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Research Article

A Clinical Study of Anterior Uveitis at India

Pawan Kumar Jarwal*

Department of Ophthalmology, Eye Specilist, GIVT Community Health Center, Bandikui, Govt. R.D.B.P. Jaipuriya Hospital, Jaipur, Rajasthan, India

ABSTRACT

INTRODUCTION

Uveitis" is one of the most common forms of intraocular inflammation and affects mainly children and young adults. It includes a large group of intraocular inflammatory diseases of diverse etiology.1 The cause of inflammation might be infections agent or trauma, but in most cases the underlying mechanism appears to be autoimmune in nature.2 The anterior uveitis can be categorized as iritis, anterior cyclitis and iridocyclitis. It often causes a painful red eye. Patients with anterior uveitis complain of redness, photophobia, tearing and blurred vision.3 Acute anterior uveitis causes mild vision loss but still contributes significantly to the total burden. It causes vision loss both directly through inflammation and via complications such as macular edema, glaucoma, cataract, and others. The treatment for uveitis itself can result in both ocular and systemic complications.4 The morbidity associated with the disease is moderately high.5

MATERIALS AND METHODS

A prospective clinical study was conducted after ethics clearance taken from the review board. The material for this study included, 50 patients between age 20 and 80 years, attending outpatient department, "Department of Ophthalmology at Jaipur ,Rajasthan ,INDIA,during July 2017 to June 2018 with signs and symptoms of anterior uveitis.

The anterior uveitis following penetrating ocular injuries, corneal ulcer, intraocular surgeries and if associated with intermediate, posterior or panuveitis were excluded from this study. Masquerade syndromes presenting as anterior uveitis has also been excluded.

A standard clinical proforma was filled in all cases, which included salient feature in 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 was considered as unilateral if active inflammation was present in only one eye and bilateral if both eyes presented with active inflammation.

The inflammation was defined as acute if symptoms were present for less than three months, chronic if symptoms were present for three 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 included, total and differential counts, erythrocyte sedimentation rate, urine and stool examination, mantoux test. Serological tests for syphilis, HIV, rheumatoid factor was done in all cases. Radiological investigations included x-ray of chest, lumbosacral and knee joints. Other special investigations were considered whenever necessary.Consultation was done with other medical specialities, whenever needed.

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

The anterior uveitis was considered to have idiopathic aetiology when it was not associated with HLA-B27(Human Leucocyte Antigen) haplotype and neither with defined clinical syndromes nor with definitive aetiology.6.

All patients were treated medically with topical steroids (prednisolone acetate 1%) and topical cycloplegic mydriatics (atropine or homatropine). Steroids frequency was titrated

***Corresponding Author:** Pawan Kumar Jarwal, Department of Ophthalmology, Eye Specilist, GIVT Community Health Center, Bandikui, Govt. R.D.B.P. Jaipuriya Hospital, Jaipur, Rajasthan, India, Tel: + 08460069721; Email: drpawanjarwal49@gmail.com

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according to severity of uveitis.Appropriate treatment was given whenever etiology was known.Systemic antimicrobials were administered when infectious agent was found to be the cause .Systemic steroids were used when inflammation was severe, not responding to treatment and patients with macular oedema.

Patients with lens induced inflammation where treated surgically. In patients with uveitis associated with visually significant cataract, cataract surgery was done 3 months after active inflammation had subsided. These patients were given with high doses of topical and systemic steroids 1 week prior to surgery and then gradually tapered.

Cases of anterior uveitis with secondary glaucoma were treated with T. Acetazolamide 250mg BD/TID and/or Timolol 0.5 % eye/drops BD along with topical steroids.

Each patient was followed up for 6 months .The complications were noted and the response to treatment was recorded and evaluated in each patient

RESULTS

The present study was conducted in the "Department of Ophthalmology, at" Jaipur ,Rajasthan ,INDIA,during July 2017 to June 2018, 50 patients in the age group of 20-80 yrs were studied and during the study following observations were made.

