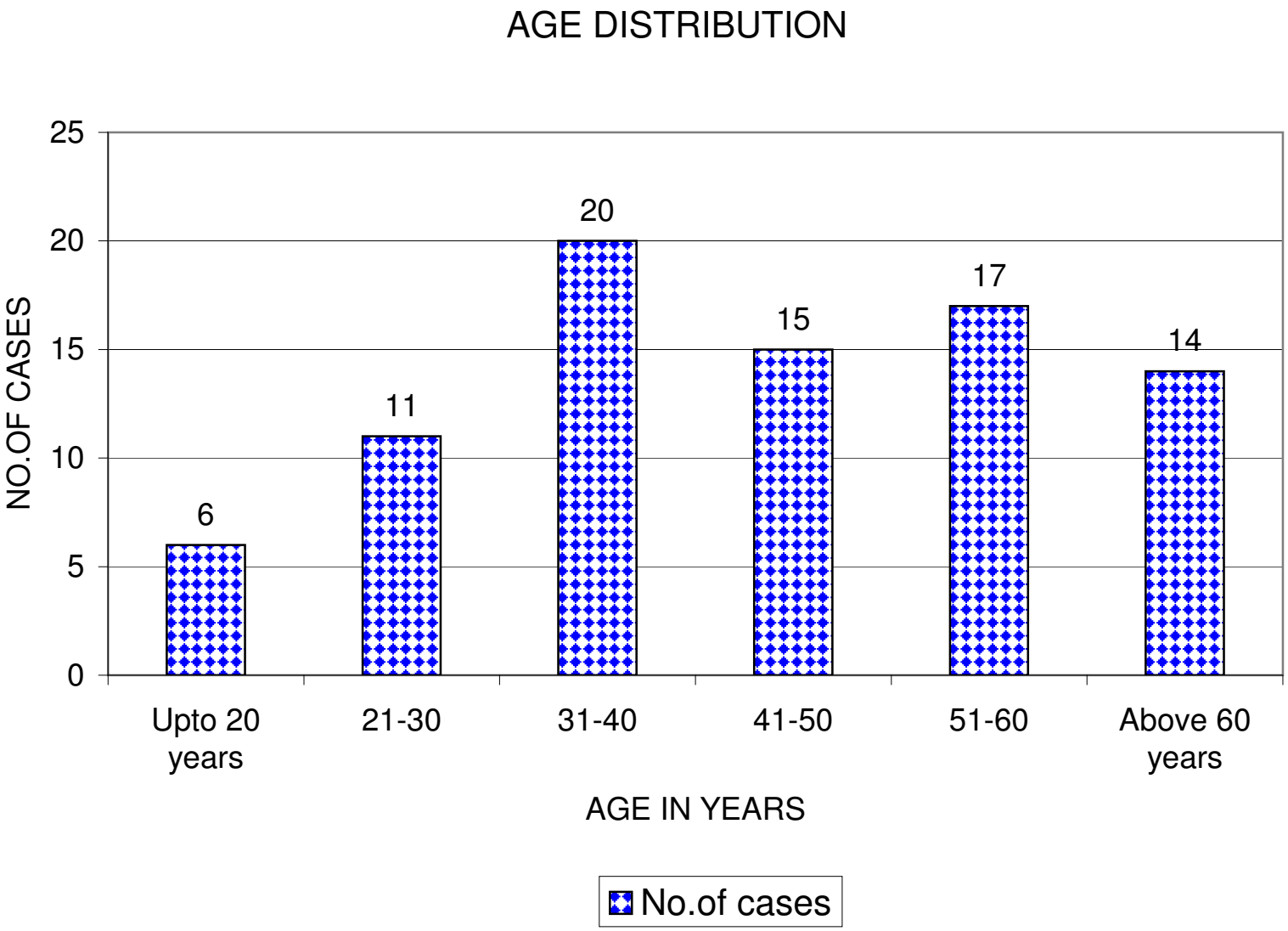
S.NO	NAME	AGE	SEX	OCCUPATION	LAT	VISION RIGHT EYE	VISION LEFT EYE	ACUTE	CHRONIC	CELLS	FLARE	PS	IRIS.NODULES	IOP	CORNEA	LENS	FUNDUS.R	FUNDUS.L	FINAL DIA	FINAL VISION RIGHT EYE	FINAL VISION LEFT EYE	SYS. ASSI	SYS.DISE	HYPOPYON	COMPLICATION
1	BANUMATHY	50	F	HW	RE	CFCF	6/ 6		2	4+	3+	1	2	1	3	3	1	1	12	6/ 18	6/ 6	2	1	1	2
2	PETCHIMUTHU	76	M	COOLY	LE	6/ 36	6/ 24	2		2+	2+	2	2	1	1	1	1	1	1	6/ 36	6/ 18	2	1	2	1
3	CHINNASWAMY	25	M	FARMER	LE	6/ 9	6/ 24	2		2+	3+	1	2	1	2	1	1	1	3	6/ 6	6/ 9	2	1	2	2
4	MOHAN	33	M	HEALTH MAN	LE	6/ 12	6/ 18	2		3+	2+	1	2	1	1	1	1	1	1	6/ 12	6/ 18	2	1	2	1
5	THAYAPPAN	48	M	RICE MILL WORKER	RE	6/ 36	6/ 9	2		2+	2+	2	2	1	2	1	1	1	4	6/ 60	6/ 9	2	1	2	2
6	NAGARAJAN	52	M	H.L. WORKS	LE	6/ 6	HM	2		1+	2+	1	2	1	1	1	1	1	1	6/ 6	6/ 18	2	1	2	1
