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Original Research Article

Study of various causes of anterior uveitis

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ABSTRACT

Introduction: Uveitis is one of the common ophthalmic disorders associated with wide variety of systemic and ocular syndromes. This study was done to assess the incidence, pathology and clinical manifestations of anterior uveitis among patients attending ophthalmology department in Shadan Institute of Medical Sciences, Hyderabad.
Objective: To study the different causes and syndromes associated with anterior uveitis in our hospital population.
Materials and Methods: A prospective study of 50 cases of anterior uveitis was conducted at the uvea clinic of our hospital during the period January 2016 to July 2017.
Results: Mean age of presentation was 42.7 years with S.D of 15.1.Acute anterior uveitis was seen in 88% and the rest 12% were chronic anterior uveitis. Majority of acute anterior uveitis were unilateral (94%). Majority of the cases that had anterior uveitis were idiopathic (48%). Trauma and spondylo - arthropathy associated uveitis were the next major causes. Systemic association was absent in 78% of the patients while 22% had anterior uveitis associated with a systemic condition.
Conclusion: The clinical features, relevant investigations and systemic evaluation by medical specialities helped us in making the final diagnosis of the disease.

1. Introduction

Uveitis is broadly defined as inflammation of the uvea, which is the middle pigmented vascular structure of the eye. It is one of the leading causes of blindness in both developed and developing countries, including India. Although the inflammation can be due to a variety of causes ranging from infections to neoplasm - the resulting uveal inflammation usually presents with similar symptoms that affect the patient's vision.

About 25% of blindness in developing countries is attributed to uveitis and its complications. Vision threatening complications of uveitis include secondary cataract, glaucoma, cystoid macular edema and retinal photoreceptor or optic nerve damage. In developed countries, the incidence of blindness from uveitis is comparatively lower, 3% to 10%.

This remarkable difference in the incidence of blindness between developing and developed countries is attributed to differences in socioeconomic conditions, access to medical care, etc. Etiologic differences could also play a significant role in the high levels of blindness that occur in developing countries. Infections are a leading cause of uveitis in India and other developing countries, whereas idiopathic uveitis is a leading cause in developed countries.[5,6,7,8]

Anterior uveitis ranges in presentation from white, quiet eye with low grade inflammation to a painful red eye with moderate to severe inflammation. Inflammation confined to anterior chamber is called iritis; if it spills to retrolental space, it is called iridocyclitis; if it involves cornea, keratouveitis; if it involves sclera, sclerouveitis.

The present study was done at our hospital with an aim to investigate different causes and syndromes causing

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anterior uveitis in patients attending ophthalmic outpatient department and to correlate the pattern of anterior uveitis with that of the other studies.

2. Materials and Methods

2.1. Study design

Prospective study

2.2. Sample size

50 patients

2.3. Study area

Department of Ophthalmology of a tertiary referral center.

2.4. Study population

Subjects were chosen from the patients visiting our hospital

2.5. Study period

January 2016 to July 2017

2.6. Inclusion criteria

1. Any case of anterior uveitis that presented for the first time to our hospital was included in the study.
2. Lens induced uveitis were also included in the study.
3. Traumatic anterior uveitis was also included.

2.7. Exclusion criteria

1. Cases with inflammation of posterior segment were excluded
2. Cases associated with corneal pathology we re excluded.
3. Patients not willing to take part in the study.

Every selected case was subjected to detailed history and investigations which included visual acuity by Snellens chart, slit lamp examination, tonometry, gonioscopy and posterior segment evaluation. Systemic investigations ordered included CBC, ESR, RBS, CRP, ASO titres, FTA-ABS, Rh factor, ANA, ACE, Mantoux test, Urine C/S, Stool for ova & cyst, X-ray chest.

A medical follow up of 2-3 months was performed to obtain the information. Data was collected by observation and investigations. Medical records of all patients were reviewed. Patient was explained about the disease and its complications, emphasized on proper use of medication and tapering was done on subsequent visits.