Table 1: Age distribution.

Sl. No.	Age (yrs)	Number	Percentage
1	20-30	20	40
2	31-40	12	24
3	41-50	8	16
4	51-60	5	10
5	61-70	3	6
6	71-80	2	4

Table 1 shows Age distribution .In present study anterior uveitis accounted to 40% in 20- 30 years age group, 24% in 31- 40 years age, 16% in 41- 50 years age, 10% in 51- 60 years age, 6% in 61- 70 years age and 4% in 71-80 years age group. It was seen most commonly in 20-40 year age group, accounting for 64%. It was less common in patients over 60 years(10%).

Table 2: Sex distribution.

Sl. No.	Sex	Number	Percentage
1	Male	28	56
2	Female	22	44

Table 2 shows sex distribution .In the present study males accounted 56% and females accounted 44%. Hence males were affected more than females.

Table 3: Occupation.

Sl. No.	Occupation	Number	Percentage
1	Labourer	24	48
2	Officials	11	22
3	Housewives	10	20
4	Business	3	6
5	Student	2	4

As Table 3 shows In the present study incidence of anterior uveitis was highest amongst the labourer (48%), followed by officials (22%), then housewives (20%) and less common among businessman(6%) and students (4%).

Table 4 : Laterality.

Sl. No.	Age (yrs)	Number	Percentage
1	Unilateral	45	90
2	Bilateral	5	10
Total		50	100

As Table 4 shows In the present study unilateral involvement was seen in 90% of cases and bilateral involvement in 10% of cases. Unilateral involvement was more than bilateral involvement.

Table 5: Clinical presentation.

Sl. No.	Presentation	Number	Percentage
1	Acute	38	76
2	Chronic	9	18
3	Recurrent	3	6
Total		50	100

Table 5 shows Clinical presentation of cases .In the present study it was observed that most common presentation was acute anterior uveitis, accounting for 76%, then chronic 18% and only 6% of the patients had recurrent anterior uveitis.

Table 6: Type of inflammation.

Sl. No.	Type	Number	Percentage

1	Nongranulomatous	45	90
2	Granulomatous	5	10
Total		50	100

As table 6 shows, In the present study 45 (90%) patients had non granulomatous inflammation and in 5 (10%) patients it was granulomatous inflammation. Thus nongranulomatous inflammation was more common than granulomatous inflammation.

Table 7: Aetiological distribution.

Sl. No.	Aetiology	Number	Percentage
1	Idiopathic	21	42
2	Blunt trauma	10	20
3	Phacolytic	6	12
4	Herpes zoster	5	10
5	Tuberculosis	3	6
6	Septic focus	1	2
7	Iridocyclitis associated with arthritis	1	2
8	Fuchs' heterochromic iridocyclitis	1	2
9	Leprosy	1	2
10	Inflammatory bowel disease	1	2

As Table 7 shows that In this study etiology remain undetermined in 21 (42%) cases and specific diagnosis was reached in 29 (58%) cases. Anterior uveitis following blunt trauma was seen in 10 cases (20%) and phacolytic uveitis was detected in 6 cases (12%). Herpes zoster was responsible in 5 (10%) cases and tuberculosis in 3 (6%) cases. Iridocyclitis associated with arthritis, Septic focus, Fuchs' heterochromic iridocyclitis, leprosy and inflammatory bowel disease was observed in 1 case (2%) each.

Table 8 : Visual acuity before and after treatment.

Sl. No.	Visual acuity	Before treatment		After treatment	
		No. of eyes	Percentage	No. of eyes	Percentage
1	PL + PR +	4	7.27	-	-
2	< 6/60	6	10.91	-	-
3	6/60	9	16.36	1	1.82
4	6/36	5	9.09	3	5.45
5	6/24	6	10.91	2	3.64
6	6/18	7	12.73	4	7.27
7	6/12	11	20	6	10.91
8	6/9	6	10.91	14	25.46
9	6/6	1	1.82	25	45.45

PL-Perception of light ,PR-Perception of rays.

