

**PATTERN OF UVEITIS IN GHAZIABAD REGION OF DELHI NCR**Anshu Sharma<sup>1</sup>, Sarita Aggarwal<sup>2</sup>, Rimsha Thaseen<sup>3</sup>, Rahul Sahay<sup>4</sup>, Richa Ahluwalia<sup>5</sup><sup>1</sup>Professor and HOD, Department of Ophthalmology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh.<sup>2</sup>Professor, Department of Ophthalmology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh.<sup>3</sup>Postgraduate Student, Department of Ophthalmology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh.<sup>4</sup>Postgraduate Student, Department of Ophthalmology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh.<sup>5</sup>Postgraduate Student, Department of Ophthalmology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh.**ABSTRACT****BACKGROUND**

Anterior uveitis is the most common cause of intraocular inflammation. Its aetiological pattern varies in different countries across the globe. It causes reduction in the vision during the acute stage, but if left untreated, the sequelae of anterior uveitis can have long-lasting impact.

The aim of the present study is to evaluate the pattern of anterior uveitis in the Ghaziabad region of Delhi NCR.

**MATERIALS AND METHODS**

A prospective cross-sectional study was conducted on 100 patients of anterior uveitis in the Outpatient Department of Ophthalmology at Santosh Medical College and Hospital, Ghaziabad, between January 2016 and June 2017. Information regarding age, gender, race, details of ocular examination, investigations, diagnosis and systemic disease association, if any were recorded for all patients.

**RESULTS**

In this study, aetiology remain undetermined in 39% cases. Anterior uveitis following blunt trauma was seen in 28% and HLA-B27 uveitis was detected in 12% cases. Herpes was responsible in 6% cases and tuberculosis in 2% case. Fuchs heterochromic iridocyclitis in 4% cases, spondyloarthropathy in 4% cases, juvenile idiopathic arthritis was observed in 3% cases and phacolytic in 2% cases.

**CONCLUSION**

Despite efforts, diagnosis remained obscure in 42% of the cases. Blunt trauma was the most common identifiable cause in 20% of the cases more so in labourers. The challenge in anterior uveitis is to develop tailored laboratory investigations that will facilitate a diagnosis. A thorough systemic examination should be done to rule out any systemic disease as it may be an early manifestation of systemic disease.

**KEYWORDS**

Aetiology, Pattern, Anterior Uveitis, Iritis, Iridocyclitis.

**HOW TO CITE THIS ARTICLE:** Sharma A, Aggarwal S, Thaseen R, et al. Pattern of uveitis in Ghaziabad region of Delhi NCR. J. Evid. Based Med. Healthc. 2017; 4(93), 5658-5661. DOI: 10.18410/jebmh/2017/1135

**BACKGROUND**

Anterior uveitis is the most common form of intraocular inflammation and the incidence of its aetiology varies in different countries around the world.<sup>1</sup> Left untreated, it results in potentially severe visual consequences.<sup>2</sup> Anatomically, anterior uveitis can be categorised as inflammation of the iris alone (iritis), anterior part of ciliary body (anterior cyclitis) or both structures (iridocyclitis).<sup>3-19</sup> It is more common than posterior segment inflammation, but is less serious and sight threatening, if treated early. If left untreated, anterior uveitis can have a long-lasting impact. In

*Financial or Other, Competing Interest: None.*

*Submission 18-11-2017, Peer Review 23-11-2017,*

*Acceptance 05-12-2017, Published 06-12-2017.*

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*DOI: 10.18410/jebmh/2017/1135*

the present study, diagnosis and management of anterior uveitis are based on the literature obtained from the National Library of Medicine's Medline Database and the Vision Net database.<sup>3-19</sup> If diagnosed and treated on time, anterior uveitis can be treated without long-term sequelae and even if there are associated complications, they can be managed if detected early. Since patterns of uveitis differ in various geographic regions, discovering these patterns would be helpful for the diagnosis and treatment of this broad category of conditions. This necessitates applying a universal diagnostic classification system to enable accurate comparisons. The present study was undertaken to evaluate the pattern of anterior uveitis in the Ghaziabad region of Delhi NCR.

**Inclusion Criteria**

- Patients with anterior uveitis of all aetiologies.
- Previously diagnosed known cases of anterior uveitis.
- Patients having chronic anterior uveitis.



**Exclusion Criteria**

- Patients with posterior uveitis.
- Patients with a recent history of any intraocular surgery.
- Masquerade syndromes presenting as anterior uveitis.

Patients not available for follow up in the given period of time.

**MATERIALS AND METHODS**

Following step ladder approach was undertaken to diagnose and investigate the patients of anterior uveitis-

1. Detailed history.
2. Ocular examination.
3. Physical examination - as and when required.
4. Ancillary investigations - as and when required.

**History-** A detailed history was taken in terms of onset and progression of symptoms, course and treatment received with emphasis on corticosteroids therapy. Past ocular history elicited recurrent attacks of uveitis and previous response to treatment. Apart from review of systems, the social history for pets, dietary history, sexual and drug history were obtained in detail.

