Clinical Profile and Etiological Pattern of Uveitis

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Abstract

Background: Multiple aetiological elements contribute to uveitis, a complicated ophthalmic inflammatory illness. Although an infectious agent or trauma may be the source of inflammation, the underlying process almost always seems to be autoimmune in origin. The most prevalent kind of uveitis is anterior uveitis, with an annual incidence rate of 17 occurrences per 100,000 people. This study's goal is to assess the causes, course of therapy, effects, and side effects of uveitis.

Methods: All patients with anterior, intermediate, posterior, and pan uveitis during the duration of the study were included. A thorough ocular examination included best corrected visual acuity (BCVA), slit lamp biomicroscopy examination (SLE), indirect ophthalmoscopy (IDO), applanation tonometry (AT), and gonioscopy. In addition, fundus fluorescein angiography (FFA), and optical coherence tomography (OCT)B scan ultrasonography were performed if needed. Routine blood investigations and baseline workups like chest x-ray were done.

Results: Among the cases of anterior uveitis maximum numbers of 40% cases were due to idiopathic, 25% of cases were immune-related and 35% were due to infective causes. In the intermediate uveitis cases, the infective causes were found in 75% of cases and idiopathic in 25% of cases. In posterior uveitis cases, all were due to infective origin. The pan uveitis cases showed maximum cases of 62.5% were due to immune-related conditions and 25% were infective and 12.5% were idiopathic cases. The overall cases due to infective cases were 27/60 (45%) of cases followed by 30% in the idiopathic category and 25% in the immune-related causes.

Conclusion: To prevent vision impairment due to uveitis, early identification and prompt treatment is crucial. Further research on the patterns and specific etiologies of uveitis from various regions of India and the world may aid in the early diagnosis and treatment of the condition.

Keywords: Uveitis, Anterior uveitis, idiopathic uveitis, Infective uveitis

Introduction

The middle highly vascular-pigmented layer of the eye is called the uvea it consists of the choroid, ciliary body, and iris. The anterior hyaloid, cornea, and lens are examples of avascular tissues that are nourished by aqueous secreted by the ciliary body. The outer retina receives nourishment from the choroid. The uveal

tract is commonly affected by systemic vascular, immunological, and viral illnesses because of its high vascularity. Uveitis is characterized as uveal inflammation. Because of intricacies in the etiology, complexity in location, and ethnic, dietary, and socioeconomic inequalities, the spectrum of "uveitis" etiology is quite broad and can vary. [1] In the West, uveitis-related severe vision loss causes 10% of blindness. [2] The serious effects of untreated or reoccurring anterior uveitis are likely underreported and underestimated. [3] Iridocyclitis is the most prevalent kind of anterior uveitis, which is further divided into iritis, anterior cyclitis, and other subtypes. [4] Although anterior uveitis frequently results in a painful red eye and modest to severe vision loss, its long-term aftereffects greatly add to the overall burden. It might be difficult to make the right diagnosis and to determine the exact etiology of anterior uveitis. Although proper diagnosis has become simpler thanks to technological advancements, it can still be difficult for the treating ophthalmologist. A population's uveitis pattern can be evaluated to get insight into the frequency of a certain illness and the emergence of any new patterns of disease. Numerous research detailing the genesis and pattern of uveitis from various parts of India and the world have been published in the literature. [5, 6] We outline research that was conducted at our facility to assess the various aetiologies, clinical characteristics, and related systemic associations in uveitis patients.

Material and Methods

This cross-sectional study was conducted among the patients presenting with ocular complaints presenting to the Department of Ophthalmology, Prathima Institute of Medical Sciences, Naganoor, Telangana State. Institutional Ethical approval was obtained for the study. Written consent was taken from all the patients in the study. A thorough history was taken before a methodical eye examination was performed.