The above table 8 shows the visual acuity observed in 55 eyes before and after treatment. Before treatment 4 eyes had visual acuity PL+PR+(7.27%), 6 eyes had less than 6/60(10.91%),9 eyes 6/60(16.36%),5 eyes 6/36(9.09%),6 eyes 6/24(10.91%),7 eyes 6/18(12.73%),11 eyes 6/12(20%),6 eyes 6/9(10.91%) and 1 eye 6/6(1.82%). Following treatment 70.91% of patients regained visual acuity of 6/9 or better. In a few patients visual acuity improved only marginally because of associated complications, such as complicated cataract and secondary glaucoma commonly seen in chronic and recurrent cases

Table 9: Treatment.

Type of treatment given	Number of cases	Percentage
Topical steroids and cycloplegics-mydriatics	50	100
Periocular steroids	9	18
Systemic steroids	18	36
Anti glaucoma	13	26
Anti tubercular	3	6
Anti viral	5	10
Anti leprosy	1	2
Antibiotics	13	26
Cataract surgery	7	14

Table 9 shows treatment .In the present study all the 50 patients (100%) were treated with topical steroids and cycloplegics-mydriatics. Periocular steroid was given in 9 patients (18%) of which one had bilateral chronic anterior uveitis and received injections to both the eyes. Systemic steroids were used in 18 patients (36%), which included 6 patients of phacolytic uveitis, 5 herpetic uveitis patients, 3 patients of TB, 2 idiopathic and one each in leprosy and psoriatic patient. 13 patients (26%) received antiglaucoma therapy. 3 patients (6%) received antiTB

drugs, antivirals were considered in 5 cases (10%) and all of them had herpetic anterior uveitis. One patient who had already been started on antileprosy therapy was continued. Systemic antibiotics were given in 13 patients (26%) (7 underwent cataract extraction, 4 chronic idiopathic cases, one each in inflammatory bowel disease and septic arthritis)

Majority of patients responded well to medical line of treatment. A case of visually significant complicated cataract underwent synechiaeotomy and extracapsular cataract extraction with posterior chamber intraocular lens implantation.

Table 10: Complications.

Sl. No.	Complications	No. of eyes	Percentage
1	No complications	23	41.82
2	Persistent posterior synechiae	13	23.64
3	Cataract	8	14.54
4	Secondary glaucoma	7	12.73
5	Iris atrophy	3	5.45
6	Macular oedema	1	1.82

As Table 10 shows, In the present study complications were observed in 18 eyes (32.72%). Most common complication was persistent posterior synechiae seen in 13 eyes (23.64%), cataract in 8 eyes (14.54%), secondary glaucoma in 7 eyes (12.73%) followed by iris atrophy in 3 eyes (5.45%) and macular oedema in 1 eye (1.82%). Most of the eyes which had complications had more than one complication.

DISCUSSION

The present study was conducted in the "Department of Ophthalmology, Jaipur ,Rajasthan ,INDIA,during July 2017 to June 2018 and fifty cases of anterior uveitis were studied.

The incidence was found to be high between 20-40 years of age (64%) and less common over sixty years (10%). Idiopathic anterior uveitis was the commonest cause which can be explained by high antigenicity found in this age group.

In older age group anterior uveitis was usually of phacolytic origin.

It was observed that males were affected more (56%) compared to females (44%). This may be because men tend to seek medical attention more often than women and socio-economic habits may put male patients at a greater risk for development of anterior uveitis. In Rathinam et al study 61.3% were males and 38.7% were females.7 Alezandro Rodriguez et al reported 38.9% male and 61.1% female involvement in their study(As shown in below table11).7

Table 11: Gender comparison.

	Present	Rathinam et al2	Alezandro Rodriguez et al07
Males	56%	61.3%	38.9%
Females	44%	38.7%	61.1%

Majority of patients were labourers (46%). Most common cause of anterior uveitis in labourers was blunt trauma. This may be due to occupational exposure.

