

## The Patterns of Uveitis Presenting at a Tertiary Care Facility in Imphal, Manipur.

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**Abstract :** The term uveitis, derived from uva, the Latin word for grape, encompasses a broad range of disease processes involving the uveal tract and its associated ocular structures. This study was done to find the patterns of uveitis among the patients attending a tertiary care facility in Imphal, Manipur during the period from September 2012 to August 2014. Patients were grouped according to the anatomical classification of uveitis based on the International Uveitis study group classification system. Ophthalmological work-up were done after obtaining prior informed consent. A tailored laboratory approach as described by Nojik was adopted. Three hundred and eighty seven new cases of uveitis amounting to 0.8% of all new ophthalmic patients were examined in this period. Anterior uveitis was the most common anatomic type of uveitis encountered (232 cases, 60%), followed by posterior uveitis(119 cases,30.7%), intermediate uveitis(19 cases, 5%), and panuveitis (17 cases, 4.3%). The tailored laboratory investigations enabled specific diagnosis in 40.8% of the cases. Specific diagnosis was possible more in posterior uveitis than in other anatomic types of uveitis.

**Keywords:** Anterior uveitis, Intermediate uveitis, Panuveitis, Posterior uveitis.

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### I. Introduction

The term uveitis, derived from uva, the Latin word for grape, encompasses a broad range of disease processes involving the uveal tract and its associated ocular structures. The uveal tract is traditionally divided into three major anatomic structures: the iris, ciliary body, and choroid. However, the study of uveitis also involves evaluation of surrounding ocular tissues in addition to a thorough understanding of systemic conditions. While some forms of uveitis may be self limiting, other conditions may be relentless and progressive with potentially vision-threatening complications if not treated. [1]

The first international workshop on the Standardization of Uveitis Nomenclature was held in 2004 to standardize some aspects of uveitis, including classification criteria, inflammation grading schema, and evaluation of outcomes. From the workshop, there was a consensus that anatomic classification of uveitis should be used. Anatomically uveitis can be classified as: anterior uveitis, intermediate uveitis, posterior uveitis and panuveitis.[2] An earlier Indian study reported a remarkably high prevalence of tuberculosis(30%), toxoplasmosis(7.2%), syphilis(5.4%) and leprosy(1.2%) and in a latter one from south India, infectious uveitis accounted for only 11.9% of cases and the predominant infection reported was toxoplasmosis(8%) followed by tuberculosis(0.6%) and herpetic anterior uveitis(0.5%). However, a more recent study from North India shows tuberculosis and toxoplasmosis to be the commonest forms of infective uveitis. In the present scenario, infections attributed to 30.7% of uveitis, the most common infectious forms were leptospiral uveitis (9.7%) followed by tuberculosis (5.6%), herpetic anterior uveitis (4.9%), pediatric parasitic-induced anterior uveitis(2.5%) and toxoplasmosis(2.5%).[3] This present study was conducted to provide comprehensive clinical information about the epidemiology, type of uveitis, its association with other ocular pathology and systemic diseases.

### II. Materials And Methods

This was a cross-sectional study done in the Department of Ophthalmology at a tertiary care facility in Imphal, Manipur from September 2012 to August 2014 including all patients with uveitis attending the Department of Ophthalmology. Patients with postoperative uveitis and traumatic uveitis were excluded from our study. Patients were grouped according to the anatomical classification of uveitis based on the International Uveitis study group classification system. Patients were categorized into anterior, intermediate, posterior and panuveitis based on the clinical history and ophthalmological work-up. Smith and Nozik recommended strategy called "name meshing" was utilized to form a short differential diagnosis in each case. The naming process involved extracting relevant clinical and historical information and creating a case profile. This information was meshed with clinical characteristics of known ocular inflammatory diseases. Using this information, a list of differential diagnoses was generated and then relevant laboratory tests were ordered. [4]