7	PANCHAVARNAM	58	F	H.W	BE	6/ 36	4/ 60		1	2+	2+	1	1	1	1	1	1	1	5	6/ 24	5/ 60	2	2	2	1
8	SIVA	19	M	STUDENT	LE	6/ 6	6/ 6	2		2+	2+	2	2	1	1	1	1	1	4	6/ 6	6/ 6	2	1	2	1
9	GOPAL	24	M	MECHANIC	RE	6/ 6	6/ 6	2		1+	2+	2	2	1	1	1	1	1	4	6/ 6	6/ 6	2	1	2	1
10	NATARAJAN	43	M	LORRY DRIVER	LE	6/ 36	6/ 36	2		2+	3+	2	2	1	1	1	1	1	1	6/ 12	6/ 12	2	1	2	1
11	MEENAKSHI	55	F	H.W	LE	6/ 12	6/ 18	2		2+	3+	1	2	1	1	3	1	1	12	6/ 12	6/ 12	2	1	2	1
12	IRULAYEE	60	F	H.W	RE	6/ 60	3/ 60	2		2+	2+	1	2	1	1	3	1	1	12	6/ 18	3/ 60	2	1	2	1
13	RAJAMANI	63	F	H.W	LE	6/ 6	6/ 6	2		1+	2+	2	2	1	1	1	1	1	4	6/ 6	6/ 6	2	1	2	1
14	KANNAN	27	M	RICE MILL WORKER	LE	6/ 6	6/ 24	2		2+	3+	1	2	1	2	1	1	1	4	6/ 6	6/ 60	2	1	2	2
15	CHINNAMAL	60	F	H.W	LE	6/ 6	6/ 6	2		2+	1+	2	2	1	1	1	1	1	4	6/ 6	6/ 6	2	1	2	1

