ORIGINAL ARTICLE

Clinical Profile of Anterior Uveitis in Tertiary Eye Care Center

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ABSTRACT

Purpose: To describe the clinical features, causes and management of patients with acute anterior uveitis. **Methods**: A prospective study of clinical features, complication and prognosis was done on anterior uveitis patients for a period of 10 months. Detailed history, complete ocular examination, systemic evaluation and relevant investigations were done in 64 patients, appropriate systemic and ocular management was done. **Results**: Of 64 patients, 65.6% were male and 34.3% female. Mean age of presentation was 42.6 years. 71.8% unilateral and 28.1% bilateral eye involvement was seen. Visual acuity was between 6/18-3/60 at the time of presentation. 21.8% had Tuberculosis, 9.3% had Trauma, 4.6% had UTI, 3.1% had ankylosing spondylitis (HLA B27 associated) and 3.1% had rheumatoid arthritis, 3.1% had sarcoidosis and 1.5% had toxoplasmosis. 53.1% were idiopathic. Complications were noted in 50% of cases, 25% had secondary glaucoma, 21.8% had posterior subcapsular cataract and 3.1% has cystoid macular edema. Appropriate medical management was started in patients. **Conclusion**: Idiopathic uveitis was higher in our study. Trauma was the most common non-infectious entity, Tuberculosis was most common infectious cause in our study, all patients responded well with medication.

KEY WORDS: Anterior uveitis, Etiology, Complications.

Introduction

Uveitis is inflammation of uvea which is the middle vascular layer of the eye. Anterior uveitis refers to inflammation of iris and anterior part of ciliary body i.e., pars plicata[1,2]. If the inflammation is confined to iris, it is called iritis. If inflammation involves iris and ciliary body, it is called iridocyclitis. Anterior uveitis can have varied presentation. Amount of inflammation can range from mild to moderate to severe reaction.

Anterior uveitis has diverse range of etiology. Etiology of anterior uveitis is influenced by various geographic and ethnic factors. In spite of better understanding of etiopathogenesis and newer diagnostic modalities, finding cause of uveitis in many cases is difficult. Uveitis may require detailed investigations to find etiological diagnosis.

Uveitis can lead to sight threatening complication if adequate and timely treatment is not given leading to blindness. It contributes to 25% of blindness in developing countries[3]. Sight threatening complications in uveitis include complicated cataract, glaucoma, cystoid macular edema and retinal damage. Accurate diagnosis and timely treatment may prevent complications and hence blindness[4,5].

Etiology of anterior uveitis can change over time[6,7]. Various studies on pattern of uveitis from different parts of India have been reported[8–11]. This study was done at our hospital to evaluate various causes, clinical features and complications in anterior uveitis patients.

Method

This is a hospital based prospective study done in department of Ophthalmology. Study duration was from January 2021 to October 2021. All the newly diagnosed patients with anterior uveitis who attended ophthalmology OPD were included in

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the study. Patients with incomplete workup, associated posterior segment inflammation, corneal inflammation and who did not give informed consent to the study were excluded. Patients who did not come for regular follow up were also excluded from study.

69 patients were diagnosed with anterior uveitis and 64 patients were included for the study. Detailed history was taken in all the patients. Complete eye examination was done including visual acuity testing using Snellen visual acuity chart. Slit lamp examination was done to note type of keratic precipitates and their distribution. Anterior chamber cells and flare were graded. Any iris nodules, iris atrophic patches, anterior peripheral synechiae, posterior synechiae were looked for and noted. State of crystalline lens was noted. Intra ocular pressure measurement by Goldmann applanation tonometry and gonioscopy using Goldmann single mirror was done. Detailed fundus examination was done using 90D and by indirect ophthalmoscopy. OCT of macula was done in cases suspected of cystoid macular edema.

Laboratory case investigation were done depending on differential diagnosis. Complete hemogram, ESR, CRP, Urine analysis, Urine Culture and sensitivity, RA Factor, Mantoux Test, Elisa for HIV, HLA B27, Chest X-ray, X-ray of Sacroiliac and Lumbosacral Spine and CT chest were done.

Patients were treated with topical corticosteroids, topical cycloplegics and non-steroidal anti-inflammatory drugs. Depending on anterior chamber reaction, few patients received anterior subtenon triamcinolone acetonide 20mg injection under aseptic conditions. Specific treatment for underlying etiology where ever established was given. Pulmonologist consultation was taken for patients with TB and sarcoidosis. Immunologist opinion was taken in collagen vascular diseases and systemic medications were started accordingly.

