# **Ophthalmology Research**

# **Epidemioclinical Profile of Uveitis in Lubumbashi**

# MPIA EPOMBE Florent<sup>1</sup>\*, NGOIE MALOBA Viviane<sup>1</sup>, TABU YEKOLI Léonard<sup>1</sup>, NGOIE KAYAMB Fernand<sup>1</sup>, ASSANI MORISHO<sup>1</sup>, KIMENYEMBO KASONGO Wivine<sup>1</sup>, TWITE BADYE Francine<sup>1</sup>, CIBAKA KABASELE Léon<sup>2</sup> and CHENGE BORASISI Gabrielle<sup>1</sup>

<sup>1</sup>Ophthalmology Department, Faculty of Medicine, University of Lubumbashi, Democratic Republic of Congo.

<sup>2</sup>*Radiology Department, Faculty of Medicine, University of Lubumbashi, Democratic Republic of Congo.* 

### \*Correspondence:

MPIA EPOMBE Florent, Ophthalmology Department, Faculty of Medicine, University of Lubumbashi, Democratic Republic of Congo, Tel: +243 997 803 988.

Received: 11 Feb 2023; Accepted: 25 Mar 2024; Published: 06 Apr 2024

**Citation:** MPIA Florent E, NGOIE Viviane M, TABU Léonard Y, et al. Epidemioclinical Profile of Uveitis in Lubumbashi. Ophthalmol Res. 2025; 8(2); 1-4.

### ABSTRACT

Introduction: The aim of this study is to contribute to improving the management of uveitis in our community.

**Methodology:** Cross-sectional descriptive study with prospective data collection carried out at the ophthalmology centre of the Lubumbashi university clinics. This was a non-probabilistic convenience sample that included 51 eyes of 37 patients diagnosed with uveitis and who had undergone a standard aetiological work-up, out of a total of 6,402 patients consulted between November 2022 and December 2024. The study variables were: age, sex, functional signs, corrected distance visual acuity, anterior chamber tyndall, retrocorneal iridial fibrin or pigment deposition, Koeppe nodules, Busacca nodules, intraocular pressure, cataract, vitreous tyndall, macular oedema, papilledema, chorioretinal lesions and aetiology.

**Results:** The incidence of uveitis was 1.03%. Men accounted for 68%, giving a sex ratio of 2,1. The mean age was 49.1±18.7 years (range: 13-77 years). Uveitis was unilateral in 62% of patients. The average consultation time was 11 days (range: 1-45 days). The main reason for consultation was ocular pain, followed by ocular redness, photophobia and reduced visual acuity. 82% of affected eyes had a visual acuity  $\geq 0.5$ . Uveitis was anterior in 92% of cases, with 17% of granulomatous anterior uveitis. 59.5% of uveitis was of undetermined origin.

**Conclusion:** This study shows that uveitis remains a rare reason for patient consultation in our setting, with anterior uveitis being the most common form. The vast majority of uveitis cases are of undetermined cause. However, they require a good aetiological diagnosis in order to guide management.

#### Keywords

Uveitis, Epidemiology, Clinic, Aetiology, Lubumbashi.

## Introduction

Uveitis is an intraocular inflammation involving the pigmented vascular layer of the eyeball, the uvea, composed of the iris, ciliary body and choroid. This term, however, is now used more widely to describe many forms of intraocular inflammation affecting not only the uveal tract but also the retina and its vessels, the optic nerve and the vitreous [1,2]. Their aetiology is poorly understood, and an infectious and/or autoimmune origin is suspected. An autoimmune

origin is often suggested for idiopathic uveitis in humans for which an infectious origin has not been found [1]. Uveitis is a significant cause of blindness worldwide, accounting for 10-15% of blindness in Western countries and the third leading cause of blindness worldwide [1,3]. Although the positive diagnosis of uveitis is easy, the aetiological diagnosis often requires numerous and costly investigations, which do not always provide certainty of the aetiology.

Numerous studies have examined the pattern of uveitis worldwide. Many come from Western countries (USA and Europe), while data from developing countries are less common [4,5]. In general, there is a greater proportion of infectious causes of uveitis, with limited diagnostic resources making some diagnoses more difficult [4,6].

