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Research Article

PATTERN OF ANTERIOR UVEITIS IN A TERTIARY REFERRAL HOSPITAL TELANGANA STATE

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ABSTRACT

Introduction: Uveitis is one of the most common forms of intraocular inflammation and affects mainly children and young adults.
Aim of Study*:* A clinical study of anterior uveitis in a teritiary referral Hospital,Telangana.
Methods: All the patients of uveitis seen at outpatient department, between ctober 2013- September 2015 were studied with minimum follow up of 6 months .Complete history, ophthalmological evaluation and findings were noted on each visit and results were analysed.
Results: Out of the 40, 268 new patients attending the ophthalmic outpatient department , and out of them 240 patients were diagnosed as anterior uveitis. Uveitis was most commonly seen in third decade with anterior uveitis being most common anatomical form
Conclusion: Pattern of uveitis has changed significantly due to better identification of causative agent, identification of newer infectious agent, newer imaging modalities and changed referral pattern.

INTRODUCTION

Uveitis includes a large group of diverse inflammatory diseases, the frequencies of which vary considerably by geographic location around the world.[1-4] Uveitis may be the first evidence in some systemic diseases, as uveitis reflects systemic diseases on several occasions. The anterior uveitis is the most common type of all uveitic entities (57.4%).[5]Acute, unilateral, non-infectious and non granulomatous forms occur more frequently than other forms of uveitis, on the basis of overall clinical presentation. Among all age groups idiopathic anterior uveitis is most common form. Male (61.3%) preponderance of uveitis was seen when compared to females (38.6%).[5]

The correct diagnosis of uveitis is often challenging as these patients present with a plethora of ocular as well as systemic signs and symptoms. Despite improved understanding of the aetiopathogenesis and evolution of advanced diagnostic techniques, the aetiology of uveitis still remains elusive in a significant number of cases. The cause of inflammation might be infection or trauma, but in most cases the underlying mechanism appears to be autoimmune in nature.[6]Anterior uveitis is most common form of uveitis and accounts for an annual incidence rate of about 17 cases per 1,00,000 populations.[7] The anterior uveitis can be categorized as iritis, anterior cyclitis and iridocyclitis. Acute anterior causes mild vision loss but still contributes significantly to the total burden. It causes vision loss both directly through inflammation and through various complicatins such as macular oedema, glaucoma, cataract and others.The treatment for uveitis itself can result in both ocular and systemic complications .[8]The morbidity associated with the disease is moderately high.

The purpose of the study is to present the causes and characteristics of anterior uveitis seen over a two year period in a teritiary eye hospital in telangana state and to compare the pattern of anterior uveitis of this population with the data from other parts of the world including the developed and developing world.

MATERIALS AND METHODS

A prospective clinical study was conducted. The material for this study included, 240 patients of anterior uveitis between age 20 and 80 years, attending outpatient department, Department of Ophthalmology at Teritiary referral hospital Telangana, between October 2013 to septembeer 2015 with signs and symptoms of anterior uveitis. The exclusion criteria

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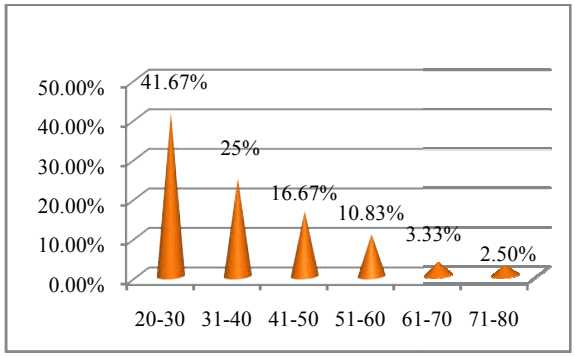
included, the anterior uveitis following penetrating ocular injuries, corneal ulcer and intraocular surgeries.
Cases if associated with intermediate, posterior or panuveitis were also excluded from this study. A standard clinical proforma was filled in all the cases, which included salient feature in history, visual acuity using Snellens visual acuity chart, clinical findings, laboratory investigations, and the final aetiology. Intraocular inflammation was assigned anterior uveitis based on International uveitis study group criteria. Each patient was followed up for 6 months .The complications were noted and the response to the treatment was recorded in each patient.