Patients were followed up for 6 months. During each visit, complete ocular examination was done including visual acuity. Anterior chamber reaction was assessed and improvement on deterioration was documented.

Initially all patients were followed up weekly for 2 weeks. Later frequency of follow-up was decreased to once in 15 days for two visits and monthly for 5 months. Patients were asked to come immediately if any symptoms like pain, redness in eyes or decreased vision occurred.

Complications like raised intraocular pressure and complicated cataract were noted. Raised intraocular pressure was treated with topical antiglaucoma medication. Cataract surgery wherever required was done under corticosteroid cover. Patient were educated about the condition and need to use topical medication properly. Topical medications were tapered depending on patient's condition.

Ethical committee clearance was taken for the study on 04/12/2020. Ethical clearance certificate number is KIMS/IEC/AO47/M/2020. Informed consent was obtained from all the patients before study. Results were expressed as percentage.

Results

During our study period, 69 patients were diagnosed as anterior uveitis according to SUN working group anatomical classification. Among them 64 patients were included for study (based on inclusion and exclusion criteria) in our study, age of patients ranged from 25 to 60yrs. Maximum number of patients were in 40 to 49 years of age group (Table 1).

Table 1: Distribution of patients by Age

Age (years)	No. of patients	Percentage %
20 – 29	7	10.9%
30 – 39	19	29.6%
40 – 49	24	37.5%
50 – 59	10	15.6%
>60	4	6.2%

Mean age of presentation was 42.6 years. None of our patients were below 20 years. 34.3% patients were females and 65.6% were male patients. In 71.8% patients one eye was involved 28.8% patients had both eyes involved. In our study right eye was affected in 32% of patients and left eye in 40% patients. Majority of our patients (93.7%) had single episode of uveitis, whereas 6.25% patients had recurrent episodes of uveitis after 4 months of inactivity.

Visual acuity at the time of presentation ranged from 6/18 to 3/60 with majority of patients in 6/60 to 6/18 group (Table 2).

Table 2: Visual acuity in the patients at the time of presentation

Visual Acuity	Percentage %
6/6 – 6/12	25
6/18 – 6/60	55
6/60 – 3/60	20

Following the treatment, visual acuity improved to 6/6 to 6/12.

Gonioscopy showed Shaffer's Grade IV angles in 28 patients, Grade III in 34 patients and Grade II in 2 patients. Patchy hyperpigmentation of trabecular meshwork was seen in 20 patients. None of our patients had angle neovascularization or PAS.

Urine culture and sensitivity showed *E. coli* growth in 2 patients and *Klebsiella* growth in 1 patient.

Non granulomatous uveitis was seen in 70.4% patients and granulomatous uveitis developed in 29.6% patients. Despite detailed investigation, etiological diagnosis for anterior uveitis could be done in 46.9% patients and 53.1% patients were idiopathic.

Infectious etiology was found in 28.1% of patients among them, tuberculosis was the commonest accounting for 21.8%, followed by urinary tract infection in 4.6% of patients and toxoplasmosis in 1.5% patients. These patients were referred to physician and was treated with appropriate oral antibiotics for 7 days and oral Nitrofurantoin for 7 days. Noninfectious etiology accounted for 24.8% of patients, trauma was the commonest noninfectious cause, 9.3% patients followed by Ankylosing Spondylitis in 3.1% patients, sarcoidosis in 9.3% patients and rheumatoid arthritis in 3.1% patients (Table 3).

Complicated cataract developed in 21.4% patients. These patients underwent cataract extraction with PCIOL implantation under the cover of oral corticosteroids. Cystoid macular edema developed in 6.2% patients. In our study none of the patients developed hypotony or phthisis bulbi.

Intraocular pressure ranged from 12 to 36 mm Hg with mean IOP of 18mm Hg. Elevated intraocular pressure developed in 22% of patients. These patients were medically treated with anti-glaucoma medication and IOP reduced in all of them.

Table 3: Various etiological factors

Etiology	No. of patients	Percentage
Idiopathic	34	53.1%
Tuberculosis	14	21.8%
Trauma	6	9.3%
UTI	3	4.6%
Sarcoidosis	2	3.1%
Rheumatoid arthritis	2	3.1%
Ankylosing Spondylitis	2	3.1%
Toxoplasmosis	1	1.5%

Discussion

Anterior uveitis has varied etiology and presentation. Diagnosis of underlying cause of uveitis and appropriate treatment results in limiting the vision threatening complications[9,10]. However, diagnosis underlying cause of uveitis is difficult in many cases due to varied ocular and systemic presentations.