S.NO	NAME	AGE	SEX	OCCUPATION	LAT	VISION RIGHT EYE	VISION LEFT EYE	ACUTE	CHRONIC	CELLS	FLARE	PS	IRIS.NODULES	IOP	CORNEA	LENS	FUNDUS.R	FUNDUS.L	FINAL DIA	FINAL VISION RIGHT EYE	FINAL VISION LEFT EYE	SYS. ASSI	SYS.DISE	HYPOPYON	COMPLICATION
16	SELLAYA	65	M	FARMER	RE	HM	6 / 60	2		2+	3+	1	2	1	1	2	1	1	1	6 / 60	6 / 60	2	1	2	1
17	LAXMI	37	M	FARMER	RE	6 / 24	6 / 18	2		1+	2+	2	2	1	1	1	1	1	1	6 / 9	6 / 9	2	2	2	1
18	SIVALINGAM	56	M	FARMER	RE	5 / 60	6 / 24	2		2+	3+	1	2	1	1	3	1	1	12	6 / 18	6 / 24	2	1	2	1
19	SURYA PRASAD	28	M	COOLY	RE	6 / 6	6 / 6	2		0	1+	2	2	1	1	1	1	1	4	6 / 6	6 / 6	2	1	2	1
20	RAJA	31	M	COOLY	RE	6 / 18	6 / 2	2		3+	4+	1	2	1	1	1	1	1	4	6 / 12	6 / 12	2	1	1	1
21	MARIAPPAN	55	M	COOLY	LE	6 / 9	6 / 60	2		1+	2+	2	2	1	1	3	1	1	12	6 / 9	6 / 24	2	1	2	1
22	SAMSUDIN	19	M	PETROL BUNK	RE	6 / 36	6 / 24		2	2+	3+	1	2	2	1	2	2	1	11	6 / 36	6 / 21	1	2	2	3
23	NITHYA	18	F	STUDENT	RE	6 / 36	6 / 9		1	1+	2+	2	2	1	1	1	1	1	5	6 / 18	6 / 9	2	1	2	1
24	BOOMINATHAN	31	M	BAKery MASTER	RE	6 / 15	6 / 15	2		0.5	2+	2	2	1	1	1	1	1	1	6 / 9	6 / 9	2	1	2	1
25	BALASUBRAMANIAN	54	M	COOLY	RE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
26	KANNAN	30	M	COOLY	RE	5 / 60	6 / 9	2		2+	4+	1	2	1	1	1	1	1	4	6 / 9	6 / 9	2	1	2	1
27	MUTHURAM	44	M	COOLY	BE	6 / 9	6 / 12	2		2+	2+	2	2	1	1	1	1	1	13	6 / 6	6 / 6	2	3	2	1
28	MASTANKAM	50	M	PAINTERS	LE	6 / 36	PL	2		4+	4+	2	2	2	3	2	1	3	8	6 / 12	6 / 36	2	1	2	5
29	RAJKUMAR	18	M	STUDENT	RE	6 / 24	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
30	ADAMMAL	40	F	FARMER	RE	PL	3 / 60	2		3+	4+	1	2	1	2	2	3	3	4	5 / 60	3 / 60	2	1	1	2
31	KESAVAN	35	M	COOLY	RE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
32	MD. SIDDIGEE	19	M	BINDING OFFICE	LE	6 / 6	6 / 6	2		0.5	1+	2	2	1	1	1	1	1	2	6 / 6	6 / 6	1	1	2	1

