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Original Research Article

Clinical Profile of Uveitis Among Patients Attending a Tertiary Care Ophthalmology Centre: An Observational Study

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Abstract:

Background: Uveitis is a heterogeneous group of ocular inflammatory disorders with varied anatomical patterns, clinical courses, and infectious, inflammatory, or idiopathic etiologies. Its diverse presentation and potential for visual morbidity make systematic clinical and etiological evaluation important, particularly in tertiary-care settings.

Aim: To evaluate the clinical profile, anatomical distribution, clinical course, and etiological spectrum of uveitis among patients attending a tertiary care ophthalmology centre in Bihar, India.

Methodology: This hospital-based cross-sectional observational study included 160 patients aged >12 years diagnosed with uveitis over a one-year period at the Department of Ophthalmology, Narayan Medical College and Hospital, Sasaram, Bihar. Demographic, clinical, anatomical, and etiological characteristics were documented using a structured proforma. Uveitis was classified according to the Standardization of Uveitis Nomenclature criteria, and relevant laboratory and ancillary investigations were performed as clinically indicated.

Result: Males constituted 65.0% of participants, while 35.0% were females. Unilateral involvement was observed in 61.9% and bilateral involvement in 38.1%. Acute disease was most common (43.8%), followed by chronic (35.0%) and recurrent (20.0%) disease. Anterior uveitis predominated (65.0%), followed by posterior (18.1%), intermediate (11.9%), and panuveitis (5.0%). Idiopathic uveitis was the commonest etiology (54.4%), followed by tuberculosis (11.9%), HLA-B27-associated uveitis (6.3%), and toxoplasmosis (4.4%).

Conclusion: Uveitis demonstrated considerable clinical and etiological heterogeneity, with anterior and idiopathic forms predominating. Systematic anatomical classification and targeted etiological evaluation are essential for appropriate management and prevention of visual morbidity.

Keywords: Uveitis; anterior uveitis; posterior uveitis; panuveitis; tuberculosis; HLA-B27; toxoplasmosis; clinical profile.

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Introduction

Uveitis is a diverse category of inflammation of the uveal tract alone or together with inflammation of other ocular components. It is an important cause of visual morbidity because the inflammatory process primarily involves the uveal tissues, but it may involve or have a negative impact on the retina, the vitreous, the optic nerve and other tissues responsible for visual function. Anatomically, uveitis is divided into anterior, intermediate, posterior and panuveitis based on the location of the inflammation. Anterior uveitis affects the iris and/or pars plicata; intermediate uveitis primarily affects the vitreous, pars plana and surrounding periphery retina; posterior uveitis affects the choroid and/or outer retinal structures; and panuveitis is defined as inflammation of the anterior and posterior segments of the eye. Anterior uveitis tends to occur more commonly than inflammation of the posterior segment and, if diagnosed and treated appropriately, is less sight threatening [1]. However, the clinical course and visual prognosis is highly variable depending on the location, severity, duration, recurrence and underlying cause of inflammation.

Uveitis can be classified according to its cause, as infective, non-infective and idiopathic. Infectious uveitis can be caused by bacteria, viruses, fungi, spirochetes or parasites. Tuberculous uveitis remains a significant cause of intraocular inflammation in developing countries such as India. Mycobacterium leprae causes leprosy-associated uveitis, whereas Treponema pallidum causes syphilitic uveitis. The

viral are herpes simplex virus, herpes zoster virus, cytomegalovirus, and human immunodeficiency virus-associated ocular disease. Toxoplasma gondii is an important cause of posterior inflammation and intraocular infection among parasitic infections [2]. Non-infectious uveitis can be associated with systemic inflammatory and autoimmune diseases such as juvenile idiopathic arthritis, human leukocyte antigen (HLA) associated disease, Behçet's disease, rheumatoid arthritis, systemic lupus erythematosus, Vogt–Koyanagi–Harada disease, sarcoidosis and systemic vasculitic diseases. However, in a large percentage of patients, even with proper clinical assessment, no ocular or systemic cause is found, and these cases are labeled as idiopathic uveitis [3].