Our study included 64 patients with anterior uveitis. Majority of our patients were males which correlated with Rodriguez et al[12]. Mean age of presentation was 41.6 years which correlated with Borde et al. study[13], Dogra M et al.[14], Hussain SPM et al.[15]

71.8 % of our patients had unilateral eye involvement, bilateral involvement was seen only in 28.8% of patients. Right eye was involved in 32% and left eye involved in 40%. Rathinam et al.[16]also reported unilateral involvement in 85.3%. 70% of our patients had non granulomatous uveitis and 29.6% granulomatous uveitis. 93.7% of our patients had single episode of uveitis recurrence was seen in 6.26%. Sudha Madhavi et al.[17] study reported acute anterior uveitis in 75.85% and recurrent uveitis in 6% and Chronic uveitis in 17.8%. Chandravanshi study reported acute anterior uveitis in 82.0%, recurrent episodes in 11.32% and chronic in 6.6% cases.

Etiological diagnosis for anterior uveitis could be established in 46.9% in our study with 53.1% being idiopathic cases. This correlates with Singh et al. study which showed etiological diagnosis in 48.8%. Infectious causes accounted for 21.8% and noninfectious causes 24.8%. Tuberculosis was the commonest infectious cause (18.7%) in our study. R Singh et al.[4]and Prashant Borde et al.[13]study also reported tuberculosis as most common infectious

causes for anterior uveitis. Both anterior and posterior segment of eye can be involved in tuberculosis. Granulomatous uveitis is common in tuberculosis but it can present as non-granulomatous uveitis also. These patients require standard anti tubercular treatment along with ocular management.

Urinary tract infection was seen in 9.3% patients in our study. Two patients had *E. coli* and one patient had *Klebsiella* growth in urine culture. None of our patients had leprosy or syphilis as underlying cause of uveitis.

Trauma was commonest non-infectious cause (9.3%) followed by rheumatoid arthritis (3.1%), ankylosing spondylitis (3.1%) and sarcoidosis (3.1%). These results correlate with Prashant Borde et al. study[13]. Chandravanshi study reported rheumatoid arthritis in 2.8%, trauma in 0.9% and Ankylosing spondylitis in 0.9% of patients.

Complications in uveitis can be due to uveitis or secondary to treatment. Complications are influenced by time of presentation and severity of disease.

Complications were seen in 50% of patients in our study. Elevated IOP was the commonest complication (25%) followed by cataract (21.8%) and cystoid macular edema (3.1%) (Table 4).

Table 4: Various complications observed in the study

Complications	No. of patients (n)	Percentage (%)
Elevated IOP	16	25
Posterior subcapsular cataract	14	21.8
Cystoid macular edema	2	3.1

Rothova A et al.[18]showed cataract in 19% and glaucoma in 11%. None of our patients developed band keratopathy or hypotony.

Conclusion

Anterior uveitis is important sight threatening disorder. Due to diverse underlying etiological causes, tailored tests are essential to come to definitive diagnosis. Timely recognition of complication and appropriate management is very essential in preserving vision.