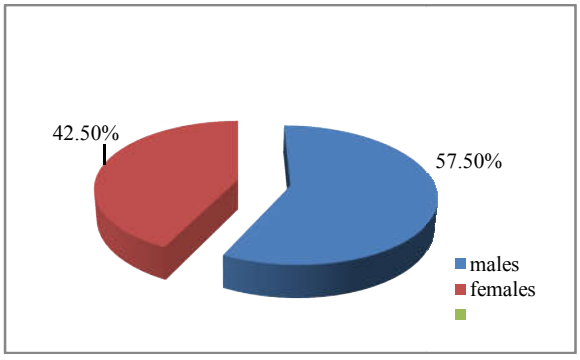
RESULTS

During a two year period from October 2013 to September 2015, about 40,268 new patients attended the ophthalmic out-patient department and out of them 240 cases were diagnosed as anterior uveitis. The percentage of anterior uveitis is 0.59%.

In present study anterior uveitis was seen most commonly in 20-40 year age group, accounting for 66.67%. It was less common in patients over 60 years that is 5.83% (Graph 1)



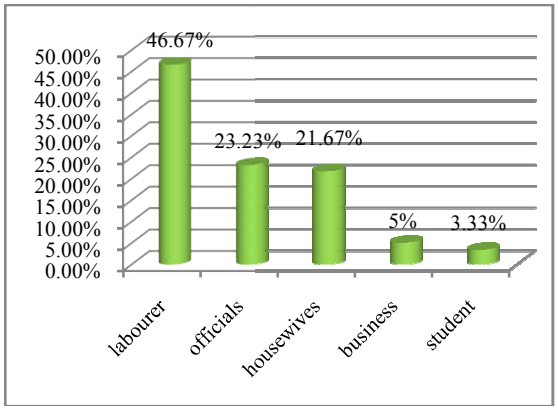
Graph 1 Age distribution



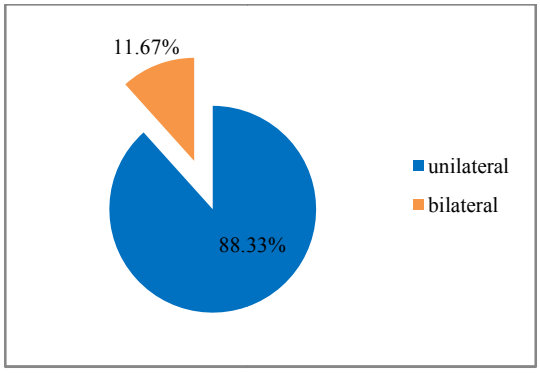
Graph 2 Sex distribution

Males accounted 57.50% and females accounted 42.50%. (Graph 2).

The incidence of anterior uveitis was highest amongst the labourer(46.67%), followed by officials (23.23%), then housewives (21.67%) and less common among businessman(5%) and students (03.33%)(Graph 3).Unilateral involvement (88.3%) was more common than bilateral involvement (11.67%)

