ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 02 | February - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CLINICAL STUDY OF ANTERIOR UVEITIS IN PATIENTS ATTENDING TERTIARY MEDICAL CENTRE

Ophthalmology

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ABSTRACT

INTRODUCTION: Anterior uveitis is the most common type of uveitis observed amongst uveitis (41.4%–55.29%).1,2,3,4 The prevalence of uveitis varies geographically and is roughly estimated to be around 200 per 100,000 in the US, 38 per 100,000 in France, and 730 per 100,000 in India.5 In 2010, for an estimated population of 1168 million, the prevalence rate of uveitis in India was around 8.5 million and incidence observed in India was 1.5%. **AIM AND OBJECTIVE:** To study clinical presentation of anterior uveitis and To study the aetiology and complications of anterior uveitis, **MATERIAL AND METHODS**: This is a Descriptive longitudinal study which includes 100 patients aged between 20 and 80 years, attending Outpatient Department of south central railway hospital, with signs and symptoms of anterior uveitis. Necessary clearance from the Institutional Ethical Committee will be taken, and informed consent were taken from all the study participants. Study subjects were recruited as per inclusion and exclusion criteria. A standard clinical proforma was filled in all cases, which included salient feature in the history, visual acuity using snellens visual acuity chart, clinical findings, laboratory investigations, and the final aetiology. All patients were examined under slit lamp, **RESULT** : The etiology remain undetermined in 43 cases. Anterior uveitis following trauma was seen in 24 cases and phacolytic uveitis was detected in 10 cases. Herpes zoster was responsible in 9 cases and TB in 4 cases. IAA and FHI was determined in 3% cases each, Septic focus and IBD disease was observed in case (1%) each. There was 7% cases of skin lesions, 6% cases of PSC (LE) , pulmonary TB was in 5% of cases, Leprosy and SIMC (LE) was in 5% of cases each, HIV and Arthritis R knee was found in only 1% of cases each. **CONCLUSION :** Uveitis, regardless of the kind or presentation, is a chronic, progressive condition that can lead to blindness. The aetiology varies but and in most cases, it is unknown. Most of uveitis were acute and non-granulamatous and affects visual acuity

KEYWORDS

uveitis, visual acuity, sarcoidosis, koeppe granules

INTRODUCTION

Anterior uveitis is an intraocular inflammation that affects the iris (iritis), anterior part of the ciliary body (anterior cyclitis), or both (iridocyclitis) and primarily affects anterior chamber and/or anterior vitreous. Anterior uveitis can be classified as granulomatous or non-granulomatous according to its clinical appearance, and infectious or non-infectious according to its etiology. It has been categorized by standardization of uveitis nomenclature (SUN) working group according to the onset, duration, and course of the disease.[1] Further, it can be of acute or insidious onset. On the basis of the duration of anterior uveitis can be limited (less than or equal to three months) or persistent (more than three months). It is also classified based on the disease course: as acute anterior uveitis when there is an episode of sudden onset and limited duration; recurrent anterior uveitis when repeated episodes occur separated by periods of inactivity for at least three months without treatment; and chronic anterior uveitis when it persists and relapses in less than three months after discontinuing treatment.

Anterior uveitis is the most common type of uveitis observed amongst uveitis (41.4%–55.29%).[1,2,3,4] The prevalence of uveitis varies geographically and is roughly estimated to be around 200 per 100,000 in the US, 38 per 100,000 in France, and 730 per 100,000 in India.[5] In 2010, for an estimated population of 1168 million, the prevalence rate of uveitis in India was around 8.5 million and incidence observed in India was 1.5%.[6] It generally affects third to sixth decade of life with a mean age between 35 and 45 years. Male (62%) predominance was reported over females (38%) in a review article.[7] It was reported less frequent in children and elderly with estimated prevalence 5 -16% and 6-21% respectively. Uveitis, the fifth commonest cause of visual loss in the developed world such as in US (10%).[8] However, not much studies have been done in India.