The aim of this study was to determine the epidemiological, clinical and aetiological aspects of uveitis in our environment.

# **Patients and Method**

We conducted a cross-sectional descriptive study with prospective data collection at the ophthalmology centre of the university clinics in Lubumbashi. This was a non-probabilistic convenience sampling that included 51 eyes of 37 patients diagnosed with uveitis and having undergone a standard etiological work-up, out of a total of 6,402 patients consulted between November 2022 and December 2024. The study variables were: age, sex, functional signs, corrected distance visual acuity, anterior chamber tyndall, retrocorneal iridial fibrin or pigment deposition, Koeppe's nodules, Busacca's nodules, intraocular pressure, cataract, vitreous tyndall, macular oedema, papilledema, chorioretinal lesions and aetiology.

A standard aetiological work-up was prescribed for each patient, including an inflammatory work-up (WBC, FL, VS, CRP) and syphilitic serology (VDRL/RPR). A chest X-ray was ordered for patients with acute granulomatous anterior uveitis or chronic uveitis. B-mode ultrasound and/or retinography were performed in patients with posterior uveitis. Data were entered and analysed using Excel 2013 and EPI-INFO version 7.2.2.6. Some statistical tests were performed with a 95% confidence interval.

# Results

During the study period, 6402 patients were seen at the ophthalmology centre of the University Clinics of Lubumbashi, of whom 66 were diagnosed with uveitis, a frequency of 1.03%.

We selected 51 eyes from 37 patients who had undergone the standard aetiological work-up for uveitis. The mean age was  $49.1\pm18.7$  years (range: 13-77 years). Ocular history was dominated by glaucoma (20%), followed by previous episodes of uveitis (12%). 67% of patients had no previous ocular history. Uveitis was unilateral in 62% of patients. The average consultation time was 11 days (range: 1 - 45 days). 48% of patients diagnosed with uveitis had consulted a doctor within the first week after the onset of symptoms.

### **Socio-demographic Parameters**

 Table 1: Sex and age of patients.

Corr	Age (years)				
Sex	< 20	20-39	40-59	≥ 60	Total
Males	2 (5,4%)	3 (8,1%)	9 (24,3%)	11 (29,7%)	25 (67,6%)
Females	2 (5,4%)	4 (10,8%)	4 (10,8%)	2 (5,4%)	12 (32,4%)
Total patients	4 (10,8%)	7 (18,9%)	13 (35,1%)	13 (35,1%)	37 (100%)

Men accounted for 67.6% of patients with uveitis, giving a sex ratio of 2.1.

The most common age groups were 40-59 and over 60.

### **Reason for Consultation**

The most frequent reason for consultation was eye pain (57%). Uveitis was unilateral in 23 patients (62%) and bilateral in 14 (38%).



Figure 1: Reason for consultation.

#### **Corrected Visual Acuity at Initial Examination Table 2:** Corrected visual acuity at initial examination.

Visual acuity	Number	Percentage
$\geq 5/10$	42	82%
5/10 - 3/10	1	2%
3/10 - 1/10	3	6%
< 1/10	2	4%
< 1/20	3	6%
Total eyes	51	100%

On initial examination, 43 eyes (84%) had good vision, 5 eyes (10%) were visually impaired and 3 eyes (6%) were blind.

### **Examination of the Anterior and Posterior Segments**

We noted 45 eyes with retro-corneal deposits (88%), 6 eyes with a tyndall in the anterior chamber (12%), 5 eyes with keratitis (10%), 6 eyes with hypertonia (12%), 4 eyes with posterior synechiae (8%) and 4 eyes with chorioretinal lesions (8%).

#### Anatomical Location and Granulomatous Nature of Uveitis

**Table 3:** Distribution of Uveitis According to Anatomical Location and

 Granulomatous Nature of Uveitis.

Anatomical location		Frequency	Cumulative frequency	Percentage	Cumulative Percentage
Anterior	Non Granulomatous	39	39	76,5	76,5
uvenus	Granulomatous	8	47	15,7	92,2
Posterior uveitis		4	51	7,8	100
Total eyes		51	51	100	100

Forty-seven eyes (92.2%) had anterior uveitis, of which 39 (76.5%) had non-granulomatous anterior uveitis.