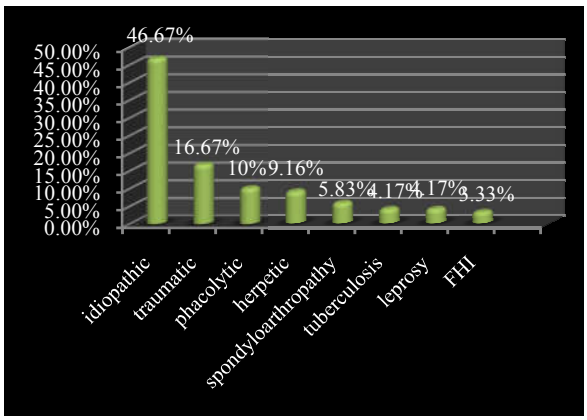


Graph 3 Occupational distribution



Graph 4 Laterality

In the present study it was observed that most common presentation was acute anterior uveitis, accounting for 75%, then chronic 20% and only 5% of the patients had recurrent anterior uveitis. Nongranulomatous inflammation was seen in 220 (91.66%) patients and in 20 (08.33%) patients it was granulomatous inflammation. Among 240 cases of anterior uveitis ,112 (46.67%) cases were idiopathic and 128 cases were of known cause of which 86 (35.83%) were found to be of non infectious etiology and 42(17.50%) were found to be of infectious etiology. In this study etiology remain undetermined in 112 (46.67%) cases and specific diagnosis was reached in 128 (53.33%) cases. Anterior uveitis following blunt trauma was seen in 40 cases (16.67%) and phacolytic uveitis was detected in 24 cases (10.00%). Herpes was responsible in 22 (09.16%) cases, spondyloarthropathies in 14 (05.83%) cases, tuberculosis and leprosy in 10 (4.17%) cases each and Fuchs' heterochromic iridocyclitis in 8 (3.33%) cases was observed (Graph 5).



Graph 5 Causes of Anterior uveitis

Following treatment 64.91% 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.

In the present study all the 240 patients (100%) were treated with topical steroids and cycloplegics-mydriatics. Periocular steroid was given in 80 patients . Systemic steroids were used in 160 patients (33.33%). 58 patients (24.17%) received antiglaucoma therapy. 10 patients (4.17%) received anti TB drugs, antivirals were considered in 22 cases (09.17%) and all of them had herpetic anterior uveitis.10 (4.17%) patients received antileprotic drugs. Systemic antibiotics were given in 60 patients (25%).

Majority of patients responded well to medical line of treatment. Thirty patients underwent small incision cataract surgery with either PCIOL or ACIOL implantation. Among the patients who underwent cataract surgery, 6 patients needed synechiaetomy. Six patients needed trabeculectomy, whose IOP could not be controlled by medical treatment alone.

In the present study complications were observed in 150eyes (55.97%). Most common complication was persistent posterior synechiae seen in 62 eyes (23.13%),cataract in 32 eyes (11.94%), secondary glaucoma in 30 eyes (11.19%) followed by iris atrophy in 18 eyes (6.71%) and macular oedema in 08 eyes (2.98%).