Inclusion criteria

1. All patients with anterior, intermediate, posterior, and pan uveitis.
2. Both male and female.
3. All age groups
4. Willing to participate in the study and available for follow up

Exclusion criteria

1. Uveitis with trauma as the etiology
2. Uveitis following intraocular surgery

A detailed history regarding age, occupation, residence and known systemic diseases past or present was elicited. Patients were questioned about backache/joint problems, skin diseases, respiratory diseases, neurological diseases, gastrointestinal diseases, oral and genital ulcers, and sexually transmitted diseases. A thorough ocular examination included best corrected visual acuity (BCVA), slit lamp biomicroscopy examination (SLE), indirect ophthalmoscopy (IDO), applanation tonometry (AT), and gonioscopy. In addition, fundus fluorescein angiography (FFA), and optical coherence tomography (OCT)B scan ultrasonography were performed if needed. Routine blood investigations and baseline workup like chest x-ray, Mantoux test, serum angiotensin-converting enzyme (ACE), serum calcium levels, venereal disease research laboratory (VDRL), fluorescent treponemal antibody (FTA-ABS), was carried out. Anti-nuclear antibodies (ANA) rheumatoid factor (RF), human leucocyte antigen (HLA)typing, enzyme-linked immunosorbent assay (ELISA)for Toxocara and toxoplasma, CT/MRI brain, herpes zoster/varicella zoster serology, cytomegalovirus serology, aqueous and vitreous tap for PCR when indicated. Following a detailed history and ocular examination, a differential diagnosis list is compiled. The diagnosis of uveitis was made according to the International Uveitis Study group (IUSG) and Standardization of

Uveitis Nomenclature (SUN) working group.

Statistical analysis: Data collection and analysis were carried out using an MS Excel spreadsheet and SPSS version 22. (Chicago, IL, USA). While qualitative factors were expressed in proportions and percentages, quantitative data were expressed using means and standard deviations. To determine the difference between the two proportions, Fisher's exact test was performed.

Results

Out of the n=60 cases included in the study, the age range was from 15 years to 65 years and the mean age of the study cohort was 38.5 ± 7.5 years. Most of the cases were belonging to the age group 41 – 50 years with 26.67% of all the cases followed by the age group 31 – 40 years with 23.33% therefore 31 – 50 years contributed 50% of all the cases in the study. A maximum of 66.67% of cases in the study were of anterior uveitis followed by posterior and pan uveitis in 13.33% of cases. The distribution of the cases based on age as well as the type of uveitis has been depicted in table 1.

Table 1: Distribution of uveitis cases included in the study

Age in years	Anterior uveitis	Intermediate uveitis	Posterior Uveitis	Pan uveitis	Total
15 – 20	1	0	1	1	03 (05.00%)
21 – 30	8	1	1	1	11 (18.33%)
31 – 40	7	2	2	3	14(23.33%)
41 – 50	11	1	1	3	16(26.67%)
51 – 60	8	0	2	0	10(16.67%)
> 60	5	0	1	0	06(10.00%)
Total	40	4	8	8	60(100.0%)

Figure 1 represents the gender-wise distribution of different types of uveitis. Among n=40 patients with anterior uveitis, n=22/40 (55%) were females and n=18/40 (45%) were male cases. Among the cases of intermediate uveitis, all the n=4 cases were females. The posterior uveitis cases were n=8 out of which n=6/8(75%) were males and n=2/8(25%) were females. In the cases of pan uveitis out of n=8 cases, n=5/8 (62.5%) were males and n=3/8(37.5%) were females.
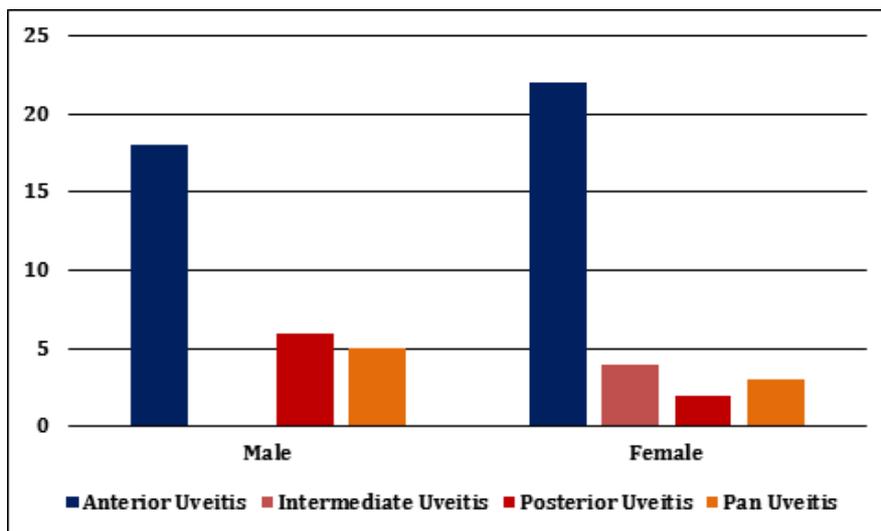

