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Epidemiological Study of Inflammatory Eye Diseases at the CHU-BSS of Kati

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Abstract

Introduction: Ocular inflammation is a frequently encountered entity in ophthalmology. Depending on the inflamed part of the eye, different forms of ocular inflammation are distinguished. The challenge for the clinician will be to differentiate a benign pathology from a serious pathology that threatens visual function and requires urgent management. The aim is to make an epidemiological analysis of inflammatory eye diseases at the CHU-BSS of Kati. **Materials and Methods:** The study was carried out at the CHU-BSS of Kati between January 1 and December 31, 2023 and involved 1159 patients with various inflammatory eye diseases. **Results:** During the study period, 1159 cases of ocular inflammation were diagnosed out of 2111 new consultations, *i.e.* an incidence of 54.90%. Patients aged between 0 and 20 years were more affected with 41%. Women were more affected with 63.7%. The predominant symptom was pruritus with 57.8%. The main pathologies diagnosed were dominated by allergic conjunctivitis, bacterial conjunctivitis, with respectively 57.9% and 23.4%. **Discussion:** The results obtained reflect the findings made in the current practice of ophthalmology. Indeed, inflammatory diseases of the ocular surface, generally benign, are more frequent than intraocular inflammations which can jeopardize the functional or even anatomical prognosis of the affected eye. **Conclusion:** Endoocular inflammations are less frequent. Despite the possibility of functional complications, a rigorous diagnosis and a well-conducted medical treatment overcome most inflammatory ocular diseases.

Keywords

Epidemiology, Inflammatory, Eye-Disorders

1. Introduction

Ocular inflammation is one of the main reasons for specialist consultation. It can affect the various ocular tunics, the optic nerve, the orbit and the lacrimal ducts [1]. Depending on the inflamed part of the eye, different forms of ocular inflammation are distinguished. Usually, it is the appearance or observation of a more or less painful red eye that constitutes the important warning sign and the reason for consultation. Ocular inflammations can have various origins, including infectious (virus, bacteria, fungus), allergic, traumatic or even rheumatic. Ocular inflammatory pathologies are generally benign with a simple resolution. For a significant portion, the evolution can be punctuated by complications that can jeopardize the functional or even anatomical prognosis of the eye [2]. The challenge for the clinician will be to differentiate a benign pathology from a serious pathology that threatens visual function and requires urgent management (acute angle-closure glaucoma, postoperative infection, intraocular foreign body, uveitis, acute keratitis [3]. In the literature there is very little data on the epidemiology of inflammatory diseases. Thus, uveitis is the best treated ocular inflammation often to the detriment of the causes of ocular inflammation [4]-[9]. The insufficiency or even absence of epidemiological data on ocular inflammatory diseases in general and the need for an efficient therapeutic approach concerning the different proportions of this pathological entity in clinical activities led to the initiation of the present study whose aim is to make an epidemiological analysis of inflammatory ocular diseases at the CHU-BSS of Kati.

2. Materials and Methods

Study setting: The study was carried out at the Bocar Sidi Sall University Hospital in Kati, which has a 2nd level ophthalmology center.

2.1. Type and Period of Study

We carried out a descriptive cross-sectional study covering the period from January 1 to December 31, 2020.

2.2. Study Population and Selection Criteria and Information Collection

The sampling involved all patients who consulted during the study period and gave their consent to participate in the survey. Those who did not consent to participate in the study were excluded. Patient information was collected on a pre-established questionnaire and survey form through interview.

2.3. Ophthalmological Examination

All patients underwent a complete ophthalmological examination based on the measurement of distance acuity assessed on the Snellen optotype scale, the state of the anterior segment and the posterior segment on slit lamp examination.

2.4. Case Definition

Without being exhaustive, the study took into account all ocular pathologies likely to cause inflammation, from the most common such as blepharitis, conjunctivitis, pterygium, styes to the most serious such as acute keratitis, uveitis, endophthalmitis, panophthalmitis.

2.5. Variables Studied, Data Entry and Analysis

The variables studied were age, sex, medical-surgical history, ophthalmological history, reason for consultation, ocular inflammatory pathology diagnosed, treatment method and evolution. Data entry, processing and analysis were done using Word and SPSS 25 software. Proportions were expressed in absolute or relative values.

3. Results

Of the 2111 patients who consulted during the study period, we collected 1159 cases of ocular inflammation of various origins, *i.e.* a proportion of 54.90%. The most affected age group was 0 - 20 years with a frequency of 41% (Table 1) with an average age of 30.28 and extremes of 1 and 92 years. The female sex was the majority with 63.68% against 36.32% for the male sex, *i.e.* a F/M ratio of 1.75 (Table 1). The dominant medical-surgical history was high blood pressure with 0.4%. The dominant ophthalmological history was ocular trauma with 5.3%. (Table 2) Pruritus was the most mentioned reason for consultation with a frequency of 57.8%. (Table 3). Allergic conjunctivitis and bacterial conjunctivitis were the most common ocular pathologies with a respective frequency of 57.9% and 23.4% (Table 4). Medical treatment was the most indicated with a frequency of 99.3% (Table 5). The evolution was good in the majority of cases, *i.e.* a proportion of 99.5% (Table 6).

3.1. Socio-Demographic Characteristics

Table 1. Distribution of patients by age and gender.

	n	%
Age group		
0 - 20	475	41
21 - 40	326	28.1
41 - 60	219	18.9
60+	139	12

Continued

Sex		
Women	738	63.68
Men	421	36.32

3.2. Clinical Characteristics

Table 2. Distribution of patients according to medical-surgical and ophthalmological history.