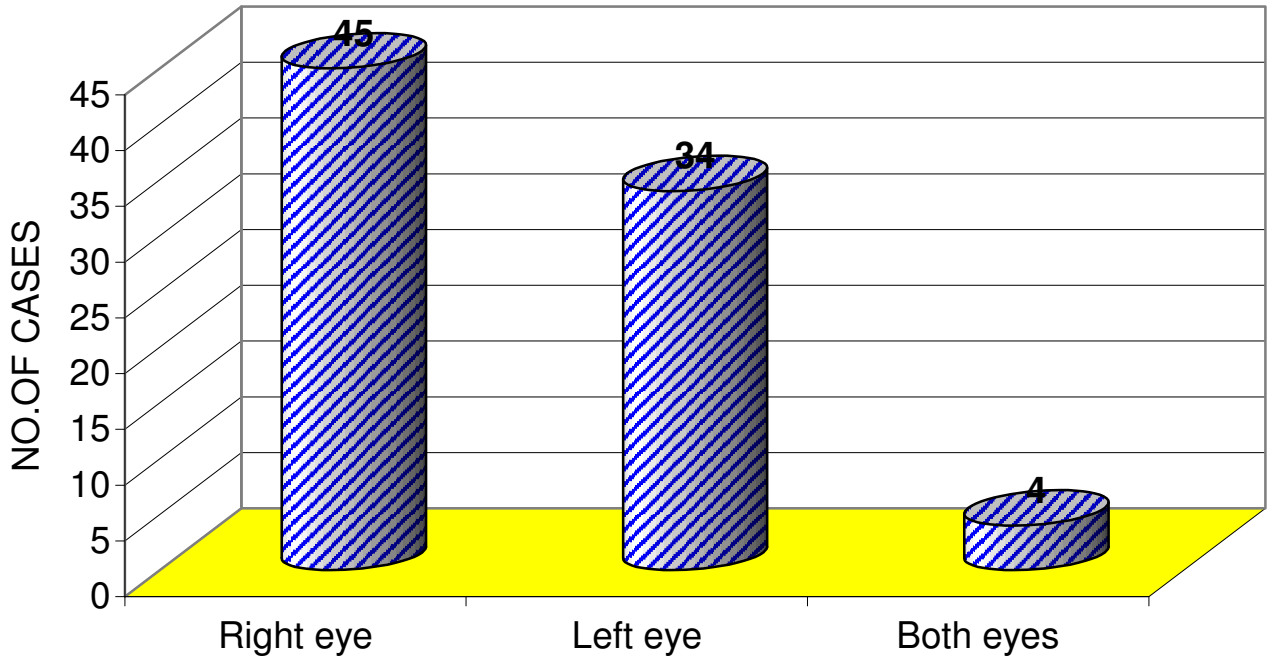
S.NO	NAME	AGE	SEX	OCCUPATION	LAT	VISION RIGHT EYE	VISION LEFT EYE	ACUTE	CHRONIC	CELLS	FLARE	PS	IRIS.NODULES	IOP	CORNEA	LENS	FUNDUS.R	FUNDUS.L	FINAL DIA	FINAL VISION RIGHT EYE	FINAL VISION LEFT EYE	SYS. ASSI	SYS.DISE	HYPOPYON	COMPLICATION
33	AMEENA	42	F	H.W	RE	6 / 18	6 / 6	2		1+	2+	2	2	1	1	3	1	1	12	6 / 6	6 / 6	2	1	2	1
34	JENITHA	45	F	H.W	LE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	4	6 / 6	6 / 6	2	1	2	1
35	PERUMALSAMI	36	M	COOLY	RE	5/16	6 / 12	2		3+	4+	2	2	2	3	2	3	1	8	6 / 18	6 / 12	2	1	1	1
36	KRISHNAVENI	70	F	COOLY	LE	6 / 9	5/16	2		3+	4+	2	2	2	3	2	1	3	8	6 / 9	6 / 12	2	1	1	1
37	POUNTHAI	50	F	H.W	RE	5/16	6 / 36	2		2+	3+	1	2	1	1	2	1	1	1	6 / 60	6 / 36	2	1	2	1
38	MALAIALANGARAM	51	M	SHOP WORKER	LE	6 / 18	6 / 8	2		2+	3+	2	2	1	1	1	1	1	1	6 / 9	6 / 18	2	1	2	1
39	NARAYANAN	66	M	COOLY	LE	6 / 60	6 / 60	2		1+	2+	2	2	1	1	3	1	1	12	6 / 60	6 / 12	2	1	2	1
40	VELATHAI	62	F	COOLY	RE	PL	6 / 60	2		2+	3+	2	2	1	1	2	3	3	4	6 / 60	6 / 60	2	1	2	1
41	PONDI	55	M	COOLY	RE	1 / 60	6 / 36	2		1+	2+	2	2	1	1	1	1	1	1	6 / 36	6 / 18	2	2	2	1
42	SUNGAM	40	M	COOLY	LE	6 / 9	HM		1	0.5	1+	2	2	2	1	2	1	3	6	6 / 9	6 / 18	2	1	2	4
43	MYSURA BEGAM	30	F	COOLY	LE	6 / 9	6 / 18		2	0.5	2+	1	2	1	2	1	1	1	5	6 / 9	6 / 18	2	1	2	2
44	RAVICHANDRAN	35	M	DRIVER	LE	6 / 9	CFCF		1	1+	2+	2	1	1	1	1	1	1		6 / 9	3/60	2	1	2	4
45	PITCHAIAMMAL	55	F	COOLY	LE	2 / 60	5/60	2		2+	3+	2	2	1	1	1	3	1	12	2 / 60	6 / 18	2	1	2	1
46	NALLAMAL	52	F	COOLY	RE	5 / 60	2 / 60	2		2+	3+	2	2	1	1	1	3	1	12	6 / 36	2 / 60	2	1	2	1
47	MALAIYANDI	52	M	COOLY	LE	6 / 36	5/60	2		2+	3+	2	2	1	1	1	2	1	4	6 / 18	6 / 18	2	1	2	1
48	MEENAKSHI	57	F	H.W	RE	6 / 60	6 / 36		1	1+	1+	2	1	1	1	1	2	1	1	6 / 60	6 / 36	2	1	2	4
49	ANDI	28	M	DRIVER	RE	6 / 9	6 / 9	2		0	1+	2	2	1	1	1	1	1	4	6 / 6	6 / 6	2	1	2	1
50	MARIMUTHU	36	M	PAINTER	LE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
51	PERUMAL	37	M	COOLY	RE	6 / 12	6 / 6	2		1+	2+	2	2	1	1	2	1	1	3	6 / 6	6 / 6	2	2	2	2