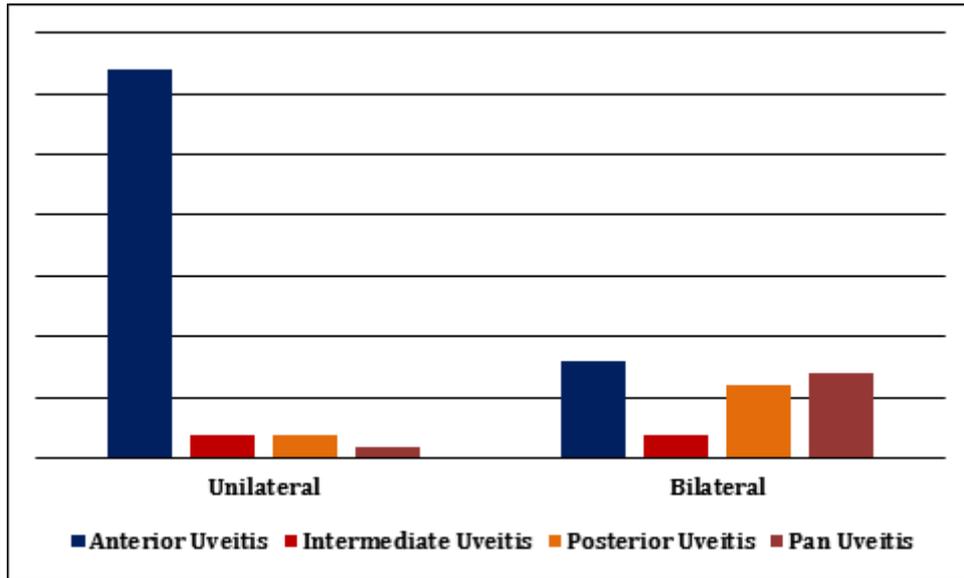**Figure 1: Sex-wise distribution of cases in different types of uveitis**

Figure 2: Laterality of involvement of different uveitis in the cases of the study

Based on the laterality of involvement of the cases in the study in cases of anterior uveitis 80% were unilaterally involved and 20% were bilaterally involved cases. In cases of intermediate uveitis, 50% each were unilateral and bilateral respectively. In cases of posterior uveitis, 87.5% were bilateral and 12.5% were unilateral cases the details have been depicted in figure 2.

Table 2: Showing the etiology of different uveitis recorded in the cases of the study

	Anterior Uveitis	Intermediate Uveitis	Posterior Uveitis	Pan Uveitis	Total
Idiopathic	16	1	0	1	18
Immune-related	10	0	0	5	15
Infective	14	3	8	2	27
Total	40	4	8	8	60

Among the cases of anterior uveitis the maximum number of 40% were due to idiopathic, 25% of cases were immune-related and 35% were due to infective causes. In the intermediate uveitis cases, the infective causes were found in 75% of cases and idiopathic in 25% of cases. In posterior uveitis cases, all were due to infective origin. The pan uveitis cases showed maximum cases of 62.5% were due to immune-related conditions and 25% were infective and 12.5% were idiopathic cases. The overall cases due to infective cases were 27/60 (45%) of cases followed by 30% in the idiopathic category and 25% in the immune-related causes details have been depicted in table 2.

In n=40 cases of anterior uveitis, n=11 cases were granulomatous and n=21 cases were non-granulomatous n=5 could not be classified in either type. In the anterior uveitis cases, n=14 were acute cases, n=19 were chronic cases and n=7 cases were recurrent uveitis cases. In n=4 cases of intermediate uveitis, n=3 cases were acute and n=1 was recurrent. Among n=8 cases of posterior uveitis n=3 cases were acute cases and n=4 cases were chronic and n=1 was recurrent uveitis. In the pan uveitis cases, all the n=8 cases were chronic uveitis.