A thorough history and clinical examination specific for uveitis was done. Laboratory investigations done included complete blood counts, erythrocyte sedimentation rate, routine urine analysis, Mantoux skin test, VDRL, Treponema pallidum haem-agglutination test (TPHA), ELISA for Toxoplasma, Toxocara and HIV. Radiological investigations included chest X-rays, X-rays of sacroiliac joints and knee joints. HLA typing and serum ACE levels were done when needed. The outcome measures were visual acuity by Snellens chart, slit lamp examination and biomicroscopy, fundus examination by direct and indirect ophthalmoscope, intra ocular pressure measurement by Keelers pneumotonometer. Ancillary tests such as ultrasonography and FFA were carried out when needed. Patients were followed up after 15days from the first visit.

### **III. Results And Observation**

Three hundred and eighty seven new cases of uveitis were seen during the period from September 2012 to August 2014 amounting to 0.8% of all new ophthalmic patients examined in this period. Anterior uveitis was the most common anatomic type of uveitis encountered (232 cases, 60%), followed by posterior uveitis (119 cases, 30.7%), intermediate uveitis (19 cases, 5%), and panuveitis (17 cases, 4.3% (Fig.1).

On the basis of overall clinical presentation, acute, unilateral non-granulomatous forms occurred more frequently. Uveitis was seen most commonly in the 41 to 50 years old age group and was uncommon in the extremes of age (Fig. 2).

The sex predilection was almost equal; males (201 cases, 52%) were slightly more predominantly affected in the present study in comparison to females (186 cases, 48%). The tailored laboratory investigations enabled specific diagnosis in 158 cases (40.8%). Specific diagnosis was possible more in posterior uveitis than in other anatomic types of uveitis. While a large number of anterior uveitis was idiopathic, specific diagnosis was arrived at in 71 cases (30.6%) among which collagen disorders were found to be the most common association of anterior uveitis (53.5%) (Fig. 3).

However, HLA B27 positivity was seen in only 20 patients (12.2%) of idiopathic anterior uveitis. Underlying collagen diseases associated with anterior uveitis that were identified were systemic lupus erythematosus in 8 cases, juvenile rheumatoid arthritis in 4 cases, ankylosing spondylitis in 9 cases and nonspecific collagen disorders in 17 cases. Post herpetic anterior uveitis accounted for 19 cases (8.18%), anterior uveitis associated with AIDS 14 (6.03%) and 1 case of Possner-Schlossman Syndrome. In intermediate uveitis specific diagnosis could be reached in only 2 patients (10.5%) and in both the cases it was due to sarcoidosis. In posterior uveitis, specific diagnosis was made in 72 cases (54.5%). The most commonly diagnosed cause of posterior uveitis was toxoplasmosis 42 cases, (58%) followed by tuberculosis 16 (23%) and viral retinochoroiditis 13(17.1%) and one case of parasitic post uveitis. Others being idiopathic chorioiditis and idiopathic vasculitis (Fig. 4).

In pan-uveitis, specific diagnosis was made in 7 cases (70.5%). The most common causes were infective in origin; these were tuberculosis 4, toxoplasmosis 2 and a single case due to leprosy (Fig 5). Regarding laterality of the eyes involved 71% were unilateral whilst 29% were bilateral.

### **IV. Discussions**

In this study, 387 new cases of uveitis accounting for 0.8% of all the patients with ocular disease attending the eye OPD during the study period were seen. Gender patterns of uveitis showed that there was a slight male preponderance; males (201 cases, 52%) in comparison to females (186 cases, 48%). This pattern of a slight male preponderance was also observed by Rathinam [5], Das [6], and Singh[7], who did similar studies in south, east and north India respectively. In our study the most common age of presentation was through the 3<sup>rd</sup> and 4<sup>th</sup> decade. It has been reported that paediatric uveitis accounts for 6% of all cases of uveitis. [8] Anterior uveitis was the most common anatomic type of uveitis encountered 232 (60%), followed by posterior uveitis (119 cases, 30.7%), intermediate uveitis (19 cases, 5%), and panuveitis (17cases, 4.3%).