In the past few decades, the description of uveitis has been expanded to include several unique clinical entities. Acute posterior multifocal placoid pigment epitheliopathy (APMPPE), multiple evanescent white dot syndrome (MEWDS), acute retinal necrosis (ARN), and birdshot chorioretinopathy are examples of relatively uncommon inflammatory diseases for which the exact cause and mechanism of disease can be less well understood. They must be recognized by careful clinical examination and in selected cases, targeted ancillary investigations. Therefore, it would be more appropriate to think of uveitis as a clinical syndrome rather than a single disease and one with a variety of anatomical, etiologic, systemic and prognostic implications [4].

The importance of uveitis is not only in the inflammatory signs and symptoms, but also in the possible structural complications that can occur during the course of the disease. Chronic or recurring inflammation may cause secondary cataract, elevated intraocular pressure and glaucoma, cystoid macular edema, vitreous opacities, retinal damage, photoreceptor dysfunction and optic nerve involvement which ultimately may result in permanent vision loss [5]. This visual loss can be especially significant in posterior uveitis and panuveitis, owing to the occurrence of direct involvement of the macula, retina, choroid, and optic nerve. Therefore, early diagnosis, timely treatment and follow up are important to control inflammation, prevent permanent structural damage and save sight. In addition, ocular inflammation can be a presenting sign of systemic inflammatory, infectious and autoimmune disorders and so the evaluation of the eye may be of greater significance than the eye alone [6].

Evaluation of a uveitis patient must be thorough, with detailed history taking, comprehensive ocular examination and appropriate systemic evaluation. Clinical data is important such as onset and duration of onset, laterality, prior episodes, ocular trauma/surgery, medication exposure, infectious history, and systemic inflammatory disease symptoms. The ocular examination should define the anatomical site of the inflammatory process, the extent of the inflammation and the presence of complications. Depending on the clinical presentation, basic investigations (e.g. complete blood count, Mantoux testing, chest radiography and radiological assessment of the sacroiliac joints) may be considered [7]. Where a specific systemic or infectious disease is suspected, additional investigations may be useful, such as HLA-B27 typing for spondyloarthritis, HLA-B5 for Behçet's disease, anti-nuclear antibody for juvenile idiopathic arthritis and for lupus, anti-double-stranded DNA antibody for systemic lupus erythematosus, anti-neutrophil cytoplasmic antibody for systemic vasculitis, QuantiFERON-TB gold for tuberculosis, and treponemal antibody tests such as FTA-ABS for syphilis.

It is important to note that laboratory tests in uveitis should be based on the clinical phenotype and presumed underlying cause and not be indiscriminate. A focused diagnostic approach helps to reduce unnecessary investigations, support a better understanding of the results and to start the appropriate therapy in a timely manner. Clinical features of uveitis can also differ between populations due to variable infectious disease prevalence, genetics, exposures, referral habits and the availability of specialist ophthalmic services [8]. The above are all especially important in tertiary-care settings in Bihar, India where a wide range of ocular inflammatory conditions due to infectious, inflammatory, idiopathic, and systemic disease may present.

Although uveitis is a clinically significant condition, region-specific data on the anatomical distribution, spectrum of cause, clinical accompaniments and systemic risk factors are useful in understanding the burden and presentation of the condition at individual healthcare facilities. Hence, the present observational study was conducted in a tertiary ophthalmology care center in Bihar, India to assess the clinical profile of patients with uveitis in terms of anatomical features, clinical parameters, potential etiological causes, systemic associations and risk factors. The characterization can help enhance the diagnosis and understanding of uveitis and guide the clinical care and monitoring of patients with uveitis.

Methodology

Study Design: The present study was a hospital-based cross-sectional observational study conducted to evaluate the clinical profile, demographic characteristics, anatomical classification, presenting features, associated systemic conditions, investigations, and management patterns of patients with uveitis. The study was designed to systematically assess patients presenting with uveitis to the ophthalmology outpatient department and to document their clinical and investigative findings using a standardized study protocol.