S.NO	NAME	AGE	SEX	OCCUPATION	LAT	VISION RIGHT EYE	VISION LEFT EYE	ACUTE	CHRONIC	CELLS	FLARE	PS	IRIS.NODULES	IOP	CORNEA	LENS	FUNDUS.R	FUNDUS.L	FINAL DIA	FINAL VISION RIGHT EYE	FINAL VISION LEFT EYE	SYS. ASSI	SYS.DISE	HYPOPYON	COMPLICATION
52	RAJA	41	M	CLERK	LE	6 / 6	6 / 18	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 9	2	1	2	1
53	PREMAVATHI	28	F	H.W	LE	6 / 6	6 / 12	2		0	2+	2	2	1	1	1	1	1	1	6 / 18	6 / 6	2	1	2	1
54	KALAYARASI	37	F	H.W	RE	6 / 24	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
55	KANNAN	60	M	FARMER	RE	6 / 36	6 / 24	2		1+	2+	2	2	1	1	1	2	1	1	6 / 18	6 / 24	2	1	2	1
56	MUTHALAGHAN	70	F	H.W	RE	6 / 60	6 / 60	2		1+	2+	2	2	1	1	1	2	1	1	6 / 18	6 / 60	2	1	2	1
57	KAVERI	55	F	H.W	LE	6 / 12	6 / 24	2		1+	2+	2	2	1	1	1	1	1	1	6 / 12	6 / 12	2	1	2	1
58	PALANIVEL	39	M	COOLY	RE	6 / 12	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
59	MUNIAMMA	68	F	H.W	LE	6 / 36	6 / 60	2		2+	3+	2	1	1	1	2	2	1	4	6 / 36	6 / 60	2	1	2	2
60	KRISHNAN	45	M	FARMER	LE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
61	PANDIARAJAN	62	M	COOLY	BE	6 / 24	6 / 36		1	1+	2+	2	1	1	1	2	1	1	7	6 / 18	6 / 24	2	1	2	2
62	ARUMUGAM	70	M	COOLY	RE	PL	6 / 12	2		1+	2+	2	1	2	2	1	3	3	9	6/60	6 / 12	2	1	2	
63	PITCHAIMMAL	32	M	MILL WORKER	LE	6 / 12	6 / 9	2		1+	2+	1	2	1	1	1	1	1	2	6 / 9	6 / 9	1	1	1	1
64	PALAMMAL	45	F	H.W	RE	6 / 12	6 / 12	2		2+	3+	2	2	1	1	1	1	1	1	6 / 9	6 / 9	2	2	2	1
65	RAJAMMAL	62	F	H.W	RE	4 / 60	5 / 60	2		1+	2+	2	2	1	1	1	2	1	1	6 / 60	5 / 60	2	2	2	1
66	SARADHA	36	F	CLERK	BE	6 / 9	6 / 9	2		0	1+	2	2	1	1	1	1	1	2	6 / 9	6 / 9	2	1	2	1
67	VISALACHI	59	F	H.W	RE	5/60	6 / 9	2		3+	4+	1	1	2	2	3	2	3	8	6 / 18	6 / 9	2	1	1	1
68	BHARATHAN	37	M	MILL WORKER	RE	6 / 12	6 / 9	2		0	1+	2	2	1	1	1	1	1	2	6 / 12	6 / 9	1	1	2	1
69	MANICAM	39	M	PETTY SHOP	LE	6 / 9	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 9	6 / 6	2	1	2	1
70	JAYALAXMI	56	F	WORKER	LE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
71	PANDIYAN	33	M	FARMER	RE	6 / 60	6 / 6	2		2+	3+	1	2	1	2	1	1	1	4	4 / 60	6 / 6	2	1	1	2