Studies conducted in India by Rathinam, Das and Singh have all found that anterior uveitis was the commonest uveitis encountered. [5-7]

While a large number of all anterior uveitis was found to be idiopathic (160, 68%) specific diagnosis could only be reached in 71 cases (30.6%) out of these collagen disorder was found to be the most common association of anterior uveitis 47 (20.25%) cases .This result is similar to the study conducted by Biswas [9] who found that the total cases of anterior uveitis associated with collagen disorder were 29.4%. In our study we found 20 cases (9%) of HLA B-27 associated idiopathic anterior uveitis. Anterior uveitis with AIDS was a common cause and it may be explained by the fact that Manipur is the state with the highest estimated adult HIV prevalence in India (4.3%). [10]

In our study intermediate uveitis was comparatively rare (19 cases, 10%) and specific diagnosis could only be reached in 2 (10.5%) cases where in both instances sarcoidosis was diagnosed.

Although idiopathic Posterior uveitis is reportedly the commonest cause, in India, studies by Rathinam [5] (4.5%) and Das D [6] (8.5%) have showed that the most common identifiable cause of posterior uveitis is

toxoplasmosis. In our study, we encountered a total of 119 cases of posterior uveitis, out of which specific diagnosis could be made in 72 patients. 48(40.3%) patients were diagnosed to have idiopathic posterior uveitis and 42(35.29%) were diagnosed as posterior uveitis due to toxoplasmosis. Viral causes of posterior uveitis is showing a growing trend and this may be attributed to the fact that Manipur has the highest prevalence rate of HIV positive patients in the nation.

The least common type of uveitis in our study was panuveitis, 17 patients (4.3%). Non infective and infective etiologies had an almost equal incidence but specific diagnosis could be made in 7 cases only, where Tuberculosis was the most common cause followed by toxoplasmosis.

## V. Conclusion

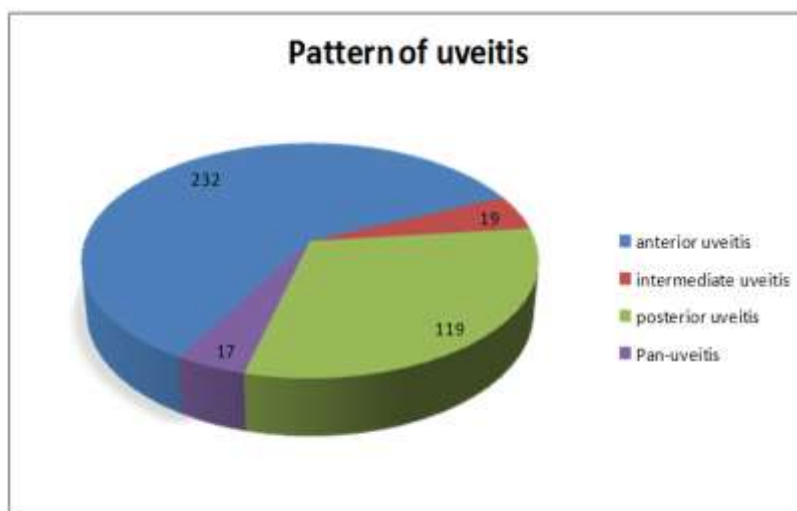
In our study, anterior uveitis was found to be the commonest type of uveitis out of which the most common identifiable cause was collagen disorders. This was followed by posterior uveitis, the most common identifiable cause being Toxoplasmosis.

However in a study such as ours, limitations are bound to exist. The study institute is a tertiary referral centre, but most patients in Manipur reside in remote areas where accessibility to health resources are scarce which are further compounded by poor economic status, environmental and political factors leading to under-diagnosis and late referrals. Our results convey, to a large extent, the general uveitis pattern present mostly in Imphal and surrounding catchment areas.

