The changing patterns of uveitis in a tertiary institute of Northeast India

Dipankar Das\textsuperscript{1,2}, Harsha Bhattacharjee\textsuperscript{2}, Kalyan Das\textsuperscript{1}, Prerana S Tahiliani\textsuperscript{2}, Pankaj Bhattacharyya\textsuperscript{2}, Gayatri Bharali\textsuperscript{2}, Manik Das\textsuperscript{1}, Apurba Deka\textsuperscript{2}, Rajashree Paul\textsuperscript{2}

Uveitis incorporates innumerable conditions, all of which are characterized by inflammation of the uveal tract. Study of etiological factors in uveitis in the population often give important disease-specific indications and changing pattern in subsequent studies are important to know further newer occurrences of various disease prevalence. Awareness of regional variation in disease configuration is essential to develop a region specific list of differential diagnoses and also for comparison with different sub-population of the country and the world. We report the changing pattern of uveitis in a tertiary institute in the Northeast India and found that tubercular uveitis had increased in hospital-based study.

**Key words:** Ankylosing spondylitis, sarcoidosis, toxoplasmosis, tuberculosis, uveitis

Changing pattern of any disease in a subset of the population is an important health indicator. Uveitis literature shows a number of studies of this vein, carried out by the same author or different authors. \cite{1-6} We present this retrospective study on the changing pattern of uveitis in a tertiary referral institute of the Northeast India, comparing the pattern with that seen in a similar study in 2005 and published by this author in the same journal in 2009. \cite{2}

**Materials and Methods**

Retrospective review of records was done from hospital database, which included all patients presented to uvea clinic at a tertiary ophthalmic care center between January and December 2012. The patients were classified according to current International Uveitis Study Group (IUSG) classification based on the localization of intraocular inflammation. \cite{1-3} Various defining descriptors based on clinical onset, duration and course were included based on IUSG study. \cite{10} Ocular findings were analyzed in each case by external examination, slit-lamp biomicroscopy, applanation tonometry, and indirect ophthalmoscopy with scleral depression after maximum pupillary dilatation. Ancillary and laboratory investigations were carried out in each case in a tailored approach.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

**Cite this article as:** Das D, Bhattacharjee H, Das K, Tahiliani PS, Bhattacharyya P, Bharali G, et al. The changing patterns of uveitis in a tertiary institute of Northeast India. Indian J Ophthalmol 2015;63:735-7.
Retinal vasculitis and endophthalmitis were excluded from the study like the previous study.

Results

Total cases seen in this study was 343; male (209):female (134). Maximum patients (69.6%) were in the age group of 20–29 years. In 2005, the total cases seen were 308. In this study, anterior uveitis was seen in \(n = 142\) followed by intermediate uveitis \(n = 81\), posterior uveitis \(n = 56\), and panuveitis \(n = 64\) [Table 1].

In anterior uveitis in 2012, human leukocyte antigen (HLA) B27 associated acute anterior uveitis were seen in 58 cases (40.84%), and idiopathic anterior uveitis was seen in 36 cases (25.35%). Fuchs' uveitis syndrome (FUS) was seen in 19 cases (13.38%), herpetic anterior uveitis was seen in 15 cases (10.56%). The comparative table in 2012 and 2005 is shown in Table 2.

In intermediate uveitis in 2012, idiopathic cases were found to be in 41 cases (50.61%), tuberculosis (TB) related etiology was identified in 17 cases (20.98%) and sarcoid was seen in 19 cases (23.24%). Comparative data of intermediate uveitis in the two studies is shown in Table 3.

In posterior uveitis in 2012, TB related posterior uveitis was seen in 21 cases (37.5%), toxoplasma retino‑choroiditis was seen in 8 cases (14.28%) and idiopathic choroiditis was found in 7 cases (12.50%). Other cases and comparative data of 2012 and 2005 are shown in Table 4.

In panuveitis cases in this study showed Vogt Koyanagi Harada's (VKH) disease in 10 cases (15.62%), sympathetic ophthalmia in 14 cases (21.87%), and TB related panuveitis in 19 cases (29.68%). Other cases and comparative figures are shown in Table 5. Comparison of TB related uveitis on anatomical classification (IUSG) is shown in Table 6.

Discussion

Uveitis is complex intraocular inflammatory disease result from several etiological entities. Changing patterns over time have been reported in studies from the same or different region of the country at different period of time.

When we compared the results of this study with 2005 data, we recognized an increase of HLA-B27 associated acute anterior uveitis in 2012 and a sharp decrease in the idiopathic anterior uveitis. This may be explained by improved diagnostic accuracy as well as HLA-B27 estimation in the referral laboratory in our cohort of patients. Most of the anterior uveitis following HLA-B27 was in 20–29 years group. Herpetic involvement showed increasing trend along with FUS in our patients when compared to the 2005 study. FUS was also seen mostly in young patients.