References

1. Chandravanshi SL. Demographic and Clinical Profile of Anterior Uveitis Patients Presenting in a Tertiary Eye Care Hospital. International Journal of Innovative Research in Medical Science. 2018;3(1):1675–1680. Available from: https://doi.org/10.23958/ijirms/vol03-i01/18.
2. of Uveitis Nomenclature (SUN) Working Group TS. Standardization of Uveitis Nomenclature for Reporting Clinical Data. Results of the First International Workshop. American Journal of Ophthalmology. 2005;140(3):509–516. Available from: https://doi.org/10.1016/j.ajo.2005.03.057.
3. Jain D, Qamaruddin M, Rashmi R. Study of various causes of anterior uveitis. Indian journal of clinical and experimental Ophthalmology. 2019;5(4):452–456. Available from: https://doi.org/10.18231/j.ijceo.2019.108.
4. Singh R, Gupta V, Gupta A. Pattern of uveitis in a referral eye clinic in north India. Indian journal of Ophthalmology. 2004;52(2):121–125. Available from: https://journals.lww.com/ijo/Fulltext/2004/52020/Pattern_of_Uveitis_in_a_Referral_Eye_Clinic_in.4.aspx.
5. Kurumkattil R, Dhar SK, Sharma VK, Trehan HS, Singh A. Clinical Profile and Pattern of Uveitis in a Tertiary Care Centre. International Journal of Innovative Research in Medical Science. 2017;2(12):1580–1582. Available from: https://ijirms.in/index.php/ijirms/article/view/217/203.
6. Das D, Biswas J, Ganesh SK. Pattern of uveitis in a referral uveitis clinic in India. Indian journal of Ophthalmology. 1995;43(3):117–121. Available from: https://www.ijo.in/article.asp?issn=0301-4738;year=1995;volume=43;issue=3;spage=117;epage=121;aulast=Das;type=0.
7. Biswas J, (Sitaula) RK, Multani P. Changing uveitis patterns in South India - Comparison between two decades. Indian Journal of Ophthalmology. 2018;66(4):524–527. Available from: https://journals.lww.com/ijo/Fulltext/2018/66040/Changing_uveitis_patterns_in_South_India__.8.aspx.
8. Biswas J, Narain S, Das D, Ganesh SK. Pattern of uveitis in a referral uveitis clinic in India. International Ophthalmology. 1996;20:223–228. Available from: https://doi.org/10.1007/BF00175264.
9. Das D, Bhattacharjee H, Kumar P, Jain L, Panicker MJ, Das K, et al. Pattern of uveitis in North East India: A tertiary eye care center study. Indian Journal of Ophthalmology. 2009;57(2):144–146. Available from: https://journals.lww.com/ijo/Fulltext/2009/57020/Pattern_of_uveitis_in_North_East_India__A_tertiary.12.aspx.
10. Rao NA. Uveitis in developing countries. Indian Journal of Ophthalmology. 2013;61(6):253–254. Available from: https://journals.lww.com/ijo/Fulltext/2013/61060/Uveitis_in_developing_countries.2.aspx.

11. Dandona L, Dandona R, John RK, McCarty CA, Rao GN. Population based assessment of uveitis in an urban population in southern India. British Journal of Ophthalmology. 2000;84(7):706–709. Available from: http://dx.doi.org/10.1136/bjo.84.7.706.
12. Rodriguez A, Calonge M, Pedroza-Seres M, Akova YA, Messmer EM, D'Amico DJ, et al. Referral Patterns of Uveitis in a Tertiary Eye Care Center. Archives of Ophthalmology. 1996;114(5):593–599. Available from: https://doi.org/10.1001/archopht.1996.01100130585016.
13. Borde P, Priyanka, Kumar K, Takkar B, Sharma B. Pattern of uveitis in a tertiary eye care center of central India: Results of a prospective patient database over a period of two years. Indian journal of Ophthalmology. 2020;68(3):476–481. Available from: https://journals.lww.com/ijo/Fulltext/2020/68030/Pattern_of_uveitis_in_a_tertiary_eye_care_center.17.aspx.
14. Dogra M, Singh R, Agarwal A, Sharma A, Singh SR, Gautam N, et al. Epidemiology of Uveitis in a Tertiary-care Referral Institute in North India. Ocular Immunology and Inflammation. 2017;25(sup1):S46–S53. Available from: https://doi.org/10.1080/09273948.2016.1255761.
15. Hussain SMP, Mirza A. A Prospective study of the clinical profile of patients presenting with anterior uveitis. Journal of Evolution of Medical and Dental Sciences. 2016;5(99):7280–7283. Available from: https://www.jemds.com/data_pdf/Shaikh%20Perveiz-.pdf.
16. Rathinam SR, Tugal-Tutkun I, Agarwal M, Rajesh V, Egriparmak M, Patnaik G. Immunological tests and their interpretation in uveitis. Indian Journal of Ophthalmology. 2020;68(9):1737–1748. Available from: https://journals.lww.com/ijo/Fulltext/2020/68090/Immunological_tests_and_their_interpretation_in.9.aspx.
17. Madhavi KMS, Kumaraswamy RC. Study of clinical and aetiological pattern of anterior uveitis in middle Karnataka. CHRISMED Journal of Health and Research. 2015;2(2):124–128. Available from: https://journals.lww.com/chri/Fulltext/2015/02020/Study_of_clinical_and_aetiological_pattern_of.7.aspx.
18. Rothova A, van Schulten MSS, Treffers WF, Kijlstra A. Causes and frequency of blindness in patients with intraocular inflammatory disease. British Journal of Ophthalmology. 1996;80(4):332–336. Available from: http://dx.doi.org/10.1136/bjo.80.4.332.

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