Causes of uveitis vary considerably by geographic location around the world and studies such as ours may make us aware of region specific uveitic patterns which will enable us to derive a region-specific list of differential diagnoses and in understanding the predictive values of diagnostic tests.

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**Fig. 1.** Pie chart showing the anatomical types uveitis encountered.

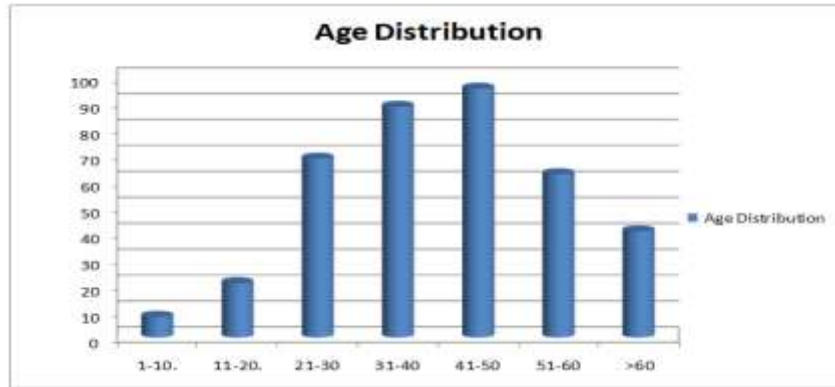