Study Area: The study was conducted in the Department of Ophthalmology, Narayan Medical College and Hospital, Sasaram, Bihar, India.

Study Duration: The study was conducted over a period of 1 year.

Sample Size: A total of 160 patients (N=160) diagnosed with uveitis and fulfilling the predefined eligibility criteria were included in the study.

Study Population: The study population comprised patients aged more than 12 years presenting to the Department of Ophthalmology with uveitis during the study period. Patients with anterior, intermediate, posterior, or panuveitis were considered for evaluation. Both newly diagnosed and previously diagnosed patients presenting for evaluation or follow-up were considered, provided they fulfilled the eligibility criteria.

Data Collection: Data were collected using a predesigned and structured proforma. Before enrollment, the purpose and nature of the study were explained to each participant, and informed written consent was obtained. Demographic and clinical information was systematically recorded.

The demographic variables included age and sex. A detailed history was obtained regarding the duration of uveitis, duration of presenting complaints, affected eye, number of previous episodes, and the clinical course of the disease, which was categorized as acute, chronic, or recurrent where applicable. A detailed history was also elicited regarding ocular symptoms, previous treatment, associated systemic illness, family history of uveitis, and other relevant medical conditions.

Inclusion Criteria

Patients were included in the study if they fulfilled the following criteria:

- Patients above 12 years of age presenting to the ophthalmology outpatient department.
- Patients with a clinical diagnosis of uveitis involving one or both eyes.
- Patients willing to undergo the required ophthalmological examination and investigations.

Patients who provided informed written consent to participate in the study.

Exclusion Criteria

Patients were excluded if they had:

- Uveitis following any intraocular surgery.
- Endophthalmitis.
- Uveitis following intraocular trauma.
- Uveitis is secondary to ocular or systemic malignancy.
- Patients are unwilling to provide informed consent or unable to complete the required clinical evaluation.

Clinical Examination and Procedure: All eligible patients underwent a detailed ophthalmological evaluation according to a standardized protocol. Visual acuity was assessed in both eyes using an illuminated Snellen's chart at 6 metres. Near vision was assessed using a standard near-vision chart. Visual acuity was recorded with or without corrective spectacles as appropriate at the time of presentation.

A detailed anterior segment examination was performed using slit-lamp biomicroscopy to assess the conjunctiva, cornea, anterior chamber, iris, and lens, with particular attention to inflammatory signs. Intraocular pressure (IOP) was measured using a Goldmann applanation tonometer.

A detailed dilated fundus examination was performed whenever the ocular media permitted adequate visualization of the posterior segment. Direct ophthalmoscopy was performed using a Heine direct ophthalmoscope, while indirect ophthalmoscopy was performed using a Heine indirect ophthalmoscope with a +20 dioptre Volk lens. In patients in whom media opacity prevented adequate visualization of the posterior segment, ocular ultrasonography was performed to assess the posterior segment.

The anatomical classification of uveitis was performed according to the Standardization of Uveitis Nomenclature (SUN) Working Group classification, with categorization based on the predominant anatomical site of inflammation. Patients were clinically assessed for anterior, intermediate, posterior, or panuveitis according to the site of ocular inflammation.

Laboratory and Ancillary Investigations: All patients underwent investigations as clinically indicated to determine possible underlying infectious, inflammatory, autoimmune, or systemic associations. Routine laboratory investigations included complete blood count, erythrocyte sedimentation rate, liver function tests, renal function tests, Mantoux skin test, and urinalysis.

Radiological investigations, including chest X-ray (posteroanterior view), X-ray of the sacroiliac joints, and X-ray of the lumbosacral spine, were advised whenever clinically indicated. Ocular ultrasonography was performed in patients with media opacity when direct visualization of the posterior segment was not possible.