Majority of patients came with unilateral presentation (90%). This finding was comparable with that of Rathinam et al study (85.3%).2 However there was no significant predilection for either the right or left eye.

The most common presentation was acute iridocyclitis (76%) than chronic (18%) and recurrent iridocyclitis (6%). Rathinam et al reported 71.9% acute, 24.3% chronic and 3.8% recurrent. The findings are comparable in both the studies(Table 12).

Table 12: Chronicity comparison.

	Present	Rathinam et al2
Acute	76%	71.9%
Chronic	18%	24.3%
Recurrent	6%	3.8%

In this study 45 patients (90%) had non granulomatous inflammation and in 5 patients (10%) it was granulomatous. Findings are comparable with previous studies. Out of 5 granulomatous inflammation 4 were chronic and 1 patient had recurrent presentation. Granulomatous type of inflammation was observed in three patients of tuberculosis, one patient of herpes and one patient of leprosy(As shown in table 13).

Table 13: Comparison of type of inflammation.

	Present	Rathinam et al2	Alezandro Rodriguez et al7
Granulomatous	10%	18.8%	12.4%
Non granulomatous	90%	81.2%	87.6%

In the present study blunt trauma (20%) was the most common cause of anterior uveitis followed by phacolytic (12%) aetiology. Although herpes zoster accounted for 10% of the cases, which is comparable with other two studies where it stood first, is not the most common in present study. However it was the most common infectious cause in our study. 6% of the patients had tubercular anterior uveitis which is comparable with Rathinam et al and Singh et al study, where as there is no data in Henderly et al study. This difference may be because all other studies were

conducted at referral centers, where cases usually chronic and recurrent ones, are referred from primary and secondary centers. Whereas present study was done in a general ophthalmic clinic and most people were from villages.8

In present study, uveitis was found to be associated with diabetes mellitus in five patients (10%) and hypertension in two (4%) patients. All those who had diabetes mellitus were above 50 years of age. Three out of five diabetes mellitus patients had chronic uveitis. In a study of uveitis presenting in elderly it was noted that diabetes should probably be considered a risk factor for uveitis development.09

Visual acuity was 6/12 or worse in majority (87.3%) of eyes at presentation. Following treatment most eyes regained visual acuity of 6/9 or better (70.91%). In few eyes with complicated cataract or macular edema, visual acuity improved only marginally.10

No complications were seen in 37 eyes (67.27%). Complications were commonly noted in chronic and recurrent cases. Most common complication observed was persistent posterior synechiae in 13 eyes (23.64%), cataract in 8 eyes (14.54%). Secondary glaucoma was seen in 7 eyes (12.73%), which included 2 herpetic eyes, both the eyes in a psoriatic patient, two idiopathic and one eye in TB anterior uveitis. Iris atrophy was seen in 3 eyes (5.45%), two of them in a leprosy patient and the third was in a herpetic patient and macular edema was seen in 1 eye (1.82%).

A short differential diagnosis was made in each case after complete ocular and systemic examination with tailored approach to the laboratory investigations

All patients were treated medically by topical steroids and cycloplegics-mydriatics. Treatment with antibiotics, antitubercular drugs, antileprosy and antiviral drugs were considered in appropriate cases. Periocular and systemic steroids were used in cases with severe inflammation which was not controlled by topical steroids. A case of visually significant complicated cataract underwent synechiaeotomy and extracapsular cataract extraction with posterior chamber intraocular lens implantation. Cataract extraction with posterior chamber intraocular lens implantation was done in all cases of phacolytic anterior uveitis. In all cases surgery was done under the cover of systemic steroids.11 Majority of the patients responded well to the medical line of treatment.

This is a prospective study done during July2017 to June2018. We studied 50 cases of anterior uveitis, with emphasis on evaluating the possible aetiology, associated complications and treatment outcome. Anterior uveitis is a relatively common ocular condition.