**Ocular Examination-** Detailed examination of anterior and posterior systems was done.

**Physical Examination-** Relevant physical examination was done to rule out any systemic association in relation with the history. Symptoms of AAU consisting of rapid onset of pain, photophobia, redness and watery discharge, sometimes preceded by mild ocular discomfort were noted. Blurring of vision was related to severity of inflammation.

Visual acuity, which was variably impaired depending on the severity of inflammation and the presence of complications was noted with the help of Snellen’s chart.

**Slit-Lamp Examination**

‘Ciliary injection’ (perilimbal injection, ciliary flush or just ‘injection’) was made note of. It is circumcorneal conjunctival hyperaemia with a violaceous (purplish) hue due to involvement of deeper blood vessels and is typically seen in anterior uveitis of acute onset.

Miosis (if present) due to pupillary sphincter spasm predisposed to the formation of posterior synechiae was noted.

Anterior chamber cells, which are a dependable indicator of inflammatory activity. Grading (Sun Working Group) was performed by estimating the number of cells in a 1 mm by 1 mm slit beam field employing adequate light intensity and high magnification.

Hypopyon, which refers to a whitish purulent exudate composed of myriad inflammatory cells in the inferior part of the Anterior Chamber (AC) forming a horizontal level under the influence of gravity was looked for in the anterior chamber.

Keratic Precipitates (KP) are deposits on the corneal endothelium composed of inflammatory cells such as

lymphocytes, plasma cells and macrophages. They were noted by making a thin slit beam on the cornea and noting the endothelium. Morphology of the KPS were noted to differentiate between granulomatous and non-granulomatous uveitis.

Aqueous flare was noted by making a beam 1 mm wide and 3 mm long with the highest light intensity and 16x magnification on the BQ Haag-Streit slit lamp was used to grade the flare in the anterior chamber.

Fibrinous exudate in the anterior chamber is common in severe AAU and as with hypopyon is often seen with HLA-B27 related inflammation.

Iris nodules were noted at the pupillary border and mid stroma. Koeppe nodules are located on the pupillary margin and maybe the site of posterior synechiae formation. They can occur in both granulomatous and non-granulomatous anterior uveitis. Busacca nodules involve the iris stroma and are a feature of granulomatous uveitis.

Posterior Synechiae (PS), which are inflammatory adhesions between the pupil margin and the anterior lens capsule were looked for.

Iris atrophy was a useful diagnostic clues. Diffuse stromal atrophy is seen in FUS and patchy or sectoral atrophy can occur in herpetic uveitis both patterns maybe seen in both simplex and zoster-related inflammation.

Heterochromia iridis refers to a difference in colour between the iris of the two eyes, best seen in daylight, was made note of. In the context of uveitis, heterochromia characteristically occurs in FUS.

Iris neovascularisation (Rubeosis iridis) was checked with the help of gonioscopy.

**RESULTS**

The present study was conducted in the Department of Ophthalmology, Santosh Medical College, Ghaziabad, during January 2016 to June 2017, 100 patients in the age group of 11-80 years were studied, and during the study, following observations were made.

In present study, anterior uveitis accounted to 40% in 21-30 years age group, 26% in 31-40 years age, 10% in 41-50 years age, 9% in 51-60 years age, 8% in 61-70 years age, 4% in 20 years of age and 3% in 71-80 years age group. It was seen most commonly in 20-40 years age group accounting for 70%. It was less common in patients over 60 years (11%).

Sl. No.	Sex	Number	Percentage
1.	Male	59	59
2.	Female	41	41

**Table 1. Sex Distribution**

In the present study, males accounted 59% and females accounted 41%. Hence, males were affected more than females.

Sl. No.	Presentation	Number	Percentage
1.	Acute	74	74
2.	Chronic	19	19
3.	Recurrent	7	7

**Table 2. Clinical Presentation**

In the present study, it was observed that most common presentation was acute anterior uveitis accounting for 74%, then chronic 19% and only 7% of the patients had recurrent anterior uveitis.

In this study, aetiology remain undetermined in 39% cases. Anterior uveitis following blunt trauma was seen in 28% and HLA-B27 uveitis was detected in 12% cases. Herpes was responsible in 6% cases and tuberculosis 2% case. Fuchs heterochromic iridocyclitis in 4% cases, spondyloarthropathy 4% cases, juvenile idiopathic arthritis was observed in 3% cases and phacolytic in 2% cases.