In intermediate uveitis, pars planitis, which is idiopathic, was seen around 50.61% in 2012, a drop from the 77.5% in the 2005 data. This may again be attributed to improved diagnostic accuracy through the newer modalities of investigations, helping in more conclusive inference on the etiology. TB and sarcoid related intermediate uveitis showed increasing trend in 2012.

In posterior uveitis, infectious uveitis such as TB and toxoplasmosis showed a remarkable trend. While TB cases increased, toxoplasmosis cases decreased in this study.

Table 1: Comparison of present study in 2012 with similar study in 2005

| Types of uveitis | 2012%, \(n=343\) | 2005%, \(n=308\) |
|------------------|-----------------|-----------------|
| Anterior         | 41.39 \((n=142)\) | 47.07 \((n=145)\) |
| Intermediate     | 23.61 \((n=81)\)  | 12.98 \((n=40)\)  |
| Posterior        | 16.32 \((n=56)\)  | 29.87 \((n=92)\)  |
| Pan uveitis      | 18.65 \((n=64)\)  | 10.06 \((n=31)\)  |

Table 2: Comparative data of various etiologies of anterior uveitis

| Etiology          | 2012%, \(n=142\) | 2005%, \(n=79\) |
|-------------------|-----------------|-----------------|
| Idiopathic        | 25.35 \(n=36\)  | 45.51 \(n=36\)  |
| HLA-B27 anterior uveitis | 40.84 \(n=58\)  | 23.44 \(n=18\)  |
| Traumatic         | 2.18 \(n=4\)    | 17.24 \(n=13\)  |
| IOL induced       | 3.52 \(n=5\)    | 6.89 \(n=5\)    |
| FUS               | 13.38 \(n=19\)  | 4.82 \(n=3\)    |
| Herpetic ant uveits | 10.56 \(n=15\)  | 0.68 \(n=1\)    |
| Leprosy           | 0 \(n=0\)       | 0.68 \(n=1\)    |
| Parasitic uveitis | 1.40 \(n=2\)    | 0.68 \(n=1\)    |
| TB uveitis        | 2 \(n=3\)       | 0.68 \(n=1\)    |

Table 3: Comparative data of intermediate uveitis in two studies

| Etiology          | 2012%, \(n=81\) | 2005%, \(n=40\) |
|-------------------|-----------------|-----------------|
| Idiopathic        | 50.61 \(n=41\)  | 77.5% \(n=31\)  |
| TB                | 20.98 \(n=17\)  | 10% \(n=4\)     |
| Sarcoid           | 23.24 \(n=19\)  | 12.5% \(n=5\)   |
| Miscellaneous     | 4.93 \(n=4\)    | -               |

Table 4: Comparative data of posterior uveitis in two studies

| Etiology          | 2012%, \(n=56\) | 2005%, \(n=92\) |
|-------------------|-----------------|-----------------|
| TB                | 37.5 \(n=21\)   | 5.43 \(n=4\)    |
| Toxoplasmosis     | 14.28 \(n=8\)   | 40.21 \(n=36\)  |
| Idiopathic choroiditis | 12.50 \(n=7\)   | 19.56 \(n=18\)  |
| Serpiginous choroiditis | 14.28 \(n=8\)   | 15.21 \(n=14\)  |
| APMPPE            | 1.78 \(n=1\)    | 5.43 \(n=6\)    |
| Multifocal choroiditis | 3.57 \(n=2\)   | 4.34 \(n=5\)    |
| Toxocara          | 7.14 \(n=4\)    | 4.34 \(n=5\)    |
| CMV retinitis     | 3.57 \(n=2\)    | 2.17 \(n=2\)    |
| ARN               | 3.57 \(n=2\)    | 1.08 \(n=1\)    |
| Syphilis          | 1.78 \(n=1\)    | 1.08 \(n=1\)    |

Table 5: Comparative data of posterior uveitis in two studies

| Etiology          | 2012%, \(n=56\) | 2005%, \(n=92\) |
|-------------------|-----------------|-----------------|
| TB                | 37.5 \(n=21\)   | 5.43 \(n=4\)    |
| Toxoplasmosis     | 14.28 \(n=8\)   | 40.21 \(n=36\)  |
| Idiopathic choroiditis | 12.50 \(n=7\)   | 19.56 \(n=18\)  |
| Serpiginous choroiditis | 14.28 \(n=8\)   | 15.21 \(n=14\)  |
| APMPPE            | 1.78 \(n=1\)    | 5.43 \(n=6\)    |
| Multifocal choroiditis | 3.57 \(n=2\)   | 4.34 \(n=5\)    |
| Toxocara          | 7.14 \(n=4\)    | 4.34 \(n=5\)    |
| CMV retinitis     | 3.57 \(n=2\)    | 2.17 \(n=2\)    |
| ARN               | 3.57 \(n=2\)    | 1.08 \(n=1\)    |
| Syphilis          | 1.78 \(n=1\)    | 1.08 \(n=1\)    |

