



Incidence of Uveitis in Local Population of Lahore

**Hussain Ahmad Khaqan ^{a++}, Laraib Hassan ^{a#*},
Aamna Jabran ^{a†}, Hafiz Ateeq Ur Rehman ^{a‡},
Muhammad Ali Haider ^{a^}, Hasnain Muhammad Bukhsh ^{a†},
Ahmad Fauzan ^{a#} and Muhammad Usman Zia ^{a#}**

^a Department of Ophthalmology, Post Graduate Medical Institute, Ameer-ud-Din Medical College, Lahore General Hospital, Lahore, Pakistan.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Uveitis tends to afflict younger age groups than other eye disorders like cataract and glaucoma, which typically affect the elderly. The frequency and prevalence of infectious ocular inflammation may vary greatly depending on the etiological agent and geographical location. This study found that the most frequent causes of infectious uveitis, which can account for up to 20% of all cases of uveitis in the developed world, are toxoplasmosis and herpetic infection. We found out that uveitis was more prevalent in the female population and that too in the younger age group having anterior uveitis more common.

⁺⁺ Professor;

[#] Post Graduate Resident;

[†] Senior Registrar;

[‡] Consultant ophthalmologist;

[^] Assistant Professor;

*Corresponding author: E-mail: dlaraib041@gmail.com;

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1. INTRODUCTION

Uveitis is an inflammation of the iris, ciliary body, and choroid, which make up the central layer of the eye. Other nearby tissues like the retina, optic nerve, and vitreous humour may also be affected [1]. Globally, this disease poses a hazard to vision. In the United States, it may cause up to 10% of legal blindness, while in underdeveloped nations, it may cause up to 25% [2,3]. Uveitis tends to afflict younger age groups than other eye disorders like cataract and glaucoma, which typically affect the elderly.

About 30,000 new cases of legal blindness are caused by uveitis each year in the United States alone, making it a major contributor to visual morbidity. [4,5] Since uveitis includes a wide range of diverse conditions, it is unclear how factors that differ locally, such as age, sex, ethnicity, environmental exposures, and genetics, affect ocular inflammation [6,7].

Uveitis is thought to affect more than 2 million people worldwide, and the number is rising [1, 3]. According to its aetiology, uveitis can be separated into immune-mediated and infectious types. The first one typically more prevalent in developing nations [4, 5], whilst the latter predominates in industrialised nations [6–8].

2. MATERIALS AND METHODS

This Observational study was conducted during 1st April 2022 to 30th April 2023 at Lahore general hospital, Lahore, Pakistan.

2.1 Sample Size

Sample size of 44 is estimated at 95% confidence level and taking expected Prevalence rate of uveitis as 92%

(Martinet et al., 2012) with 8% Margin of Error Using the following Formula:

$$n = Z^2 \frac{p(1-p)}{e^2}$$

Where:

Z_{1- α /2} = Confidence level = 95%

Z_{1- α /2} = 1.96

p = Prevalence rate of = 92%

e = Margin of Error = 8%

n = 44 Patients

2.2 Data Collection

Age, sex, age at onset, age at presentation, clinical diagnosis using the SUN classification system [3], laterality, course of the disease, grade of inflammation, best-corrected visual acuity (BCVA), type of uveitis, etiologic diagnosis, and complications were all collected from the patient's medical records and through a circulating performa.

From two uveitis reference textbooks, a final diagnostic list was created using the traditional criteria for ocular inflammatory disorders [9, 10]. To ensure the accuracy of the data, a single uveitis specialist evaluated each patient and retrieved their medical records.

A complete ophthalmologic examination was performed on each patient, which included tonometry, indirect ophthalmoscopy, slit-lamp biomicroscopy, and a BCVA evaluation. Purified protein derivate (PPD-Mantoux), fluorescent treponemal antibody-absorption (FTA-ABS), interferon-gamma release assays (IGRAs), chest radiography, venereal disease research laboratory (VDRL), fluorescent treponemal antibody-absorption (FTA-ABS), C-reactive protein, urine analysis, and venereal disease research laboratory were all similarly required of all patients.

Further eye exams, such as fluorescein angiography, optical coherence tomography, and visual field tests, were performed when needed. When it was necessary to make a diagnosis, additional tests were carried out, including computed tomography, magnetic resonance imaging, HLA-B27/B51/DR4/A29 typing, serum angiotensin-converting enzyme, Toxoplasma, Herpes simplex, Herpes zoster, and Cytomegalovirus antibodies, Borrelia antibodies, and enzyme-linked immunosorbent assay for HIV. Clinical criteria required the presence of active creamy-white focal retinal lesions, hyperpigmented retinochoroidal scars in either eye, and positive anti-Toxoplasma IgG and/or IgM levels to diagnose ocular toxoplasmosis. Intraocular fluids PCR was required to confirm unusual occurrences [11,12].

3. RESULTS AND DISCUSSION

Out of 44 patients there were 30 were females (68.18%) and 14 were males (31.80%).

Patients selected were between 20 and 60 years of age with 30 years as mean age group. Out of these 44 patients 31(71.4%) patients were below 30 years of age and 13 (29.5%) were above 30 years of age.

Out of these 44 patients, 18 (40.9%) had anterior uveitis out of these 18 , 12 (27.2%) were females and 6 (13.6%) were males , 12(27.2%) had intermediate uveitis out of which 8 (18.1%) were female and 4 (9%) were male , 14 (31.8%) out of 44 patients had posterior uveitis out of which 10 (22.7%) were and 4 (9%) were male.

In order to conduct a thorough, long-term epidemiologic investigation of infectious uveitis and scleritis in the United states sizable national medical claims database was analysed. Our findings offer fresh information on the incidence and prevalence of a very uncommon ailment in the real world, which may be used to inform patient education and population health policy planning.

Overall, we found that the incidence of any type of uveitis was 124.3 and 316.4 occurrences per 100,000 individuals per year, respectively. Infectious uveitis and scleritis were shown to have an overall mean annual incidence and prevalence of 19.1 and 60.6 per 100,000 people, respectively, in a population based in the United States, or around 14% of cases in our sample. Our main attention was on infectious uveitis [13,14,15].

The frequency and prevalence of infectious ocular inflammation may vary greatly depending on the etiological agent and geographical location. Our study found that the most frequent causes of infectious uveitis, which can account for up to 20% of all cases of uveitis in the developed world, are toxoplasmosis and herpetic infection [5]. In the developing world, infectious agents may be responsible for up to 30 to 50 percent of all uveitis cases; toxoplasmosis, tuberculosis, onchocerciasis, and cysticercosis are the most common etiologies [16,17,18,19]. These estimates of incidence and prevalence are influenced by the clinical setting, newly developing infectious patterns, more sensitive diagnostic procedures, and novel diseases or disease classifications. In our American investigation, the prevalence of infectious ocular inflammation was only detected in 14% of the individuals with uveitis [20,21].

4. CONCLUSION

anterior uveitis affects the anterior parts of the uveal tract including iris and the pars plicata

parts of the ciliary body, intermediate uveitis affects mainly the pars plana and posterior uveitis targets the posterior aspects of the uveal tract including the vitreous and the retina.

In our study there were a total of 44 patients divided into groups as male and female and age groups between 20 to 60 with mean age group of 30 and the anatomical division of the disease affecting various anatomical structures of the eye. We found out that uveitis was more prevalent in the female population and that too in the younger age group with anterior uveitis being more common.

ETHICAL APPROVAL

As per international standard or university standards written ethical approval has been collected and preserved by the author(s).

CONSENT

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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