Sl. No.	Aetiology	Number	%
1.	Idiopathic	39	39
2.	Blunt trauma	28	28
3.	HLA-B27	12	12
4.	Herpes	6	6
5.	Tuberculosis	2	2
6.	Spondyloarthropathy	4	4
7.	Juvenile idiopathic arthritis	3	3
8.	Fuchs' heterochromic iridocyclitis	4	4
9.	Phacolytic	2	2

**Table 3. Aetiological Distribution**

Sl. No.	Complications	No. of Eyes	%
1.	No complications	45	40.17%
2.	Persistent posterior synechiae	29	25.89%
3.	Cataract	20	17.85%
4.	Secondary glaucoma	11	9.8%
5.	Iris atrophy	5	4.4%
6.	Macular oedema	2	1.7%

**Table 4. Complications**

In the present study, complications were observed in 67 eyes (59.82%). Most common complication was persistent posterior synechiae seen in 29 eyes (25.89%), cataract in 20 eyes (17.85%), secondary glaucoma in 11 eyes (9.8%) followed by iris atrophy in 5 eyes (4.4%) and macular oedema in 2 eyes (1.7%). Most of the eyes, which had complications had more than one complication.

## DISCUSSION

To identify the pattern of anterior uveitis, a prospective study of all cases of anterior uveitis seen in Ghaziabad region of Delhi NCR was undertaken using a standard protocol and the results were compared with the pattern of uveitis in other parts of India and other countries. The uveitic population seen in our institute comprised cases from Ghaziabad region of Delhi NCR. The variation in the spectrum of uveitis is largely due to complex geographic, ecological, racial, nutritional and socioeconomic differences. Our uveitis study population had fairly homogenous background. All patients were Asian Indians and majority of patients belonged to north India. The incidence was found to be high between 20-40 years of age (70%) and less common over 60 years (11%). Idiopathic anterior uveitis was the commonest cause, which can be explained by high antigenicity found in this age group. It was noted that

patients between 20-30 year's age were affected most commonly (40%). In the present study, it was observed that males were affected more (59%) compared to females (41%), which was comparable to Rathinam et al (61.3%) males and (38.6%) females.<sup>20</sup> Alejandro Rodriguez et al<sup>21</sup> reported 38.9% male and 61.1% female involvement in their study. This maybe because men tend to seek medical attention more often than women and socioeconomic habits may put male patients at a greater risk for development of anterior uveitis. Also, because of their aggressive nature are more prone to blunt trauma related anterior uveitis. 7 cases were reported to be the result of ball hit in the eye. In Rathinam et al study,<sup>20</sup> 61.3% were males and 38.7% were females. Majority of patients came with unilateral presentation (88%). This finding was comparable with that of Rathinam et al<sup>20</sup> study (85.3%). However, there was no significant predilection for either the right or left eye. The most common presentation was acute iridocyclitis (74%) than chronic (19%) and recurrent iridocyclitis (7%). Rathinam et al<sup>20</sup> reported 71.9% acute, 24.3% chronic and 3.8% recurrent. Findings are comparable in both the studies. In this study, 92 patients (92%) had non-granulomatous inflammation, and in 8 patients (8%), it was granulomatous. Findings are comparable with previous studies. Out of 8 granulomatous inflammation, 7 were chronic and 1 patient had recurrent presentation. In the present study, blunt trauma (28%) was the most common cause of anterior uveitis followed by HLA-B27 (12%) aetiology. Although, herpes accounted for 6% of the cases, which is comparable with other two studies where it stood first is not the most common in present study. However, it was the most common infectious cause in our study. 2% of the patients had tubercular anterior uveitis, which is comparable with Rathinam et al<sup>20</sup> (4%) and Singh et al<sup>22</sup> study (7.9%), whereas there is no data in Henderly et al study. This difference maybe because all other studies were conducted at referral centres where cases usually chronic and recurrent ones are referred from primary and secondary centres, whereas present study was done in a hospital of peripheral region. Fuchs heterochromic iridocyclitis was found to be the cause in 4 patients (4%), 3 of whom were middle-aged females, which was comparable to Singh et al<sup>22</sup> (5.1%) and (8.3%) in Rathinam et al.<sup>20</sup> Due to its asymptomatic nature, patients of JIA (4%) presented relatively late with even strabismus as a presenting complaint in one of the 4 patients. The results were comparable to Singh et al<sup>22</sup> (14.6%) patients and none in Rathinam et al.<sup>20</sup> No complications were seen in 45 eyes (40.17%). Complications were commonly noted in chronic and recurrent cases. Most common complication observed was persistent posterior synechiae in 29 eyes (25.89%) and cataract in 20 eyes (17.85%). Secondary glaucoma was seen in 11 eyes (9.8%). Iris atrophy was seen in 5 eyes (4.4%), 2 of them in a leprosy patient and the third was in a herpetic patient and macular oedema was seen in 2 eyes (1%).

**CONCLUSION**

The challenge in anterior uveitis is to develop tailored laboratory investigations that will facilitate a diagnosis. This can be done by first considering the probable diagnosis based on the patient profile and then performing tailored laboratory evaluation. Early diagnosis and treatment of patients results in good visual prognosis and is the key in management of anterior uveitis. Since, uveitic entities follow different patterns in different regions and are influenced by a variety of factors, epidemiologic studies can help improve their diagnosis and treatment. Adoption of a universal classification systems and population-based studies in all countries may provide more reliable data for comparisons among different areas.

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