In posterior uveitis, VKH cases showed a slight decrease trend in 2012 compared to 2005 while there was a sharp increase in sympathetic ophthalmia in 2012 (21.87%, \(n = 14\)) compared to 2005 (3.22%, \(n = 1\)).
In all the varieties of uveitis, TB-related uveitis was a significant observation in 2012 as compared to 2005. The upsurge in intraocular TB in this study in comparison to 2005 was also seen in the studies done by other researcher from India and these trend of increase in infectious uveitis was also reported elsewhere from studies in Japan and other countries of the world. Toxoplasma retinochoroiditis showed an interesting decreasing trend in this study compared to 2005. In the study of 2005, toxoplasma retinochoroiditis was seen in 40.21% and was the most common cause of posterior uveitis and also overall, the most common reason of infectious uveitis. In this study, TB-related uveitis was found to be the foremost cause of infectious uveitis. The differential diagnosis of uveitis has changed with time. In European countries, TB and syphilis were regarded as the main cause of uveitis in the first half of the 20th century. Thereafter, a decrease of TB and syphilis as a cause of uveitis was reported in studies from Europe in general and Finland in particular during mid-1970’s. Again, in India, the resurgence of TB and other infectious uveitis such as parasitic uveitis was seen in the recent study by Rathinam and Namperumalsamy in the South Indian population. What was true in Rathinam and Namperumalsamy study was also true in the study by Biswas et al. and Singh et al. from different zones of India where infectious uveitis was seen around 30% of all uveitis. In this study, there were two isolated index cases of anterior chamber live parasites causing anterior uveitis, and they were diagnosed as dirofilaria and thelazia, respectively.

We, thus, described the causes in both the studies in a same population of the country. This can lead the investigators in the right direction to know the current scenario of hospital-based uveitis cases in the Northeast Indian population and direct means to improve the health condition in the suffering people.

### Acknowledgment

1. Sri Kanchi Sankara Health and Educational Foundation
2. Dr. Pradip Kumar Sarma, Rheumatologist, Gauhati Medical College, Guwahati, India
3. Dr. Saidul Islam, Parasitologist, Department of Parasitology, College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati, Assam, India
4. Dr. Himadri Shekar Das, Radiologist, Matrix Imaging, Guwahati, India.

### Financial support and sponsorship

Sri Kanchi Sankara Health and Educational Foundation.

### Conflicts of interest

There are no conflicts of interest.

### References

1. Biswas J, Narain S, Das D, Ganesh SK. Pattern of uveitis in a referral uveitis clinic in India. Int Ophthalmo1996-1997;20:223-8.
2. Das D, Bhattacharjee H, Bhattacharyya PK, Jain L, Panicker MJ, Das K, et al. Pattern of uveitis in North East India: A tertiary eye care center study. Indian J Ophthalmol 2009;57:144-6.
3. Jabs DA, Nussenblatt RB, Rosenbaum JT; Standardization of Uveitis Nomenclature (SUN) Working Group. Standardization of uveitis nomenclature for reporting clinical data. Results of the First International Workshop. Am J Ophthalmol 2005;140:509-16.
4. Henderly DE, Genstler AJ, Smith RE, Rao NA. Changing patterns of uveitis. Am J Ophthalmol 1987;103:131-6.
5. Rathinam SR, Namperumalsamy P. Global variation and pattern changes in epidemiology of uveitis. Indian J Ophthalmol 2007;55:173-83.
6. Rao NA, Robin J, Hartmann D, Sweeney JA, Marak GE Jr. The role of the penetrating wound in the development of sympathetic ophthalmia experimental observations. Arch Ophthalmol 1983;101:102-4.
7. Singh R, Gupta V, Gupta A. Pattern of uveitis in a referral eye clinic in North India. Indian J Ophthalmol 2004;52:121-5.
8. Päivönsalo-Hietanen T, Vaahtoranta-Lehtonen H, Tuominen J, Saari KM. Uveitis survey at the University Eye Clinic in Turku. Acta Ophthalmol (Copenh) 1994;72:505-12.
9. Nussenblatt RB, Whitcup SM. Uveitis: Fundamentals and Clinical Practice. 4th ed. Philadelphia: Mosby; 2010.
10. reKhairallah M, Yahia SB, Ladjimi A, Messaoud R, Zauouali S, Attia S, et al. Pattern of uveitis in a referral center in Tunisia, North Africa. Eye (Lond) 2007;21:33-9.