	$AV \ge 3/10$	AV < 3/10	Total
Anterior uveitis	42 (89,4%)	5 (10,6%)	47 (100%)
Posterior uveitis	1 (25%)	3 (75%)	4 (100%)
Total eyes	43	8	51 (100%)

#### Association Between Anatomical Location and Visual Acuity Table 4: Anatomical location of uveitis and visual acuity.

Seventy-five percent of eyes with posterior uveitis had visual impairment or blindness. There was a significant association between the anatomical location of the uveitis and visual acuity (p = 0.001).

### **Etiology of Uveitis**

**Table 5:** Distribution of uveitis according to etiology.

	Frequency	Percentage
Infections	12	32,4%
Ocular Trauma	3	8,1%
Undetermined	22	59,5%
Total patients	37	100%

**Table 6:** Distribution of infectious uveitis according to type of infection.

	Frequency	Percentage
Syphilis	2	16,7%
Ocular toxoplasmosis	3	25%
Other (AOM, dental caries)	2	16,7%
Undetermined infection	5	41,7%
Total patients	12	100%

The aetiology of uveitis was undetermined in 22 patients (59.5%); uveitis of infectious origin was diagnosed in 12 patients (32.4%), including 2 cases of syphilis (16.7% of infectious uveitis) and 3 cases of ocular toxoplasmosis (25% of infectious uveitis). Traumatic uveitis affected 3 patients (8.1%).

# Discussion

The epidemioclinical characteristics of uveitis are highly variable due to multiple factors: geographical, environmental, genetic and socioeconomic.

The hospital frequency of uveitis in our study was 1.03%. This corresponds to that found by Ayena et al. [7] in Benin. However, our results are higher than those of Nsiangani et al. [8] in Kinshasa/ DR Congo, and those of Adam et al. [9] in Niger. With regard to age, uveitis is essentially a disease of adults, with a peak in frequency in individuals of working age, with a major economic impact [10]. The mean age in our series was  $49.1\pm18.7$  years; the largest age group was that of patients aged over 40 years. The mean age found in our study is higher than those reported by most authors [7-9,11-13]. This can be explained by the fact that in our series, we recorded a large proportion of patients aged over 60 years (35%), confirming the fact that uveitis is far from exceptional in patients aged over 60 years [10,14].

The sex ratio was 2:1, with a clear predominance of men. Our results are similar to those of Ayena et al. [7] in Benin, but significantly better than those reported in other series in which the male/female distribution was balanced [8,9,12,15]. The main

reason for consultation in our study was ocular pain, followed by ocular redness and then reduced vision. Our results differ from those of most authors [7-9,11], but particularly from those of Ayena et al. [7] in Benin and Nsiangani et al. [8] in Kinshasa/RD. Congo, in whom reduced vision was by far the main reason for consultation. This difference could be explained by the following facts:

On the one hand, in our series the majority of patients consulted early after the appearance of the first signs (within 7 days), whereas in Ayena's study conducted in semi-urban and rural areas, patients consulted late, due to poverty and ignorance. On the other hand, in our series, almost all patients had anterior uveitis (92%), whereas in the two above-mentioned series, a larger proportion of posterior uveitis was reported and, in Ayena, a certain proportion of panuveitis. Uveitis was unilateral in the majority of cases, as described in the literature.

We noted 8% of posterior uveitis in our study, and no cases of intermediate uveitis or panuveitis. These results differ from those of Perez-Roustit et al. [12] in France, Nsiangani et al. [8] in Kinshasa/DRC, and Saadouli et al. [13] in Tunisia, who reported a higher proportion of posterior uveitis in their series (28.1%, 26.1% and 13.3% respectively), as well as a significant proportion of panuveitis and a minimal proportion of intermediate uveitis.

Regarding vision at initial examination, 84% of patients had good vision compared with 16% with visual impairment or blindness. Our results are similar to those of Adam et al [9] in Niger, who reported a higher proportion of patients with good vision (93%). In their series, as in ours, the patients consulted early and the majority had previous uveitis. In contrast, our results are at odds with those of other authors who have found much higher proportions of visual impairment and blindness (30-50%) [7,8,15]. The reasons are the same as those put forward above: late consultations and greater proportions of posterior uveitis and/or panuveitis, with possible macular damage.