Additional investigations were undertaken using a tailored diagnostic approach in patients with a strong clinical suspicion of an underlying systemic disorder known to be associated with uveitis. Such investigations were selected according to the patient's clinical history, symptoms, examination findings, and

suspected systemic association. Appropriate referrals to medical, surgical, dermatological, rheumatological, or other relevant specialties were made whenever an associated systemic disease was suspected or identified.

The final diagnosis was established by correlating the chronological history, clinical manifestations, ophthalmological examination findings, and relevant laboratory and ancillary investigation results.

Management and Follow-up: Patients were managed according to the anatomical type, severity, laterality, clinical course, and underlying cause of uveitis. Appropriate topical and/or systemic corticosteroid therapy was administered when clinically indicated. Immunosuppressive therapy was considered in patients requiring steroid-sparing treatment or in those with persistent or recurrent inflammation, according to clinical indications.

Patients with an identified or suspected systemic disease were referred to the appropriate specialty for further evaluation and management. Relevant specialist consultation was also sought before initiating or modifying corticosteroid or immunosuppressive therapy whenever required.

Patients receiving oral corticosteroids were specifically questioned regarding possible adverse effects during follow-up visits. In patients receiving immunosuppressive agents, relevant laboratory parameters, including total leukocyte count, platelet count, and liver function tests, were monitored periodically to assess treatment safety. Clinical response, recurrence, treatment-related adverse effects, and the need for modification of therapy were documented during follow-up whenever applicable.

Statistical Analysis: All collected data were entered into a computerized database and analyzed using appropriate statistical methods. Continuous variables were summarized using mean and standard deviation (SD) or median and interquartile range, as appropriate, while categorical variables were expressed as frequencies and percentages. The distribution of quantitative variables was assessed before selecting the appropriate statistical test.

For comparison of categorical variables, the Chi-square test or Fisher's exact test was used as appropriate. For comparison of continuous variables between two groups, the independent-samples Student's t-test was used for normally distributed data, while the Mann–Whitney U test was applied for non-normally distributed data. Where appropriate, analysis was performed to assess associations between demographic characteristics, clinical features, anatomical classification, systemic associations, and other relevant variables. A two-sided p-value <0.05 was considered statistically significant. Statistical analysis was performed using appropriate statistical software.

Result

Table 1 presents the sex-wise distribution of the study population. Among the 160 participants, 104 (65.0%) were male, whereas 56 (35.0%) were female. Thus, males constituted the majority of the study population, with a male-to-female ratio of approximately 1.9:1.

Table 1: Sex-wise distribution of the study population (N = 160)

Sex	Number (n)	Percentage (%)
Male	104	65
Female	56	35
Total	**160**	**100**

Table 2 presents the laterality-wise distribution of uveitis among the 160 study participants. Unilateral uveitis was more common, accounting for 99 (61.9%) patients, whereas bilateral uveitis was observed in 61 (38.1%) patients. Overall, the findings indicate a predominance of unilateral involvement, although bilateral disease constituted a substantial proportion of the study population.

Table 2: Laterality-wise distribution of uveitis among study participants (N = 160)

Laterality	Number (n)	Percentage (%)
Unilateral	99	61.9
Bilateral	61	38.1
Total	**160**	**100**

Table 3 presents the distribution of patients according to the clinical course of uveitis among the 160 study participants. Acute uveitis was the most common clinical course, observed in 70 (43.8%) patients, followed by chronic uveitis in 56 (35.0%) patients and recurrent uveitis in 32 (20.0%) patients. Quiescent uveitis was the least frequent course, identified in only 2 (1.2%) patients. Overall, the findings indicate that acute and chronic forms constituted the majority of cases, while recurrent disease was also relatively common and quiescent disease was uncommon.