Fig. 2. Age distribution of anatomical types of uveitis

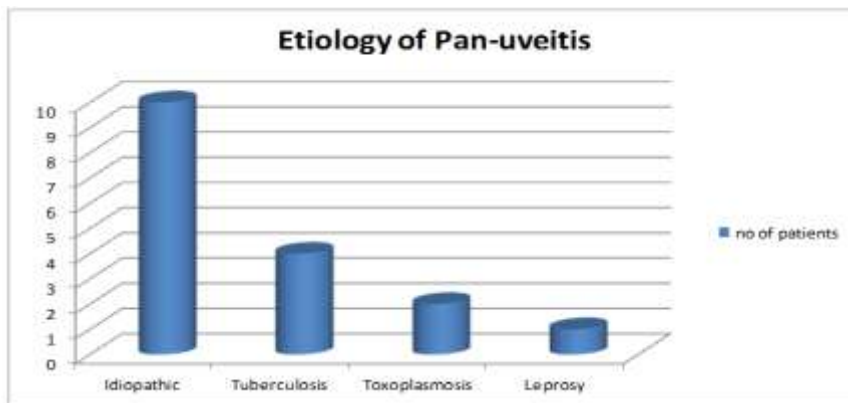


Fig. 3. Etiology of anterior uveitis

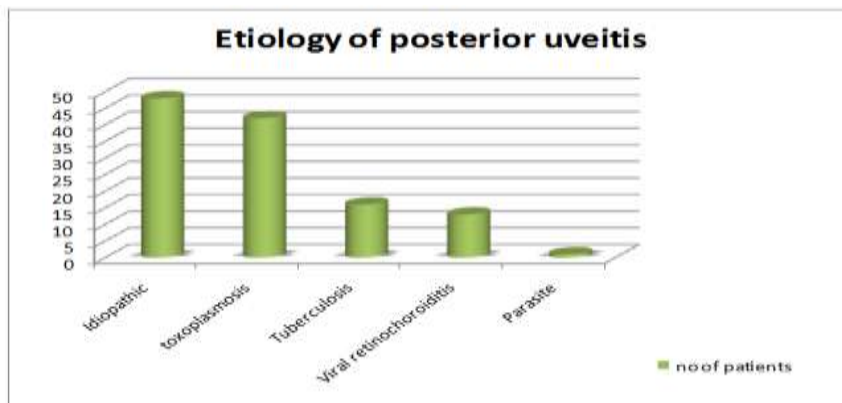


Fig. 4. Etiology of posterior uveitis

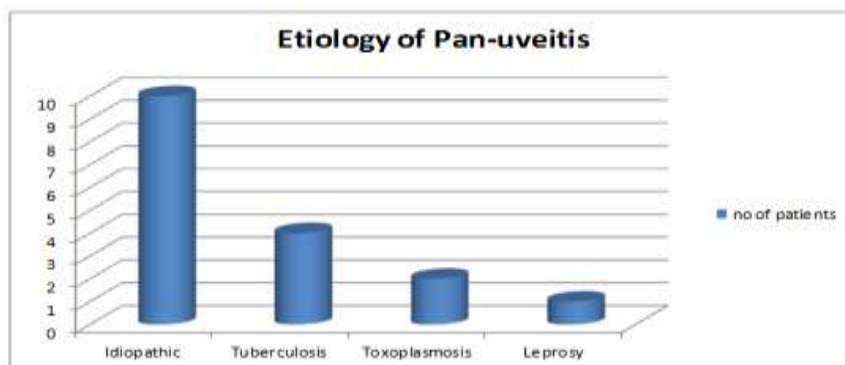
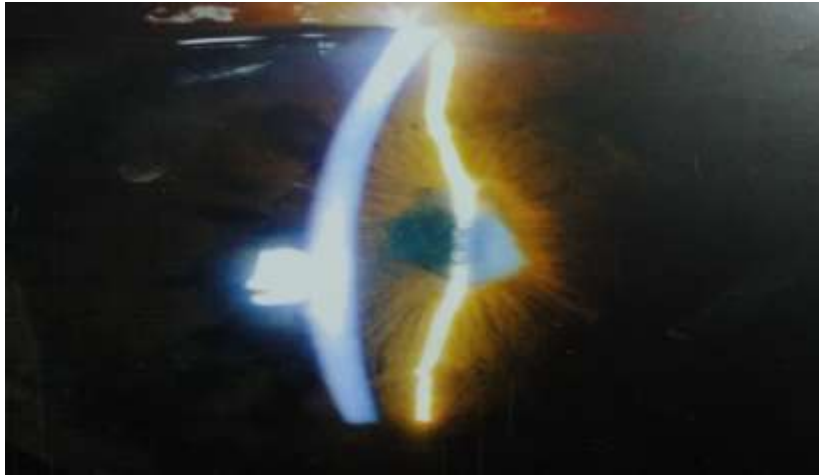
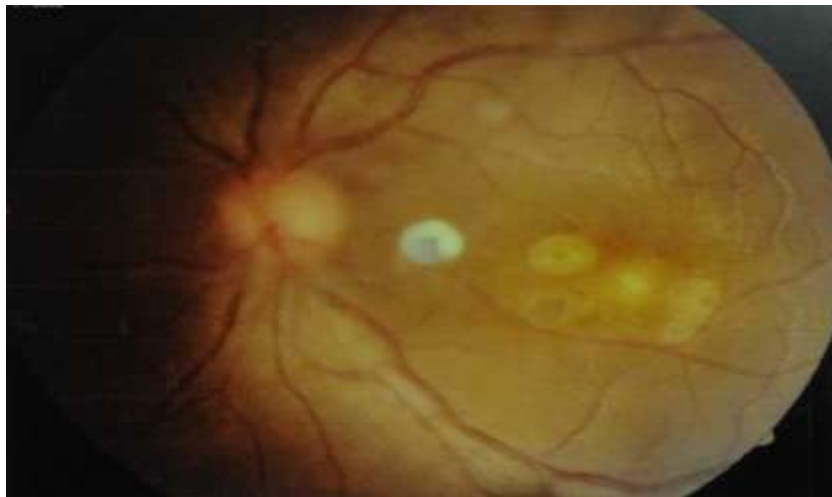


Fig. 5. Etiology of pan-uveitis



**Fig. 6.** Anterior uveitis showing posterior synechiae with iris bombe



**Fig. 7.** Posterior uveitis showing multifocal chorioretinitis