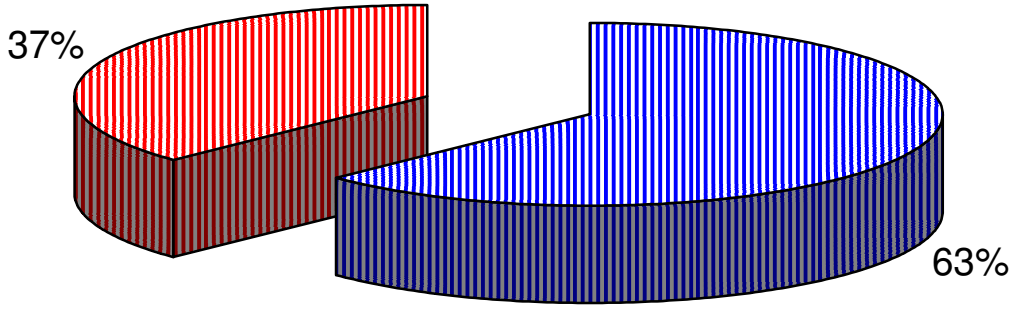
S.NO	NAME	AGE	SEX	OCCUPATION	LAT	VISION RIGHT EYE	VISION LEFT EYE	ACUTE	CHRONIC	CELLS	FLARE	PS	IRIS.NODULES	IOP	CORNEA	LENS	FUNDUS.R	FUNDUS.L	FINAL DIA	FINAL VISION RIGHT EYE	FINAL VISION LEFT EYE	SYS. ASSI	SYS.DISE	HYPOPYON	COMPLICATION
72	PARAMAN	48	M	CLERK	LE	6 / 12	6 / 6	2		1+	3+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
73	MUNIYANDI	62	M	FARMER	RE	6 / 60	6 / 6	2		2+	3+	2	2	1	1	3	1	1	12	6 / 18	6 / 6	2	1	2	1
74	MEENA	67	F	H.W	RE	5/60	6 / 12	2		2+	3+	1	2	2	3	2	3	1	8	6 / 18	6 / 6	2	1	1	1
75	VASUDEVAN	26	M	MILL WORKER	RE	6 / 12	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 9	6 / 6	2	1	2	1
76	POTHUMPONNU	32	F	COOLY	RE	6 / 9	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	2	1	2	1
77	AYYANAR	55	M	COOLY	RE	3 / 60	6 / 18	2		1+	2+	1	2	1	2	1	1	1	7	4 / 60	6 / 18	2	1	2	2
78	VEERANAN	62	M	COOLY	LE	6 / 24	6 / 60	2		1+	2+	2	2	1	1	1	1	1	1	6 / 18	6 / 18	2	1	2	1
79	SAKTHIVEL	47	M	CLERK	LE	6 / 36	6 / 36	2		1+	2+	2	2	1	1	1	1	1	1	6 / 36	6 / 18	2	1	2	1
80	SUBULAXMI	30	F	H.W	RE	6 / 12	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 9	6 / 6	2	1	2	1
81	MARAPPAN	52	M	COOLY	RE	6 / 18	6 / 2	2		0	1+	1	2	1	1	2	1	1	1	6 / 18	6 / 12	2	1	2	1
82	SARAVANAN	16	M	STUDENT	RE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 16	6 / 6	1	1	2	1
83	PARVATHI	23	F	STUDENT	RE	6 / 6	6 / 6	2		1+	2+	2	2	1	1	1	1	1	1	6 / 6	6 / 6	1	1	2	1