Table 3: Distribution of patients according to clinical course of uveitis (N = 160)		
Clinical course	**Number (n)**	**Percentage (%)**
Acute	70	43.8
Chronic	56	35
Recurrent	32	20
Quiescent	2	1.2
Total	**160**	**100**

Table 4 presents the anatomical classification and corresponding etiological profile of uveitis among the 160 study participants. Among the 104 (65.0%) cases of anterior uveitis, idiopathic disease was the most common etiology, accounting for 65 (40.6%) cases, followed by tuberculosis in 12 (7.5%) and HLA-B27-associated uveitis in 10 (6.3%); leprosy, HSV-associated, and rheumatoid arthritis-associated uveitis each accounted for 2 (1.3%) cases, while 11 (6.9%) were classified as other/undetermined. Among 19 (11.9%) cases of intermediate uveitis, 14 (8.8%) were idiopathic, 2 (1.3%) were associated with sarcoidosis, 2 (1.3%) with ulcerative colitis, and 1 (0.6%) was other/undetermined. Of the 29 (18.1%) cases of posterior uveitis, tuberculosis and toxoplasmosis each accounted for 7 (4.4%) cases, followed by APMPPE and idiopathic uveitis with 5 (3.1%) cases each, while acute retinal necrosis and CMV retinitis each occurred in 2 (1.3%) cases and 1 (0.6%) was other/undetermined. Among the 8 (5.0%) cases of panuveitis, idiopathic uveitis and VKH disease each accounted for 3 (1.9%) cases, while Behçet's disease was identified in 2 (1.3%) cases. Overall, idiopathic disease predominated particularly among anterior and intermediate uveitis, whereas tuberculosis and toxoplasmosis were notable identifiable causes of posterior uveitis.

Table 4: Anatomical classification and etiological profile of uveitis (N = 160)			
Anatomical classification	**Etiology**	**Number (n)**	**Percentage (%)**
Anterior uveitis	Idiopathic	65	40.6
	Tuberculosis	12	7.5
	HLA-B27 associated	10	6.3
	Leprosy	2	1.3
	HSV-associated	2	1.3
	Rheumatoid arthritis associated	2	1.3
	Other/undetermined	11	6.9
	Total anterior uveitis	**104**	**65**
Intermediate uveitis	Idiopathic	14	8.8
	Sarcoidosis	2	1.3
	Ulcerative colitis	2	1.3
	Other/undetermined	1	0.6
	Total intermediate uveitis	**19**	**11.9**
Posterior uveitis	Tuberculosis	7	4.4
	Toxoplasmosis	7	4.4
	APMPPE	5	3.1
	Acute retinal necrosis	2	1.3
	Idiopathic	5	3.1
	CMV retinitis	2	1.3
	Other/undetermined	1	0.6
	Total posterior uveitis	**29**	**18.1**
Panuveitis	Idiopathic	3	1.9
	VKH disease	3	1.9
	Behçet's disease	2	1.3
	Total panuveitis	**8**	**5**
Overall		**160**	**100**

Table 5 presents the anatomical distribution of uveitis among the 160 study participants. Anterior uveitis was the most common anatomical category, accounting for 104 (65.0%) cases, followed by posterior uveitis in 29 (18.1%) cases and intermediate uveitis in 19 (11.9%) cases. Panuveitis was the least frequent category, observed in 8 (5.0%) patients. Overall, the findings demonstrate a clear predominance of anterior uveitis, while intermediate, posterior, and panuveitis constituted smaller proportions of the study population.

Table 5: Overall anatomical distribution of uveitis (N = 160)		
Anatomical classification	**Number (n)**	**Percentage (%)**
Anterior uveitis	104	65
Intermediate uveitis	19	11.9
Posterior uveitis	29	18.1
Panuveitis	8	5
Total	**160**	**100**

Table 6 presents the overall etiological distribution of uveitis among the 160 study participants. Idiopathic uveitis was the most common etiological category, accounting for 87 (54.4%) cases, followed by tuberculosis-associated uveitis in 19 (11.9%) cases and HLA-B27-associated uveitis in 10 (6.3%) cases. Toxoplasmosis was identified in 7 (4.4%) patients, while APMPPE accounted for 5 (3.1%) cases and VKH disease for 3 (1.9%) cases. Leprosy, HSV-associated uveitis, rheumatoid arthritis-associated uveitis, sarcoidosis, ulcerative colitis, acute retinal necrosis, CMV retinitis, and Behçet's disease were each identified in 2 (1.3%) patients. A further 13 (8.1%) cases were categorized as other/undetermined etiologies. Overall, the findings demonstrate that idiopathic uveitis constituted more than half of all cases, while tuberculosis and HLA-B27-associated uveitis were the most frequent identifiable specific etiologies.