In the present study males were affected more than the females. Patients in the age group of 20-40 years were commonly involved. Labourers were by for the commonly involved group in this study, blunt trauma was the leading cause in them, and this may be due the risk of injury at their work place. Next common group was that of officials and most of them had idiopathic disease.Majority of the patients had acute presentation.

90% of the patients presented with unilateral ocular involvement, among them right eye involvement was slightly more than the left eye involvement in the ratio of 5:4. Both eye involvement was seen in 10% of the patients, all of them had either chronic or recurrent disease and four of them had identifiable aetiology.

Nongranulomatous inflammation was the commonest form accounting for 90% of the cases. Granulomatous inflammation was seen only in chronic cases excepting one patient who had recurrent anterior uveitis.

Despite of efforts, diagnosis remained obscure in 42% of the cases, blunt trauma was the most common identifiable cause in 20% of the cases more so in labourers. Herpetic aetiology topped the list of infectious cause followed by tuberculosis. Septic foci, iridocyclitis associated with arthritis, Fuchs' heterochromic iridocyclitis, leprosy, inflammatory bowel disease are all relatively less common causes of anterior uveitis.

The challenge in anterior uveitis is to develop tailored laboratory investigations that will facilitate a diagnosis. This can be done by first considering the probable diagnosis based on the patent profile and then performing tailored laboratory evaluation..

A thorough systemic examination should be done to rule out any systemic disease, as it may be an early manifestation of systemic disease.

Majority of anterior uveitis patients respond to medical line of treatment.

Chronicity increases the risk of complications as does delay in receiving appropriate therapy, but early recognition and treatment of patients who are prone to recurrences can improve their outcome.

Early diagnosis and treatment of patients results in good visual prognosis and is the key in management of anterior uveitis.

REFERENCES

1. Rathinam SR. CME Series. All India Ophthalmological society. Uveitis made simple work up and management. 20:1-42.
2. Singh R, Gupta V, Gupta A. Pattern of Uveitis in a referral eye clinic in North India. Indian J Ophthalmol. 2004;52:121-125.
3. Brewerton DA, Caffrey M, Nicholls A, Walters D, James DCO. Acute anterior uveitis and HLA-B27. Lancet. 1973;3:994-996.
4. McCannel CA, Holland GN, Helm CJ, Cornell PJ, Winston JV, Rimmer TG, et al. Causes of Uveitis in the general practice of ophthalmology. Am J Ophthalmol 1996;121:35-46.
5. Kido S, Sugita S, Horie S, Miyanaga M, Miyata K, Shimizu N, et al. Association of Varicella zoster virus load in the aqueous humor with clinical manifestations of anterior uveitis in herpes zoster ophthalmicus and zoster sine herpete. Br J Ophthalmol. 2008; 92(4): 505-508.
6. Rathinam SR, Namperumalsamy P. Global variation and pattern changes in epidemiology of uveitis. Indian J Ophthalmol. 2007;55(3):173-183.
7. Yanoff M, Duker JS, Augsburger JJ, Azar DT, Diamond GR, Dutton JJ, et al. Ophthalmology. Missouri (MO): Mosby. 2004;2:1105-1112.

8. Alio J, BenEzra D. Priority features of intraocular inflammation. Highlights of Ophthalmology. 2002; 30(3):1-2.
9. Martin TM, Smith JR, Rosenbaum JT. Anterioruveitis: current concepts of pathogenesis and interactions with the Spondyloarthropathies. Curr opin Rheumatol. 2002;14(4): 337-341.
10. Venkataraman A, Rathinam SR. A pre-and post-treatment evaluation of vision- related quality of life in uveitis. Indian J Ophthalmol. 2008;56:307-312.
11. Rodriguez A, Calonge M, Pedroza-Seres M, Akova YA, Messmer EM, D'Amico DJ, et al. Referral patterns of Uveitis in a tertiary care center. Arch Ophthalmol. 1996;114:593-599.