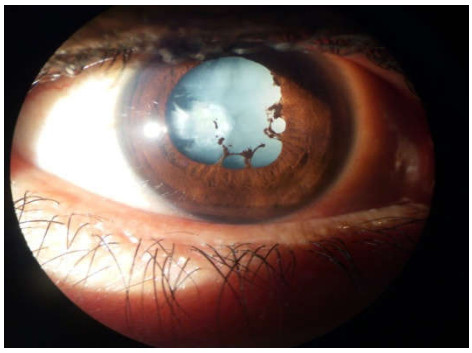


Fig 1 RE- festooned pupil due to posterior synechiae

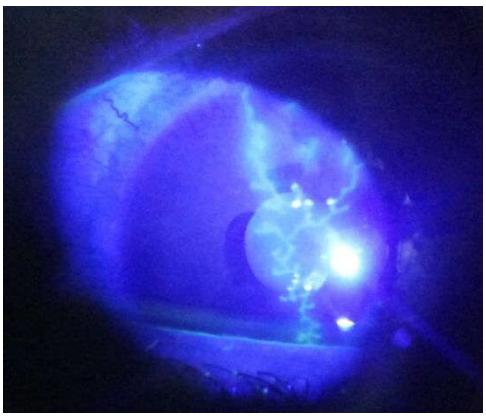


Fig 2 Herpetic anterior uveitis showing dendritic patern

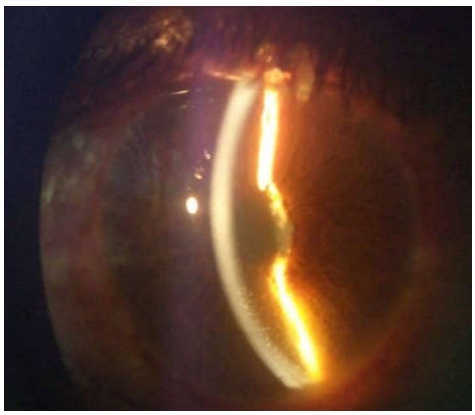


Fig 3 RE- KP's with posterior synechiae

Fig 4 Arthritis with swelling of knee and ankle joints

DISCUSSION

It has been quoted that uveitis accounts for 0.8% of hospital out-patient visits[9].The percentage of anterior uveitis in the present study is 0.59%. In this study an attempt has been made to study the clinical profile of anterior uveitis including common age group, sex predilection , chronicity of the disease, type of inflammation , aetiological factors ,treatment modalities and complications.

In our study middle aged constituted (20-60 years) 94.17% ,elderly (>60 years) constituted 5.83%, where as in Rathinam *et al* study[9] children (≤17years) constituted 7.33%, middle aged (17-59 years) constituted 83.37%, elderly constituted 9.28%. The results of our study could not be compared to Rathinam *et al* study because in our study the age group studied was limited to 20-80 years, where as in Rathinam *et al* study all age groups all age groups were included.

It was observed that males were affected more (57.50%) compared to females (42.50%) in our study. In Rathinam *et al*[9] study 61.3% males and 38.7%females were affected. Alejandro Rodriguez *et al*[10] reported 38.9% male and 61.1% female involvement in their study. In our present study the male:female ratio of anterior uveitis was 1.35:1,whereas in Rathinam *et al* study it was 1.58:1 and in Alejandro Rodriguez *et al* study it was 1:1.4.Our results were similar to Rathinam *et al* study and differed from that of Alejandro Rodriguez *et al* study in which there was slight female preponderance. With few exceptions[11,12] most uveitis surveys from developed countries report either an equal gender distribution[13,14,15] or a slight predominance of women.[10,16,]. Few surveys[2-4] from developing countries including two previous reports from

India12,17,18 described a male predominance nearly 2:1. 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. Most common cause of anterior uveitis in labourers in our study was blunt trauma. This may be due to occupational exposure.

Unilateral involvement (88.33%) was more common than bilateral involvement (11.67%) in this study . According to Rathinam et al study, unilateral involvement is seen 85.30% cases and bilateral involvement is seen in 14.70% cases. Alejandro Rodriguez et al reported 53.20% of unilateral involvement and 46.80% bilateral involvement. Our results were similar to Rathinam et al study and contrasted with Alejandro Rodriguez et al study.

While unilateral anterior uveitis appears to be either equal or more common in both the developed11,19 and developing world,3,18 the etiologies in the two settings appear to differ dramatically. In the developed world the most common cause of unilateral involvement are uveitis associated with spondyloarthropathies,10,11,13-16,19,20,21Fuch's heterochromic uveitis14,15,21,22 and herpetic anterior uveitis.11,15,21,22In contrast, the studies from the developing world, including the present study, include relatively high prevalence of traumatic uveitis, herpetic3,4lens-induced uveitis17as important causes of unilateral inflammation. The bilateral uveitis is more common in some studies from the developed world10,20 probably due to a high frequency of uveitis such as sarcoidosis10 which commonly affect both the eyes. While some of the bilateral entities like Onchocerciasis, Tuberculosis and Hansens disease are unique to certain geographical locations in the developing world.23,24,25

In the present study, among the cases for which the etiology is known ,most of the unilateral cases were due to trauma or phacogenic origin , whereas all the bilateral cases were either due to tuberculosis or leprosy. However there was no significant predilection for either the right or left eye among unilateral cases in our study.