Table 6: Overall etiological distribution of uveitis among study participants (N = 160)		
Etiological category	**Number (n)**	**Percentage (%)**
Idiopathic	87	54.4
Tuberculosis	19	11.9
HLA-B27 associated uveitis	10	6.3
Toxoplasmosis	7	4.4
APMPPE	5	3.1
VKH disease	3	1.9
Leprosy	2	1.3
HSV-associated	2	1.3
Rheumatoid arthritis associated	2	1.3
Sarcoidosis	2	1.3
Ulcerative colitis	2	1.3
Acute retinal necrosis	2	1.3
CMV retinitis	2	1.3
Behçet's disease	2	1.3
Other/undetermined	13	8.1
Total	**160**	**100**

Discussion

In the present study 160 patients were investigated, of which 65% (104 patients) were males and 35% (56 patients) were females. This male predominance is generally in line with that observed by Das D et al., (2015) [5] in Northeast India and Biswas et al., (2018) [9] in South India. Males were 56% and females were 44% of the cohort in 2013 Biswas et al., (2018) [9]. Similarly, Dogra et al., (2017) [10] recorded a male predominance with males accounting for 56.64% cases of 1912 patients. Therefore, the preponderance of male populations in the present study is in line with many Indian tertiary care studies, but the ratio of male predominance was higher in the present series. These discrepancies could be due to discrepancies in referral patterns, study populations and regional demographic characteristics".

Of the patients in the present study, unilateral disease was present in 61.9% and bilateral in 38.1%. A similar finding has been reported by Sudha & Kumaraswamy, (2015) [11] who found 89.66% of patients had uniocular involvement while 10.34% had bilateral disease, however, the number of bilateral involvements was much higher in the present study. However, Biswas et al., (2018) [9] reported bilateral involvement (69.6%) and unilateral involvement (30.4%) which is a significant difference compared to the present findings. The differences may be due to differences in the group sizes referred and the anatomic makeup of the cases. The present study also showed that the most common clinical course was acute uveitis (43.8%) followed by chronic (35.0%) and recurrent (20.0%) and quiescent (1.2%). The distribution of disease course was generally similar with that reported in the Indian tertiary-care studies by Palsule et al., (2017) [12] and Sudha & Kumaraswamy, (2015) [11] but, due to differences in classification and reporting, a direct comparison is difficult.

Anatomically, anterior uveitis (65.0%) was the most common type in the present study, followed by posterior uveitis (18.1%), intermediate uveitis (11.9%) and panuveitis (5.0%). This preponderance of anterior uveitis is in line with few studies in India. In a study of 198 patients, Pal Sule et al., (2017) [12] found anterior uveitis in 41.4%, panuveitis in 21.2%, posterior uveitis in 20.7% and intermediate uveitis in 16.7% of patients. Similarly, anterior uveitis was the most common anatomic classification (43.04%), followed by posterior uveitis (24.58%), panuveitis (16.21%) and intermediate uveitis (10.66%) according to Dogra et al., (2017) [10]. The increased rates of anterior uveitis in the present study compared with these cohorts may be related to referral patterns and the spectrum of disease seen in the study centre. This type of anatomic distribution was also found in Das D et al., (2015) [5] and Singh et al. (2004) [13], in several Indian locations, too. By contrast, Biswas et al., (2018) [9] reported anterior uveitis in only 35.22% of their sample population, and intermediate uveitis in 30.11%, posterior uveitis in 25% and panuveitis in 9.65% of the population, which shows significant geographical variation.