Anterior uveitis can be caused by infections like tuberculosis, toxoplasmosis and syphilis or can be associated with autoimmune diseases such as sarcoidosis and Behcet's disease. In India, infectious cause constitutes 9%–33.42% of cases of uveitis and tuberculosis is the most common type of infection (8.16%–60%) followed by toxoplasmosis and herpes.[9] Among the non-infectious uveitis, HLAB27 anterior uveitis is most common.[10,11,12,13] However, only 1% of people who carry the HLA-B27 allele develop acute anterior uveitis.[14] The common causes of granulomatous uveitis observed in India were tuberculosis (5.6%), sarcoidosis (4%), pediatric parasitic-induced uveitis (2.5%), VKH syndrome (1.4%), leprosy (1.2%) and sympathetic ophthalmia (0.8%).[15]

With the above background we had conducted this observational study to assess the clinical study of anterior uveitis in the patient attending tertiary medical centre.

AIM OF THE STUDY

1. To study clinical presentation of anterior uveitis
2. To study the aetiology and complications of anterior uveitis.
3. To assess visual outcome after treatment of anterior uveitis

MATERIAL AND METHODS

This is a Descriptive longitudinal study which includes 100 patients aged between 20 and 80 years, attending Outpatient Department of south central railway hospital, with signs and symptoms of anterior uveitis. Necessary clearance from the Institutional Ethical Committee will be taken, and informed consent were taken from all the study participants. Study subjects were recruited as per inclusion and exclusion criteria. A standard clinical proforma was filled in all cases, which included salient feature in the history, visual acuity using snellens visual acuity chart, clinical findings, laboratory investigations, and the final aetiology. All patients were examined under slit lamp.

Details on disease severity, laterality, chronicity, ocular signs and associated systemic conditions were noted. Presentation were considered as unilateral if active inflammation present in only one eye and bilateral if both eyes presented with active inflammation.

The inflammation was defined as acute if symptoms is present for <3 months, chronic if symptoms is present for 3 months or more and recurrent if two or more episodes of inflammation separated by a disease-free period. Anterior uveitis was defined granulomatous if large keratic precipitates, nodules at pupillary margin (Koeppe nodules) or nodules on or within the anterior iris stroma (Busacca nodules) were present.

A short differential diagnosis was made in each case. Subsequently, a tailored laboratory investigation was carried out. Investigations includes total and differential counts, erythrocyte sedimentation rate, urine and stool examination, mantoux test. Serological tests for, syphilis, HIV, rheumatoid factor will be done in all cases. Radiological investigations includes X-ray of chest, lumbosacral and knee joints. Other special investigations was considered whenever necessary. Final

aetiological diagnosis was made based on history, clinical features, laboratory investigations and systemic evaluation by other medical specialities.

Statistical Analysis

Data was entered and analysed using statistical software Epi Info7.1 and Microsoft Excel. The description of the data was done in form of arithmetic mean +/- SD (or median [25 to 75 % quartiles]) for quantitative data while in the form of frequencies (%) for qualitative (categorical) data. P-values of < 0.05 was considered significant. Appropriate statistical test was used to show the association if any.

RESULTS

In present study anterior uveitis accounted to 40% in 20- 30 years of age group,27% in 31- 40 years age, 15% in 41- 50 years age, 7% in 51-60 and 61-70 years age group and 4% in 71-80 years age group. It was seen most commonly in 20-40year age group, accounting for 67%. It was less common in patients over 60 years (11%). The mean age was 38.06 with standard deviation 14.32. The minimum age was 20 and maximum age was 75. In the present study males accounted 56% and females accounted 44%.Hence males were affected more than females. The incidence of anterior uveitis was highest amongst the labourer (47%), followed by officials (20%), then housewife (24%) and less common among businessman (5%) and students (4%). The unilateral involvement was seen in 88% of cases and bilateral involvement in 12% of cases. Unilateral involvement was more than bilateral involvement.

It was observed that most common presentation was acute anterior uveitis, accounting for 76%, then chronic 19% and only 5% of the patients had recurrent anterior uveitis.

Table-1: Distribution Of Patients According To Etiological

Etiology	Number	Percentage
IDIOPATHIC	43	43
FHI	3	3
HERPERSZOSTER	9	9
IAA	3	3
IBD	1	1
LEPROSY	2	2
PHACOLYTIC	10	10
SEPTIC FOCI	1	1
TB	4	4
TRAUMA	24	24
TOTAL	100	100

The etiology remain undetermined in 43 cases. Anterior uveitis following trauma was seen in 24 cases and phacolytic uveitis was detected in 10 cases. Herpes zoster was responsible in 9 cases and TB in 4 cases. IAA and FHI was determined in 3% cases each, Septic focus and IBD disease was observed in case (1%) each.