3. Results

Total number of patients included in our study was 50.

The sex distribution showed that around 56% (n=28) patients were males and the rest of the patients, about 44% (n=22) were females. A low percentage of female population in our study can be due to poor socioeconomic status.

Age of the patients included in our study ranged between 18 to 66 years with the mean age being 42.7years. The demographic pattern in our study correlated well with other studies. The incidence and prevalence was found lowest in pediatric age group and highest in those over 65, as per a study in the United States. Most of the cases occurred in the fourth to fifth decade of life with maximum incidence of 26% occurring in the fourth decade.

Unilateral presentation was seen in 94% cases, while 6% had bilateral uveitis. The pattern of anterior uveitis showed acute anterior uveitis presentation in 44[88%] cases whereas 6 cases [12%] had chronic 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 pro bably because of early referral by the physician/ophthalmologist from rural areas to the tertiary hospital due to lack of facilities like slit lamp and indirect ophthalm oscopy for proper diagnosis and management.

Uveitis was granulomatous type in 10% and the rest 90% had a non-granulomatous type of inflammation, the percentages are in par with major studies as that of Rodriquez et al which had 89.8% of non-granulomatous and 10.2% cases of granulomatous uveitis.

The aetiological associations in patients with anterior uveitis are enumerated in Table 1. The final diagnosis in our study was based on only clinical findings in certain cases, while others were confirmed with the help of laboratory investigations. Our study revealed that the commonest cause of anterior uveitis is idiopathic with n= 24 [48 %] out of 50 cases had no identifiable aetiology. Second most common cause was traumatic uveitis n=6 [12%].

A comparative analysis of different aetiologies of anterior uveitis as studied in other national and international researches is summarized in tabular columns 2 & 3.

In our study, anterior uveitis with systemic association was found only in 11[22%] of the cases while the rest 39[78%] did not show any systemic association. They were mostly idiopathic or had a causative factor confined to the ocular system.

The complications that resulted from the episodes of both acute and chronic anterior uveitis in our study included 1 case [2%] of secondary glaucoma, 5 cases [10%] of complicated cataract and 2[4 %] cases of corneal opacity. Remaining 40 cases [80%] had no complications and these were mostly idiopathic acute anterior uveitis.

Visual acuity at presentation was between 6/6-6/18 in 43.4%. After treatment following the standard protocol 73.6% patients had the final visual acuity of 6/6-6/18. Visual acuity was less than 6/60 in about 18.9 % of the patients

Table 1: Different causes of anterior uveitis

Final Diagnosis	Cases	
	Number	%
1. Idiopathic	24	48
2. Spondylo-arthropathy associated	5	10
3. Herpes simplex keratouveitis	1	2
4. Traumatic anterior uveitis	6	12
5. Tuberculosis	3	6
6. Fuch's heterochromic uveitis	1	2
7. Hansen's uveitis	2	4
8. Lens induced uveitis	4	8
9. Herpes zoster	2	4
10.Sclerokerato uveitis	1	2
11.Inflammatory bowel disease	1	2
Total	50	100

Table 2: Comparative analysis of aetiologies in anterior uveitis with international studies

	England study 1976	USA study 1986	Israel study 1988	Present study 2012
Idiopathic	271 /44.1	72 /43.1	94 /51.4	24/48
Trauma / surgery	–/–	10 /5.9	32 /17.5	10 /20
Herpes simplex	—/–	10 /5.9	14 /7.7	1/2
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 /2
Leukemia	—/–	—/–	4 /2.2	—/—
Reiters disease	—/—	6 /3.6	3 /1.6	—/—
TB	158 /25.7	—/–	3 /1.6	3 / 6
Leprosy	2 /0.3	—/—	3 /1.6	2 /4
Syphilis	—-/—	5 / 3.0	1 10.5	—/–
Herpes zoster	—/–	5 /3.0	1 /0.5	2 /4
IBD	–/–	2 /1.2	1 /1.05	1 / 2
Glaucomatocyclitic crisis	—/—	2 /1.2	1 /0.5	—/–
Others	55 /8.9	–/–	5 /2.7	6 /12
Total	614 /100	167 /100	183 /100	50 /100