The etiology spectrum of the current study also highlights the heterogeneity of uveitis. In the specific cause group, idiopathic (54.4%), tuberculosis (11.9%), and HLA-B27 (6.3%) were the most common causes of uveitis, and toxoplasmosis was the fourth most common cause (4.4%). The percentage of idiopathic was relatively high, which is similar to the study of Palsule et al., (2017) [12] where 98 patients out of 198 (49.5%) were diagnosed with idiopathic uveitis. However, the etiology was determined in 50.5% of patients; presumed ocular tuberculosis was found in 29 of 55 patients (52.73%) and HLA-B27 was found in 24 of 45 patients (53.33%). HLA-B27 associated uveitis occurred in 10 cases (6.3%) and tuberculosis was the most prominent identifiable etiology in 19 cases (11.9%) and the overall etiological distribution was different from what has been reported in Western India in the present study.

The importance of tuberculosis in the present study is also backed by the findings of other centres of India. Tuberculosis has been found in 22.9% of the cases and was the most common infectious etiology reported by Dogra et al., (2017) [10] and HLA-B27 associated uveitis was 9.46% in noninfectious uveitis. In the South Indian study by Biswas et al., (2018) [9] tuberculosis was the most common cause of posterior uveitis with 35.2% and tuberculosis accounted for 22.5% of the total number of uveitis cases in the 2013 cohort.12 In their study, a specific diagnosis was obtained in 66.2% of patients. The figures are higher than the 11.9% TBU recorded in the present study, indicating regional variation in the prevalence of TBU. Similarly, tuberculosis was found to be an important etiology of posterior uveitis in Das D et al., (2015) [5] where 21 (37.5%) out of 56 posterior uveitis cases were found to be due to tuberculosis. Of their panuveitis group, they also found tuberculosis in 19 of 64 (29.68%) and VKH disease in 10 (15.62%), and sympathetic ophthalmia in 14 (21.87%). By contrast, the current study showed eight panuveitis cases (5.0%) including 3 cases (1.9%) of idiopathic panuveitis and 3 cases (1.9%) of VKH disease and 2 cases (1.3%) of BD. These differences are additional evidence of the geographical heterogeneity of panuveitis etiologies.

In the present study, tuberculosis and toxoplasmosis both had seven cases (4.4%), APMPPE and idiopathic posterior uveitis had five cases each (3.1%) among the cases of posterior uveitis. Acute retinal necrosis and CMV retinitis occurred in two instances each (1.3%). The distribution is somewhat different from what Palsule et al., (2017) [12] found in their study of posterior uveitis, presumed to be due to tuberculosis and toxoplasmosis respectively, each of which they found in 8 out of 41 cases (19.5%). Tuberculosis was the most common posterior cause as noted by Biswas et al., (2018) [9] (35.2%) while viral retinitis rose to 6.81% in their later group. The lower incidence of posterior disease was associated with TB in the present series may be due to differences in epidemiology, case selection and diagnostic criteria.

The current results support the well-recognised fact that anterior uveitis is predominant in most tertiary-care-based studies in India, and tuberculosis is a significant identifiable cause especially in posterior uveitis. However, the significant number of idiopathic cases, and the differential distribution of specific etiologies in Indian studies suggest that systematic clinical evaluation and proper investigations should also be carried out to rule out underlying infectious, autoimmune and inflammatory conditions.

Conclusion

The findings in this study show that uveitis has a wide spectrum of clinical and etiological presentation amongst patients in a tertiary eye care centre. The most common anatomical pattern was anterior uveitis, with intermediate, posterior and panuveitis also being important but less common patterns. Clinical courses ranged from acute to chronic and recurrent disease and unilateral disease was more common than bilateral disease. The etiological profile included a large idiopathic component, as well as tuberculosis, HLA-B27-associated disease, toxoplasmosis and other infectious, inflammatory and systemic diseases. The results underscore the heterogeneity of uveitis and the need for careful anatomical classification and systematic etiological evaluation, to identify potentially treatable underlying causes. In the patient with uveitis, early recognition, proper investigation and individual management are

crucial in minimizing ocular morbidity and maintaining visual function.

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