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Etiological distribution of anterior uveitis in a tertiary care centre at Tamil Nadu

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Abstract
Aim: This study aims to establish the etiological distribution of Anterior Uveitis at a tertiary care centre at Tamilnadu.
Study: A Prospective Descriptive type of observational study.
Material and Methods:72 patients presented to the Department of Ophthalmology at Rajah Muthiah Medical College and Hospital, who had been diagnosed with a clinical diagnosis of Anterior Uveitis were examined clinically with a slit lamp and binocular Indirect ophthalmoscopy Patients were investigated appropriately with a follow up period of 6 months.
Results: Out of 72 patients diagnosed with Anterior Uveitis, 43.1% of Study Population were diagnosed as having idiopathic etiological factor. 30.6% of the population was affected by Traumatic Iridocyclitis. Followed by Post operative uveitis accounting 8.3% study population. Various other etiology including COVID vaccination, Scrub typhus and Metastasis from breast cancer had also been described in this study. Though HLA-B27 association was common in other studies, in this study 2.8% of the study population were affected.
Conclusion: In case of Anterior uveitis, it is vital to evaluate the patient systematically as most often patient have an etiological factor has been associated with either an autoimmune condition or an infectious etiology. Recurrences can be prevented on detecting and treating the systemic association.

Keywords: Anterior uveitis, scrub typhus, COVID vaccination, breast carcinoma, tuberculosis

Introduction
Inflammation of uveal tract is known as Uveitis. When the inflammation involves Iris and Ciliary body, it is termed as Anterior uveitis based on the anatomical Classification [1]. Typically Acute Anterior uveitis presents with sudden onset ocular Pain, Photophobia which can be associated with defective vision [2]. Clinical signs include Circumcorneal Congestion, Fine dusting of Keratic precipitates in the corneal endothelium and Cellular Activity in the Anterior Chamber [3]. Anterior uveitis can also present in chronic form with minimal symptoms and signs. Anterior uveitis has also been known to be associated with the systemic disorders as shown in Table 1.

Table 1: List of diseases associated with Anterior Uveitis

Infectious	1. Varicella zoster 2. Tuberculosis 3. Syphilis 4. Lyme Disease 5. Miscellaneous viral infections
Non-infectious	1. HLA-B27 2. Juvenile Idiopathic Arthritis 3. Sarcoidosis 4. Behcet's disease 5. Tubulointerstitial Nephritis and uveitis Syndrome 6. Systemic Lupus Erythematosis 7. Multiple Sclerosis 8. Drug Induced Uveitis
Masquerade	1. Neoplastic-Anterior Segment Melanoma, Lymphoma, 2. Non-Neoplastic –Juvenile Xanthogranuloma

Anterior Uveitis is the most common form of uveitis [4] presenting to the Outpatient Department as Acute Red Eye with Photophobia (sensitivity to light) [5]. Anterior uveitis had also been associated with Systemic Illness [6]. Sometimes Uveitis can be presenting symptom of the systemic illness. Complication of uveitis includes Calcific Band Keratopathy, Uveitic Macular Edema, Complicated Cataract and Uveitic Glaucoma. Therefore, this study had been designed to evaluate the patients presenting with Anterior uveitis.

Materials and Methods

A prospective study was conducted in the Department of Ophthalmology, Rajah Muthiah Medical College and Hospital, Chidambaram for a period of 12 months from October 2019 to September 2020.Seventy two cases of anterior uveitis were studied during the period. Patients were informed about the study and informed written consent was obtained. A separate Proforma for each patient, containing all the relevant particulars were maintained and reviewed for the analysis of the study.

Following details were observed from the clinical course and recorded in case records.

- Patient's name, age, sex, medical record number (Patient Id).
- Detailed History was obtained from the patient.
- Thorough and Detailed Slit Lamp biomicroscopy examination was done for every patient included in the study.
- Binocular indirect Ophthalmoscopy with +20D lens for all the patients.
- Visual acuity was recorded with Snellen's chart for all the patients on every visit.
- Thorough Physical examination is done to rule out the systemic conditions as guided by Harthan *et al*. study [7].
- Investigations were deffered in case of first episode of uveitis [8].
- Investigations [9] were done in patients, suspected of systemic association.
- When investigated parameters were found abnormal, opinions were obtained from Concerned Specialist.
- Patients were followed up regularly till the 6 months with monthly interval between visits.
- Patients were treated with topical steroids and cycloplegic agents [10].
- Wherever required systemic steroids were given.
- Topical NSAID (Nepafenac) was also used in patients with traumatic iridocyclitis.