Table 3: Comparison of aetiological diagnosis of anterior uveitic entities with other Indian studies

Diagnosis	Henderlyet al 1987(I) %	Biswas et al 1995(2) %	R Singh et al 2004 %	Present Study 2017 %
Idiopathic	43.47	48.8	61.3	48
Collagen diseases	30.7	29.4	18	14
Lens &IOL induced	3.7	10.6	-	8
Fuchs	6.6	4.1	5.1	2
Traumatic	2.59	2.9	-	12
TB	-	1.2	7.9	6
Leprosy	-	1.2	0.8	4
Herpetic uveitis	9.25	1	1.5	2

and the low visual acuity in most of these cases is due to complications like complicated cataract or glaucoma or preexisting low vision due to cataract.

4. Discussion

The variation in the spectrum of uveitis is largely due to complex geographic, ecological, racial, nutritional and socioeconomic differences. All patients in our study were Asian Indians and majority belonged to South India.

The mean age of the presentation of anterior uveitis in our study was found to be 42.7years, which correlated well with the study by Rodrigurez et al.

In our study males and females contributed 56% and 44 % respectively whereas study by Rodrigurez et al showed as slightly higher percentage of men. The same study showed high number of chronic and recurrent uveitis whereas our study shows acute uveitis.

A study conducted by A Gomez et al stated that acute anterior uveitis is most common form of uveitis and most of them are idiopathic. The percentage of granulomatous and non-granulomtous uveitis based on clinical identification was in par with other major studies.

In this series the aetiology could be established in 52 %. In 48 % patients the etiology could not be established, despite all possible laboratory investigative procedures and ancillary tests. The percentage of idiopathic cases in our study was more or less similar to that of other international studies like England study (1976) 44.1%, the USA study (1986) showed 43.1% and the Israel study (1988) which had 51.4%.

Infections significantly contribute to the etiology of anterior uveitis as was observed in a study conducted by R Sing et al in which tuberculosis contributed to the major cause with 14.5% followed by toxoplasmosis in 10.1% and among non-infectious 34.3% were suffering from ankylosing spondylitis.

The percentage of infectious diseases due to TB & leprosy is more compared to the studies of western world. Herpetic uveitis was 2% in our study showing similarity with Henderly et al which was also 1.2%.

Fuch's heterochromic cyclitis was 2% in our study and the incidence was less compared to Henderly et al which showed 6.6%, Biswas et al 4.1%, Singh R et al 5.1%.

Though our study was not a population based study, we still found that our study findings are comparable with other studies.

5. Conclusion

A detailed clinical evaluation, proper investigations and collaboration with other medical specialities helped us in making the final diagnosis of the disease.

The cause of uveitis varies greatly by geographical region throughout the world. Many developing countries have a tropical climate allowing unique disease pathogens, vectors and host reservoir to flourish. In general, idiopathic causes are more common in anterior uveitis and infectious causes are more common in posterior uveitis. Tuberculosis remains the main etiology of infectious uveitis in India. Poverty, overcrowding, limited formal and public education, poor hygiene and definite medical resources also play a role. Hence all the treating physicians should be aware of global variations in disease pattern to provide optimal medical care.

Although data on the prevalence and incidence of uveitis as a cause of vision loss in developing region are scarce, it is for sure a major cause of blindness. Detailed and expensive investigations in a developed country like India is not justified in all patients, so a tailored approach towards investigations should be followed based on the epidemiological background of the patient.

6. Financial Interest

None.

7. Acknowledgement

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8. Conflicts of interest

None.

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