There was 7% cases of skin lesions, 6% cases of PSC (LE) , pulmonary TB was in 5% of cases, Leprosy and SIMC (LE) was in 5% of cases each, HIV and Arthritis R knee was found in only 1% of cases each.

Graph-1: Ass. Condition Distribution

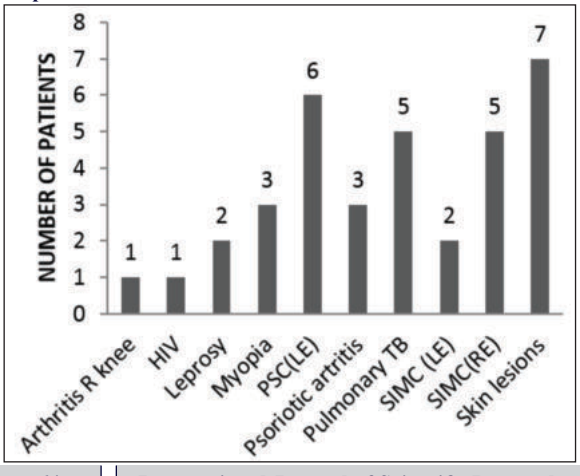


Table-2: Distribution Of Patients According To Visualacuity Before And After Treatment In Right Eye

	RIGHT EYE			
Visual acuity	**BEFORE TREATMENT**		**AFTER TREATMENT**	
	No.	**percentage**	**No.**	**percentage**
PL+ PR +	7	7	-	-
< 6/60	12	12	3	3
6/60	5	5	9	9
6/36	10	10	5	5
6/24	8	8	1	1
6/18	21	21	16	16
6/12	33	33	48	48
6/9	2	2	14	14
6/6	2	2	4	4

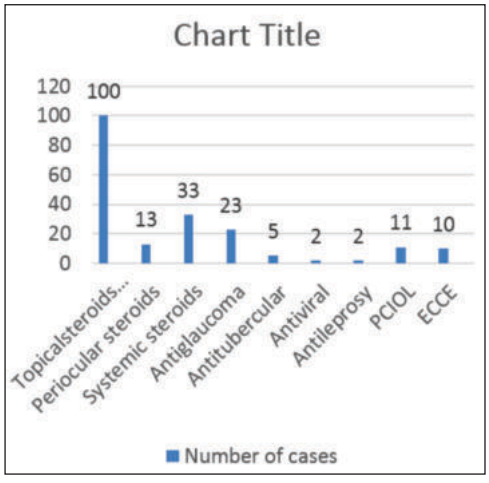
In right eye, Before treatment 7 eyes had visual acuity PL+PR+, 12 eyes had less than 6/60, 5 eyes 6/60, 10 eyes 6/36, 8 eyes 6/24, 21 eyes 6/18, 33 eyes 6/12, 2 eyes 6/9 and 2 eye 6/6. In a few patients visual acuity improved only marginally and after treatment most of 48% patients had visual acuity 6/12 and 14% patients had 6/9.

Table-3: Distribution Of Patients According To Visual Acuity Before And After Treatment In Left Eye

	LEFT EYE			
Visual acuity	**BEFORE TREATMENT**		**AFTER TREATMENT**	
	No.	**percentage**	**No.**	**percentage**
< 6/60	2	2	-	-
6//60	4	4	1	1
6//36	2	2	3	3
6//24	8	8	9	9
6//18	11	11	4	4
6//12	36	36	4	4
6//9	23	23	1	1
6//6	14	8	78	78

In left eye, Before treatment , 2 eyes had less than 6/60, 4 eyes 6/60, 2 eyes 6/36, 8 eyes 6/24, 11 eyes 6/18, 36 eyes 6/12, 23 eyes 6/9 and 14 eye 6/6 and after treatment majority of 78% patients had visual acuity 6/6 and 9% patients had 6/24.

Graph-3: Distribution Of Patients According To Type Of Treatment



DISCUSSION

In present study anterior uveitis accounted to 40% in 20- 30 years of age group,27% in 31- 40 years age, 15% in 41- 50 years age, 7% in 51-60 and 61-70 years age group and 4% in 71-80 years age group. It was seen most commonly in 20-40year age group, accounting for 67%. It was less common in patients over 60 years (11%). The mean age was 38.06 with standard deviation 14.32. The minimum age was 20 and maximum age was 75. In a study by **Dr.Anitha.S.Maiya** et al (2014)[16] age of patients included in the study ranged between 20-80 years with maximum number of patients in the age group 31-40 years. In a prospective clinical study by **Dr. Bishnu Prasad Mishra** et al (2018)[17] it was seen that 31-40 age group was most commonly presented with anterior uveitis. In a study by **Dawson Vinay Kumar** et al (2020)[18] most common age group in the study was 41-51 years followed by

n=11 (22%) in the age group 51- 60 years. It was found that the peak incidence of uveitic cataract was in the age group 31-40 in a study by **Dr.K V Raju** et al (2010)[19].