All case included in this study were observed / treated by the presenter.

Inclusion criteria

- All cases of Anterior uveitis, presenting to the Outpatient Department within the age range from 10 years-80 years.
- Patients with history of trauma were included in the study

Exclusion Criteria

- Patients with age below 10 years and above 80 years were excluded in the study.
- Patient with mutism, who are mentally challenged and who cannot answer questionnaire were excluded.
- Patient not willing to participate in the study were excluded.

Data Collection

Individual case details were collected in the format of proforma attached in the annexure. Data was collected and were stored in external storage device. Data processing was done with SPSS statistical software.

Result

A total of 72 cases who were presented with symptoms of anterior uveitis were included in this study. The frequency of different etiology has been depicted in Chart 1.

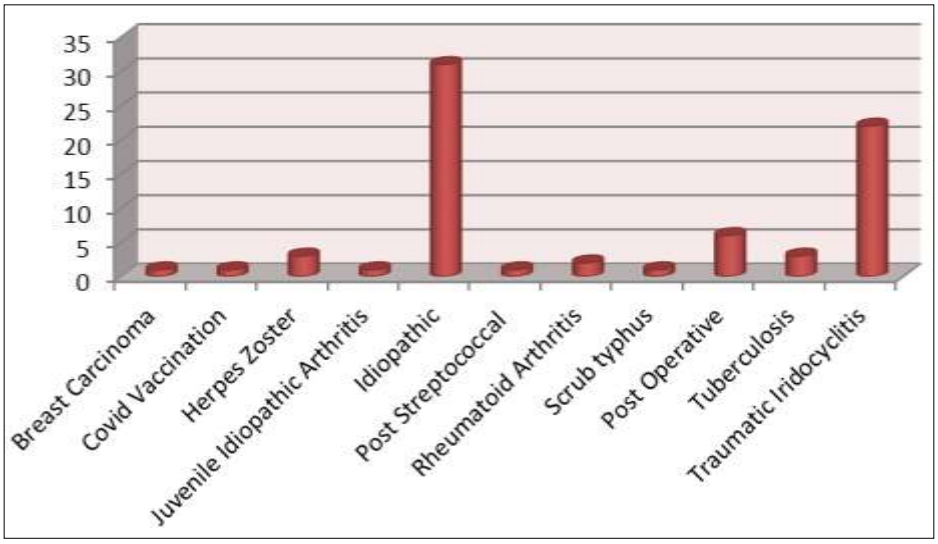

Chart 1: Etiological distribution among the study Population

In this study, of the 72 patients, specific diagnosis was made in about 41 patients. Out of 41 patients, 22 patients had developed uveitis due to Trauma. Hence, Investigations were not done in those patients. They were etiologically categorised as Traumatic. All other 50 patients with anterior uveitis was subjected to systemic investigation depending on the history and systemic examination.

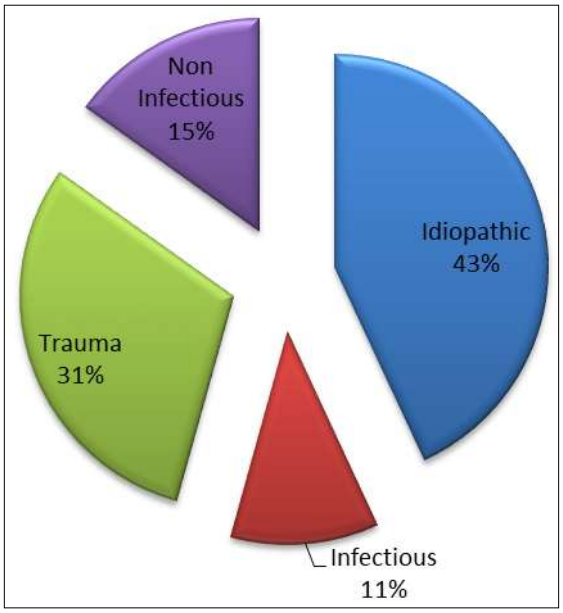

Chart 2: Categorical Distribution of Etiology among study Population

Of these 50 patients, inspite of thorough systemic examination and Investigation no specific diagnosis could be made in 31 patients. Hence, they were categorised as Idiopathic. Among the study population, 8 patients had infectious etiology and the rest of 11 patients had different etiology varying from Rheumatoid Arthritis, Metastasis from breast cancer and COVID vaccination.