AGE DISTRIBUTION
NO.OF CASES
25
20
15
10
5
0
6
11
20
15
17
14
Upto 20 years
21-30
31-40
41-50
51-60
Above 60 years
AGE IN YEARS
No.of cases

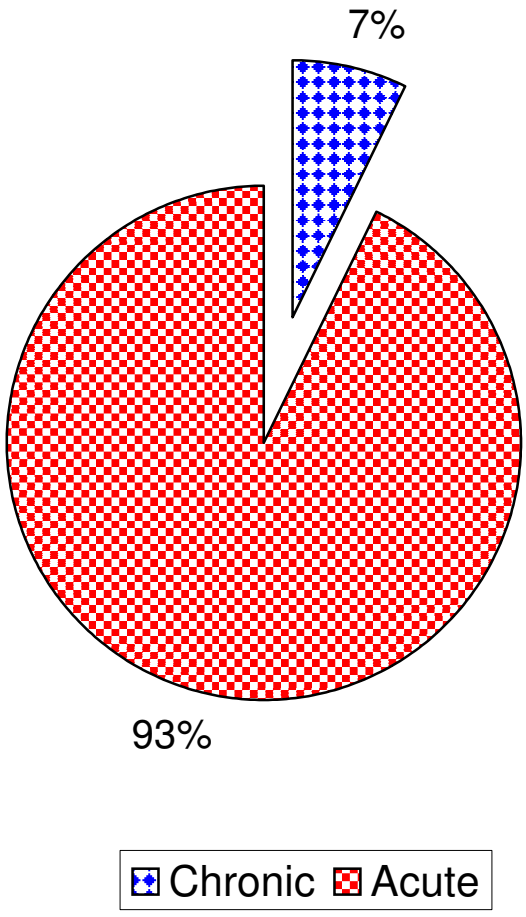
LATERALITY

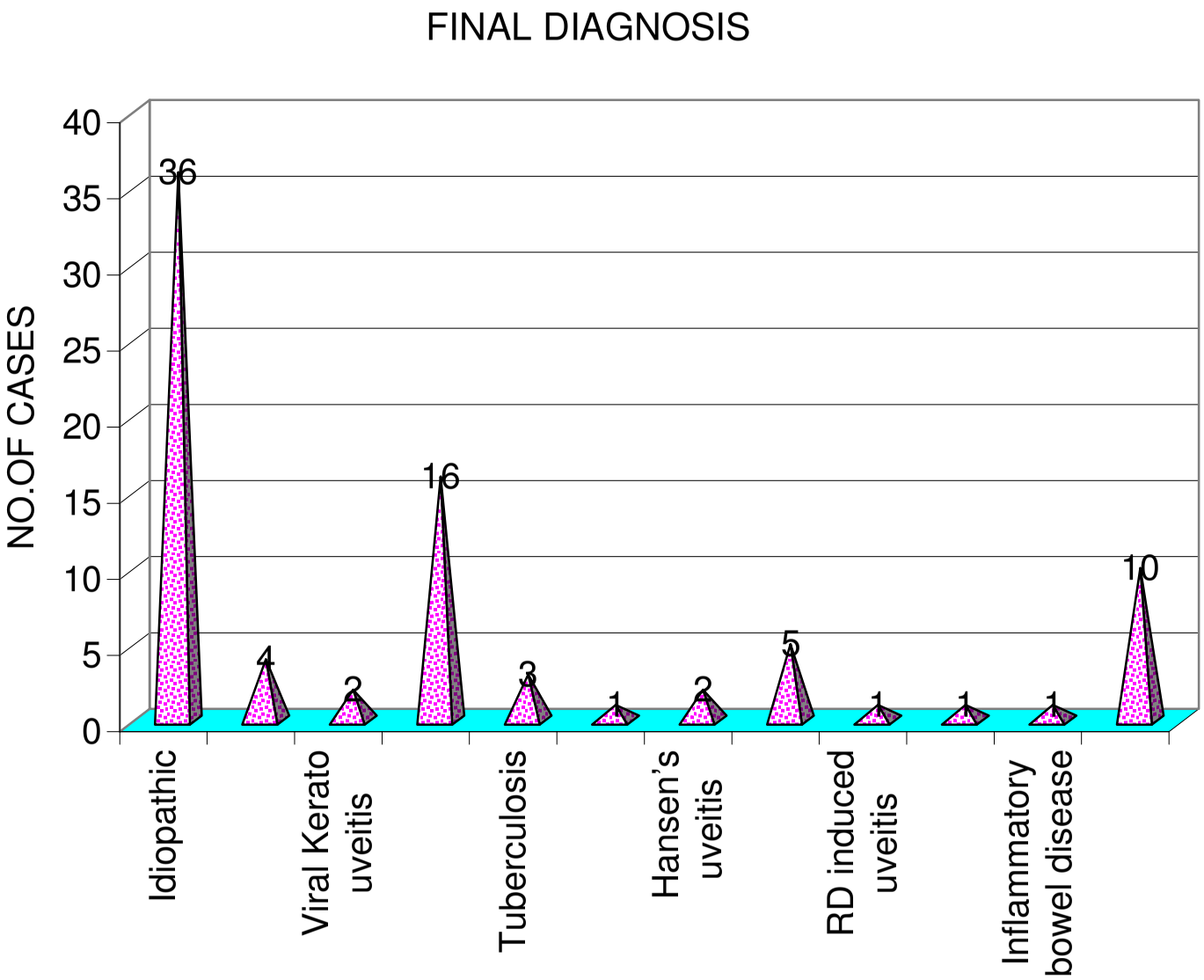

NO.OF CASES
45
40
35
30
25
20
15
10
5
0
45
34
4
Right eye
Left eye
Both eyes

SEX DISTRIBUTION



CHRONOLOGY




FINAL DIAGNOSIS
NO.OF CASES
40
35
30
25
20
15
10
5
0
36
4
2
16
3
1
2
5
1
1
1
10
Idiopathic
Viral Kerato uveitis
Tuberculosis
Hansen's uveitis
RD induced uveitis
Inflammatory bowel disease

Age	No.of cases
Upto 20 years	6
21-30	11
31-40	20
41-50	15
51-60	17
Above 60 years	14

Male	52
Female	31

Laterality	Cases
Right eye	45
Left eye	34
Both eyes	4

CHRONOLOGY	CASES
Chronic	6
Acute	77

Idiopathic	36
HLA – B27 related	4
Viral Kerato uveitis	2

Traumatic anterior uveitis	16
Tuberculosis	3
Fuch's heterochromic uveitis	1
Hansen's uveitis	2
Lens induced uveitis	5
RD induced uveitis	1
Sclerokerato uveitis	1
Inflammatory bowel disease	1
Post operative uveitis	10