Background	n	%
Medical and surgical history		
Stroke	1	0.1
Diabetes	1	0.1
High blood pressure	5	0.4
None	1152	99.4
Ophthalmological history		
Cataract surgery	27	2.3
Eye trauma	62	5.3
None	1070	92.3

Table 3. Distribution of patients according to reason for consultation.

Reason for consultation	n	%
Eye pain	157	13.6
Photophobia	1	0.1
Itching	670	57.8
Eye redness	36	3.1
Secretion	262	22.6
Foreign body sensation	9	0.8
Eyelid swelling	21	1.8
Periocular swelling	3	0.3
Total	**1159**	**100**

Table 4. Distribution of patients according to the pathology diagnosed.

Diagnosed pathologies	n	%
Annexes of the eye		
Blepharitis	1	0.1
Chalazion	16	1.4
Allergic conjunctivitis	671	57.9
Bacterial conjunctivitis	271	23.4
Irritant conjunctivitis	75	6.4

Continued

Dacryocystitis	3	0.3
Stye	4	0.3
Anterior segment		
Neovascular glaucoma	1	0.1
Keratitis	40	3.5
Pterygium	68	5.9
Anterior uveitis	7	0.6
Anterior and posterior segment		
Endophthalmitis	1	0.1
Panophthalmia	1	0.1
Total	**1159**	**100**

Table 5. Distribution of patients according to treatment method.

Processing mode	n	%
Medical	1151	99.3
Surgical	4	0.3
Referred to pediatric ophthalmology	4	0.3
Total	**1159**	**100**

Table 6. Distribution of patients according to evolution.

Evolution	n	%
Good	1153	99.5
Bad	2	0.2
No follow-up	4	0.3
Total	**1159**	**100**

4. Discussions

4.1. Limitations

This study examines the epidemiological characteristics of inflammatory eye diseases at the CHU-BSS of Kati. The absence of similar comparative studies and the non-exhaustiveness of the ocular pathologies causing inflammation found in this study could be its limitations. However, the results obtained deserve to be commented on to better understand this entity as a whole.

4.2. Epidemiology

4.2.1. Frequency

By analyzing 1159 patients with various inflammatory eye conditions out of 2111 new consultations, the study found an incidence rate of 54.90%, which represents a little more than half of the pathological entities diagnosed. This result sufficiently

proves the importance and the prominent place occupied by inflammatory conditions in ophthalmological activities.

4.2.2. Distribution of the Following Patients

Age:

In this series, the most affected age group was 0 - 20 years with 41% (n = 475) followed by 21 - 40 years, 41 - 60 years and 61 years and over with respectively 28.1% (n = 326), 18.9% (n = 219) and 12% (n = 139). We have observed a regressive evolution of the frequency of inflammatory eye diseases with age. Older people would be more tempted to consult a specialist for a visual problem related to age-related ocular changes than for mild to moderate ocular inflammation against which therapeutic abstention or self-medication is often the rule in our countries.

Gender:

The female gender was more affected with 63.68% (n = 738) against 36.32% (n = 421) for men. Women would be more prone to eye inflammations, particularly related to the use of beauty products, culinary and household habits through the use of wood fire and African broom which respectively raise smoke and dust, a source of eye surface irritation.

4.3. Clinical Aspect

4.3.1. Medical-Surgical and Ophthalmological History

Most of the patients received had no medical-surgical history, *i.e.* 99.4% (n = 1152). The medical history found was dominated by high blood pressure with 0.4% (n = 5) followed by diabetes with 0.1% (n = 1) and stroke with 0.1% (n = 1). The ophthalmological history found was dominated by eye trauma with 5.3% (n = 62) and cataract surgery with 2.3% (n = 27). These histories are perhaps underestimated because in practice they are not clearly defined by patients at the consultation.

4.3.2. Reason for Consultation

The predominant symptom was pruritus with 57.8% (n = 670) followed by secretions with 22.6% (n = 262) and ocular pain with 13.6% (n = 157). These reasons for consultation are very often the components of an inflammatory ocular pathology to be sought by a rigorous clinical examination. Some can hide a more serious ocular pathology.

4.3.3. Diagnosed Pathologies

Pathologies of the adnexa, in particular allergic conjunctivitis, bacterial conjunctivitis, irritative conjunctivitis, pterygium dominated the morbidities observed with respectively 57.9% (n = 671), 23.4% (n = 271), 6.4% (n = 75), 5.9% (n = 68). They were followed by keratitis with 3.4% (n = 39). These results reflect the findings made in the current practice of ophthalmology. Indeed, inflammatory diseases of the ocular surface, generally benign, are more frequent than intraocular inflammations which can jeopardize the functional or even anatomical prognosis of the affected eye.

4.3.4. Treatment Method and Evolution

Medical treatment was successfully indicated in 99% (n = 1153) of cases. However, two cases of ocular blindness have been noted, their development having been marked by the anatomical loss of the affected eye. Properly conducted medical treatment would resolve most inflammatory ocular conditions. However, despite the therapeutic resources used, some may be punctuated in their development by blinding complications.

5. Conclusion

This study shows that ocular inflammatory diseases represent more than half of the pathologies diagnosed in ophthalmology. It mainly affects young women without any particular history. Endoocular inflammations are less frequent. Despite the possibility of functional complications, a rigorous diagnosis and a well-conducted medical treatment overcome most inflammatory ocular diseases.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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