In the present study it was observed that most common presentation was acute anterior uveitis, accounting for 75%, then chronic 20% and only 5% of the patients had recurrent anterior uveitis, whereas in Rathinam *et al* study 70.30% cases were acute, 26.20% were chronic and 03.40% had recurrent anterior uveitis. In Alejandro rodiguez *et al* study, 15.20% cases were acute, 50.80% cases were chronic and 34% cases had recurrent anterior uveitis.In Khairallah *et al* study,acute cases constituted for 32.80%, chronic cases constituted for 67.20%. In Merrill *et al* study 16% cases were acute,58.30% case were chronic and 25.70% cases were recurrent. Our present study results were consistent with Rathinam *et al* study and were different from Alejandro Rodriguez *et al* study. The results of our study were not comparable to Khairallah *et al* study and Merrill *et al* study because these studies were conducted on all forms of uveitis rather than only anterior uveitis. Acute forms of anterior uveitis tend to predominate in community-based hospitals[11] whereas chronic forms of anterior uveitis tend to be more common in tertiary referral practices.[3,10] As Rathinam *et al* study was a community based study so acute forms of anterior uveitis were predominant in that study whereas Alejandro Rodriguez study was conducted in tertiary referral hospital so chronic and recurrent forms of anterior uveitis were predominant in that study. Although the present study was conducted in a tertiary referral centre,the incidence of acute anterior uveitis was more due to lack of medical facilities in the surrounding areas,all the rural population presented to our hospital with out any prior medical intervention.

In the present study nongranulomatous inflammation (91.66%) was more common than granulomatous inflammation (08.33%. Rathinam et al study constituted 73.60% of non granulomatous anterior uveitis and 15.60% of granulomatous uveitis whereas Alejandro Rodrguez et al study constituted 87.60% of non granulomatous and 12.40% of granulomatous uveitis. According to Merrill et al study non granulomatous uveitis constitute 77.70% and granulomatous uveitis constitute 22.30%, whereas Tran VT et al study constituted 51% of non granulomatous uveitis cases and 21% of granulomatous uveitis cases. The present study was similar to Alejandro Rodriguez et al study but slightly differed from that of Rathinam et al study.

The results of the present study were not comparable to Merrill *et al*[13] study and Tran VT *et al*[21] study, because these studies were conducted on all forms of uveitis rather than only anterior uveitis. The most common causes of granulomatous uveitis in previous studies included sarcoidosis (0.5-18.1%),while in developing countries, tuberculosis(0.2-30%)[2,17]and leprosy[2] (0.2-1.2%) were noted in addition. The common causes of granulomatous uveitis observed in our present study were tuberculosis (4.17%), leprosy(4.17%).

In the present study the percentage of idiopathic cases(46.67%) were similar to Rathinam *et al* study(44.70%), but differing from that of Alejandro Rodriguez *et al* study.(25.5%). Among the cases for which the cause was known the percentage of infectious and non infectious cases in the present study and Rathinam *et al* study were comparable whereas in Alijandro Rodriguez study there was high percentage of non infectious cases . For a sizable proportion of patients, the cause of uveitis remain unknown despite appropriate investigations,regardless of age, gender or anatomical location. Previous surveys have suggested that the cause of uveitis remains unknown in approximately 30-60% of patients.[2-4,10,11,13-18,20-22] In general, anterior and intermediate uveitis more often idiopathic than posterior and diffuse forms of inflammation, and uveitis tends more often to be idiopathic in women as compared to men. In present study total number of idiopathic cases were 46.67%, out of which female constituted 48.21% and males constituted 51.79%.