There is considerable diversity in the etiology of uveitis. In our study, an aetiology was diagnosed in 40.5% of cases, with 32.4% of uveitis of infectious origin. Toxoplasmosis was the most common infectious aetiology, followed by syphilis. The proportion of uveitis of undetermined aetiology in our study is much lower than those reported in the series by Ayena et al. [7] in Benin (study carried out in semi-urban and rural areas, with very limited means of investigation) and Adam et al. [9] in Niger (high cost of paraclinical examinations).

The percentage of uveitis of unknown aetiology is much lower in the North African [13] and French [12] series, which may be explained by easier access to the paraclinical investigations essential for the aetiological diagnosis of uveitis. In these series, we also note a certain proportion of uveitis caused by systemic diseases and linked to specific entities, whereas in our series, as in other series from tropical Africa, we note a greater proportion of infectious causes of uveitis, in accordance with the literature [6].

### Conclusion

The epidemioclinical and aetiological factors of uveitis vary widely in our environment, as elsewhere in the world.

In terms of aetiology, there is a high proportion of infectious uveitis, with toxoplasmosis at the top of the list, followed by syphilis. Therefore, a good knowledge of the epidemiological and aetiological factors of uveitis in our environment is invaluable in guiding the diagnostic approach, as well as the therapeutic management, especially as the means of investigation are very limited.

### References

- 1. Brézin A. Les uvéites. Rapport de la Société française d'ophtalmologie. Paris Masson. 2010; 12.
- Prete M, Dammacco R, Fatone MC, et al. Autoimmune uveitis clinical pathogenetic and therapeutic features. Clin Exp Med. 2016; 16: 125-136.
- Jabs DA, Nussenblatt RB, Rosenbaum JT. Standardization of uveitis nomenclature for reporting clinical data. Results of the first international workshop. Am J Ophthalmol. 2005; 140: 509-516.
- 4. Yang P, Zhang Z, Zhou H, et al. Clinical patterns and characteristics of uveitis in a tertiary center for uveitis in China. Curr Eye Res. 2005; 30: 943-948.
- Rathinam SR, Namperumalsamy P. Global variation and pattern changes in epidemiology of uveitis. Indian J Ophthalmol. 2007; 55: 173-183. Rathinam SR, Cunningham ET. Infectious causes of uveitis in the developing world. Int Ophthalmol Clin. 2000; 40: 137-152.

- Ayena KD, Vonor K, Santos M, et al. Profil épidémiologique des uvéites à Boko et à Parakou au nord du Bénin. Med Sante Trop. 2017; 27: 315-318.
- Nsiangani LN, Kaimbo KD. Patterns of Uveitis at the Tertiary Eye Care Clinic of Kinshasa, Democratic Republic of Congo. J Ophthalmol & Vis Sci. 2021; 6: 1058.
- 8. Adam ND, Haboubacar AM, Laminou L, et al. Aspects épidémiologiques et clinique des uvéites au Niger : analyse rétrospective d'une série de 127 cas colligés sur 5 ans. Ann Afr Med. 2023; 17: 5488-5494.
- Bodaghi B, LeHoang P. Uvéite 2<sup>e</sup> édition. Paris. Elsevier Masson. 2017; 23-24.
- Chabchoub I, Ben Salah R, Ben Hamad M, et al. Profil épidémiologique et étiologique des uvéites en milieu de médecine interne. La Revue de Médecine Interne. 2022; 43: 493.
- Perez-Roustit S, Épidémiologie. caractéristiques cliniques et étiologiques des uvéites prises en charge au CHU de Montpellier. Médecine humaine et pathologie. dumas-03185231. 2018; 57-65.
- 12. Saadouli D, Belhassen A, Loukil I, et al. Profil épidémiologique, clinique et étiologique des uvéites. La Revue de Médecine Interne. 2021; 42: 364.
- Gritz DC, Wong IG. Incidence and prevalence of uveitis in Northern California; the Northern California Epidemiology of Uveitis Study. Ophthalmology. 2004; 111: 491-500.
- Souley ASY, Abdellah HOM, Khmamouche M, et al. Profil épidémiologique des uvéites à propos de 105 cas. Pan Afr Med J. 2016; 27: 24-97.

© 2025 MPIA Florent E, et al. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License