Discussion

In the current study, we found the most affected due to uveitis were aged 31 – 40 years with 50% of all the cases the mean age was 38.5 ± 7.5 years similar findings

have been reported by Ben Ezra et al., [7] and Farve et al., [8]. In this study, we did not find any predominance of uveitis based on sex. Smith RL et al., [9] and Rothova et al., [10] in their study did not find any predilection based on sex. However, Rothova et al., [10] while male predominance was seen in a study by Biswas et al., [11] In the study we found Unilateral uveitis (66.67%) was more common than bilateral Unilateral uveitis was commonly seen in idiopathic in 20% of cases of the study. Anterior uveitis was the most common anatomical type of uveitis in 66.67% followed by pan uveitis and posterior uveitis in 13.33% and intermediate uveitis in 6.67% of cases. Zheng et al., [12] found intermediate uveitis was the least common and accounted for 1% of the cases in the study population in China. In a similar study by Biswas et al., [11] anterior uveitis was the most common type followed by intermediate, posterior, and pan uveitis. R Singh et al., [12] Dogra et al., [13] Das et al., [14] Venkatesh et al., [15] Hendererly et al., [16] reported that anterior uveitis was the most common type followed by posterior, intermediate and pan uveitis. Similar to this research, Plasule et al., [17] said that anterior uveitis was the most prevalent kind, followed by pan Uveitis, posterior uveitis, and intermediate uveitis. In this study, we found chronic uveitis in 51.67% of cases which was the commonest type followed by acute uveitis and recurrent uveitis. Previous studies have shown that acute form of uveitis is more common in community hospitals and chronic form of uveitis predominate in referral practices. [18, 19] Since many of the cases are referred to our hospital therefore chronic form is the predominant type of uveitis in this study. In this study 40% of cases were non-granulomatous and 36.67% were granulomatous these results are similar to studies were done in the past by Khairallah et al., [18] Biswas et al., [11]. In 24% of the cases of the study, the type of inflammation could not be ascertained. In this study, 45% of cases of uveitis were due to infectious etiology and 25% of cases were due to idiopathic causes. Infective uveitis was more common than non-infective uveitis. Infectious uveitis accounted for a minority of cases in developed countries. [2, 20, 21] Infectious uveitis occurs in greater frequency in the developing world. When intraocular inflammation was not indicative of a recognized uveitic entity or could not be linked to a particular underlying systemic illness, the condition was referred to as idiopathic. N=16 out of the n=40 individuals with anterior uveitis lacked a diagnosis. Thus, idiopathic causes accounted for the majority of anterior uveitis cases. This is comparable to the study conducted by Biswas et al., [11] The most typical cause of intermediate uveitis was pars planitis (66%, n=2). Pars planitis was listed as the most typical etiology in intermediate uveitis by Mi H et al., [23] Similar to that, one Pan uveitis case lacked a diagnosis. TB-related posterior uveitis (n=4) was the most frequent cause of posterior uveitis. Focal choroiditis, multifocal choroiditis, and vasculitis were the symptoms of proven tubercular uveitis (n=1). Similar to my findings, Rathinam et al., [21] reported that infective uveitis is more prevalent in posterior types of uveitis. Similar to the current study, Biswas et al., [11] showed that posterior uveitis caused by TB was the most frequent cause. The common causes of pan uveitis in my study were *Vogt-Koyanagi-Harada* VKH (n=4) and tuberculosis(n=4) 50% each. This is similar to the studies by Biswas J et al., [11, 24] which reported VKH as the most common cause of pan uveitis. Tuberculosis is an important cause of pan uveitis there were no cases of sympathetic ophthalmia in our study. [25]

Conclusion

The present study in its limitations found anterior uveitis was the commonest type of uveitis. Idiopathic uveitis was the commonest type of anterior uveitis. Pars planitis is the commonest type of

intermediate uveitis. Tuberculosis was the common cause of posterior uveitis. Vogt Koyanagi Harada disease was the common cause of pan uveitis. Infective uveitis is more common than non-infective uveitis. To prevent vision impairment due to uveitis, early identification and prompt treatment are crucial. Further research on the patterns and specific aetiologies of uveitis from various regions of India and the world may aid in the early diagnosis and treatment of the condition.

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