Infectious uveitis occurs in greater frequency in the developing world, attributing from 11.9% to 50% of cases to infection . The most common infectious forms of uveitis seen in developing countries include onchocerciasis,23-25 herpetic anterio uveitis3,18,26 tuberculosis,2 leprosy, leptospirosis27 and other parasitic diseases.An earlier Indian study reported a remarkably high prevalence of tuberculosis (30%), syphilis (5.4%) and leprosy (1.2%) and in a latter one from south India, infectious uveitis accounted for only 11.9% of cases. In the present study, most common cause of infectious anterior uveitis was herpetic anterior uveitis (9.16%) followed by tuberculosis (4.17%) and leprosy (4.17%). As the incidence of tuberculosis

and leprosy is more in developing countries like India, so in the present the incidence of tuberculous and leprotic anterior uveitis was found to be high.In general, the non-infectious uveitis syndromes are more common in developed countries, mainly because of lower prevalence rates of the various infectious forms of uveitis. Uveitis associated with the spondyloarthropathy was the most common noninfectious entity (4-17.6%) in most of the studies,4,10,11,13-17,19,21 except in japan(2.5%) and Italy(2.4%) where it was relatively rare. In Rathinam *et al* study, Fuchs heterochromic uveitis (4.80%), traumatic uveitis (4.4%), spodyloarthropathies (4.1%) were found common, followed by lens induced uveitis(2.0%). The prevalence of non infectious uveitis differed with age. In the literature, the commonest non infectious uveitis in children is JIA28 whereas, in the elderely it appears to be due to spondyloarthropathy 29 (6-6.5%). In the present study the most common non infectious cause of anterior uveitis in middle age group was blunt trauma (16.67%), whereas in elderly age group the most common cause of anterior uveitis was phacogenic in origin. (Table 1)

Table 1 Comparison of Aetiological Factors of Present Study With Other Studies

Aetiology	Present Study	Rathinam *Et Al*[2] Study	Singh *Et Al*	Henderly *Et Al*	Biswas *Et Al*
Idiopathic	46.67%	44.60%	61.30%	43.52%	58.60%
Trauma	16.67%	07.70%	- -	02.52%	03.40%
Lens- Induced	10.00%	03.50%	- -	- -	08.80%
Herpetic	09.16%	08.60%	01.80%	08.99%	0.60%
Sponyloarthropathies	05.83%	07.10%	- -	- -	02.40%
Tuberculosis	04.17%	04%	07.90%	- -	0.60%
Leprosy	04.17%	02.10%	0.80%	- -	0.60%
Fuchs Heterochromic Iridocyclitis	03.33%	08.40%	05.10%	06.47%	05.60%

In the present study, majority of the cases were idiopathic in nature which corresponds with the other studies. Blunt trauma was the most common cause of anterior uveitis followed by phacogenic uvetis . This can be explained by the fact that the rural agricultural population have a greater predilection to trauma.The present study suggests that patients with pre-existing Diabetes mellitus presenting with uveitis may exhibit increased intraocular inflammation. HIV should be considered as one of the risk factor for patient presenting with herpetic anterior uveitis.

Visual acuity was 6/12 or worse in majority (86.58%) of eyes at presentation. Following treatment 64.91% 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. Cystoids macular edema is one of the cause for reduces visual acuity in uveitis. The common underlying cause is an inflammatory mediated breakdown of blood-retinal barrier. Late presentation with complications was found to be another reason leading to lack of visual improvement and then ending up with blindness. Uveitis occurring in patients with pre-existing diabetes can be associated with numerous ocular complications and recurrences. Macular involvement related to both the uveitis and the diabetes appears to be the main cause of reduced vision. Better control DM with treatment may result in better control of inflammation as seen in some of our patients. Hence monitoring glycemic control in all diabetics presenting with uveitis should be mandatory.

CONCLUSION

Pattern of uveitis has changed significantly due to better identification of causative agent, identification of newer infectious agent, newer imaging modalities and changed referral pattern.

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