In the present study incidence of anterior uveitis was highest amongst the labourer (47%), followed by officials (20%), then housewife (24%) and less common among

In this study etiology remain undetermined in 43 cases. Anterior uveitis following trauma was seen in 24 cases and phacolytic uveitis was detected in 10 cases. Herpes zoster was responsible in 9 cases and TB in 4 cases. IAA and FHI was determined in 3% cases each, Septic focus and IBD disease was observed in case (1%) each. The most common association in a study by **Andrea D. Birnbaum** et al (2012)[20] was postinfectious or drug- induced uveitis (23 patients [52%]) followed by idiopathic uveitis. In a study by **Dawson Vinay Kumar** et al (2020)[18] more than half of the cases had idiopathic etiology, next most common etiologies were Spondyloarthropathy associated tuberculosis, Lens induced uveitis. In a study by **K M Sudha Madhavi** et al (2015)[21] it was noted that cause was not recognized in significant (42%) number of patients. Among the identifiable diseases, blunt trauma accounted for 20% followed by phacolytic uveitis, which was the second most common identifiable cause. Herpes zoster was responsible for 10% of the disease.In a study by **Nithisha Tegginamatha** et al (2020)[22] majority were idiopathic cases of AU followed by lens induced and tuberculosis associated uveitis.

In the present study in right eye, before treatment 2 eyes had visual acuity PL+PR+, 12 eyes had less than 6/60, 6 eyes 6/60, 13 eyes 6/36, 9 eyes 6/24, 11 eyes 6/18, 26 eyes 6/12, 4 eyes 6/9 and 17 eye 6/6. In a few patients visual acuity improved only marginally and after treatment most of 51% patients had visual acuity 6/12 and 17% patients had 6/9. In left eye, Before treatment 5 eyes had visual acuity PL+PR+, 3 eyes had less than 6/60, 11 eyes 6/60, 3 eyes 6/36, 9 eyes 6/24, 7 eyes 6/18, 34 eyes 6/12, 20 eyes 6/9 and 8 eye 6/6 and after treatment most of 77% patients had visual acuity 6/6 and 9% patients had 6/24. In a study by **Dr. Bishnu Prasad Mishra** et al (2018)[17] visual acuity was 6/12 or worse in majority (89.8%) of the eyes at presentation. Following treatment most eyes regained visual acuity of 6/9 or better (56.25%). In few eyes with complicated cataract or posterior synechiae visual acuity improved only marginally. In a study by **Dawson Vinay Kumar** et al (2020)[18] visual acuity score of 6/12 or lesser was found in the majority of (87.3%) of cases at presentation. 6 cases reached the maximum post-operative vision of 6/12 and one was able to reach n=6/9 with refraction and they were prescribed glasses. In a study by **Esra Kardeş** et al (2016)[23] of the 67 patients Visual acuity at the initial visit was >20/40 in 28 eyes (41.7%), whereas visual acuity at the final visit was >20/40 in 41 eyes (61.1%). Visual acuity less than 20/40 was due to corneal scars in 19 eyes and lens opacity in 7 eyes. In a study by **K M Sudha Madhavi** et al (2015)[21] it was observed that nearly 34% of the patients had visual acuity of ≤6/60 at the time of presentation and the numbers improved to just over 2% after treatment. It was noted that vision of 82% of the patients improved to 6/12 or better as against 30% before therapy.

CONCLUSION

Uveitis, regardless of the kind or presentation, is a chronic, progressive condition that can lead to blindness. The aetiology varies but and in most cases, it is unknown. Most of uveitis were acute and non-granulamatous and affects visual acuity. In a few patients visual acuity improved only marginally however there are study subjects in whom visual acuity improves significantly.

Most common complication was persistent posterior synechiae followed by posterior subcapsular cataracts, secondary glaucoma, followed by iris atrophy and macular edema and all the patients were treated with topical steroids and cycloplegics-mydriatics and have good outcome.

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