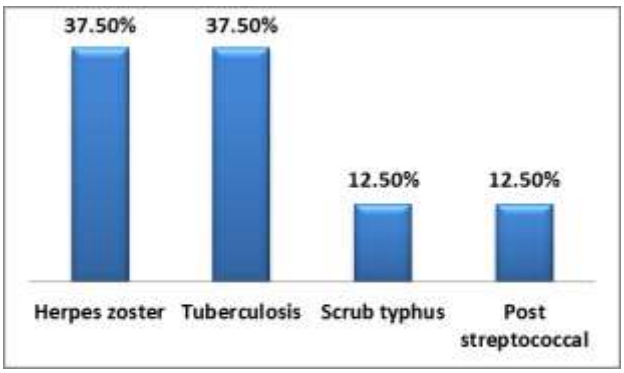

Chart 3: Distribution of Infectious Etiology among the study Population

Of the 8 patients diagnosed with infectious etiology, 3 patients had Herpes zoster Ophthalmicus, 3 other patients were infected with tuberculosis and Post streptococcal and scrub typhus infection was contributed in 1 patient each.

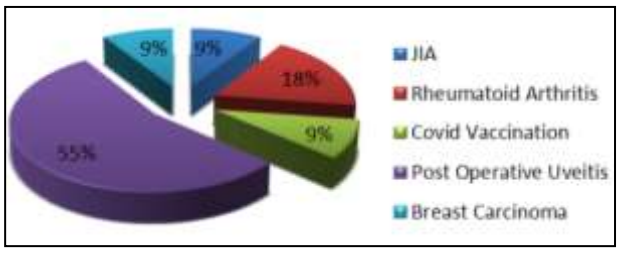

Chart 4: Categorical Distribution among the Non-infectious etiology

Discussion

Of the 72 patients, 43.1% of study population has been diagnosed with Idiopathic etiological factor, accounting that being the most common which was found similar to other studies [11, 12, 13]. Traumatic etiology being the 2nd most common cause for the anterior uveitis affecting 30.9% of study population, as compared to 0.6% in Yang *et al*. study (2005) [12]. Post-operative uveitis was present in about 8, 3% study population. In this study, infectious etiological factor was present among 11.2% Study population in comparison to 28.8% among Rathinam *et al*. study population (2007) [14]. Among the infectious etiology, 37.5% of study population had been infected with tuberculosis and Herpes. Overall, Herpes zoster infection has attributed to only 4.2% of study population showing decreasing trend as compared with Bandyopadhyay *et al*, study [15].

Of the 72 patient only 2.8% of study population had Rheumatoid Arthritis, which is q similar to Gao *et al*, (2017) [16] study which had 1.9% affected. In this study, 1.4% of study population had been diagnosed with Juvenile Idiopathic Arthritis, when compared with the study conducted by Khairallah *et al*, (2007) [17] study where 0.6% population had the diagnosis.

One patient was presented with Acute Anterior uveitis, 2 days following COVID vaccination was similar to a case series present by ElSheikh *et al*, 2021 [18].

Metastasis from breast carcinoma presented as Acute uveitis, which needed to be carefully evaluated and treated in concurrence of other specialty, which was stated in Rathinam *et al*, study (2007) [14].

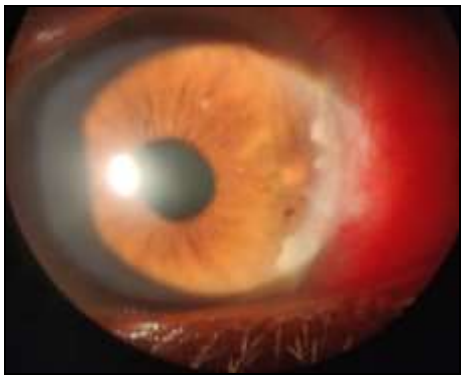

Fig 1: Slit lamp image showing the metastatic deposits in the Anterior Chamber

Limitation of Study

This study was conducted during COVID Pandemic 2020, hence there can be differential distribution of etiology due to restriction of movements among people and fear among the people visiting the hospital.

Conclusion

This study demonstrated that specific diagnosis can been in more than 50% population presenting with anterior uveitis. With careful systemic evaluation, Patients can be benefitted by getting timely management of their systemic illness. This study had also showed that there is threefold increase in the incidence of traumatic iridocyclitis in comparison to last decade. Also, this study had shown that uveitis due to infectious etiology had been declined over the last decade. Though there is decline in uveitis due to infectious etiology still Tuberculosis and Herpes infection remains prevalent among the study population.

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