

Epidemiological profile of visits in a public ophthalmic emergency service

Perfil epidemiológico dos atendimentos em um serviço público de urgência oftalmológica

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ABSTRACT

Objective: To identify the most frequent diagnosis and epidemiological characteristics of patients attended in a public ophthalmic emergency service. **Methods:** This is a retrospective and transverse study based on 2834 patients' chart attended from July to September 2017 at the Ouro Verde Hospital Complex, Campinas, Brazil. The following variables were investigated: age, gender, and diagnosis. **Results:** Most patients were male (52.6%) and aged between 30 to 59 years (43.5%); 21.1% were elderly. The most frequent diagnostics were conjunctivitis (23.9%), ocular trauma (15.7%), and ocular surface disorders (14.6%). Infectious/inflammatory conditions predominated among children and female; 83.6% of traumas occurred in man, and 62.2% were due to a foreign body. **Conclusion:** The most prevalent diagnoses in the ophthalmologic emergency department were infectious conjunctivitis and ocular trauma. Education and prevention measures are necessary to reduce morbidity and absenteeism and to avoid inappropriate use of specialized emergency services.

Keywords: Eye diseases/epidemiology; Emergencies; Conjunctivitis; Eye foreign bodies; Eye injuries

RESUMO

Objetivo: Identificar os principais diagnósticos e características epidemiológicas dos pacientes atendidos em um serviço público de urgência oftalmológica. **Métodos:** Estudo transversal e retrospectivo, com análise de prontuários de 2834 pacientes atendimentos no período de julho a setembro de 2017, no serviço de Urgência Oftalmológica do Complexo Hospitalar Ouro Verde, Campinas, Brasil. As variáveis estudadas foram idade, gênero e diagnóstico. **Resultados:** Houve a prevalência do gênero masculino (52,6%) e da faixa etária de 30 a 59 anos (43,5%); 21,1% eram idosos. Os diagnósticos mais prevalentes foram conjuntivite infecciosa (23,9%), trauma ocular (15,7%) e doenças da superfície ocular (14,6%). Entre mulheres e crianças houve o predomínio de quadros infecciosos/inflamatórios; 83,6% dos traumas ocorreram em homens, sendo 62,2% devido a corpo estranho. **Conclusão:** Os diagnósticos mais prevalentes no serviço de urgência oftalmológica foram conjuntivite infecciosa e trauma ocular. Medidas de educação e prevenção são necessárias para reduzir morbidade e absenteísmo e evitar o uso inapropriado dos serviços especializados de emergência.

Descritores: Oftalmopatias/epidemiologia; Emergências; Conjuntivite; Corpos estranhos no olho; Traumatismos oculares

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INTRODUCTION

Ophthalmologic urgencies can have a great impact on the health of the individuals, due to the potential risk of irreversible visual loss.⁽¹⁾ Besides, they are an important cause of absenteeism, since the economically active population is the most present in ocular emergency room visits.^(2,3)

Knowledge about the main ophthalmological emergencies, as well as the epidemiological characteristics of the population that seeks this service is mandatory for the planning of health policies and improvement of services.

The Ophthalmological Emergency Service of Complexo Hospitalar Ouro Verde in Campinas, Brazil, performs clinical and surgical care of patients with ocular complaints on free demand, and patients referenced from primary and secondary services in Campinas and nearby cities. Therefore, it reflects the epidemiology of a broad region, serving as the basis for action to prevent blindness. However, there is still little data available.⁽⁴⁾

The objective of the present study is to evaluate the most common diagnoses and epidemiological characteristics of the patients treated in the public service of ophthalmological emergency. It is also intended to update data on ophthalmological emergencies in our country, thus contributing to improvements in the care network.

METHODS

This is a descriptive, cross-sectional, and retrospective study with a non-probabilistic sample with the review of medical records of patients treated at the Ophthalmologic Emergency Service of Complexo Hospitalar Ouro Verde from July to September, 2017.

The outcome variable was the ophthalmologic diagnosis, grouped into the following categories: ocular allergy, blepharitis/meibomitis, cataract, orbital/periorbital cellulitis, infectious conjunctivitis, retinal/vitreous diseases, ocular surface diseases (keratitis, deepithelialisation, corneal infiltration, non-specific irritation and dry eye), lacrimal system diseases, subconjunctival hemorrhage, hordeolum, herpes simplex infection, ocular trauma (including closed trauma - bruises, lacerations, and superficial foreign body - open trauma - penetrating and intraocular foreign body - eye burns and others),^(2,5) pterygium/pingueculitis, corneal ulcer, uveitis and diagnosis to be clarified. The diagnoses with lower prevalence were grouped in "others". The exposure variables were gender and age, divided into four age groups: 0 to 14, 15 to 29, 30 to 59 and > 60 years, for comparison with other national studies.^(2,4,6)

The study was approved by the Research Ethics Committee of Faculdade São Leopoldo Mandic (protocol number 3,194,642), and there is no need for a Free and Informed Consent Form to guarantee total secrecy of the information. All patients were evaluated by ophthalmologists, and the medical records were analyzed by trained researchers. The frequency calculations were done in the Epi Info program, version 7.

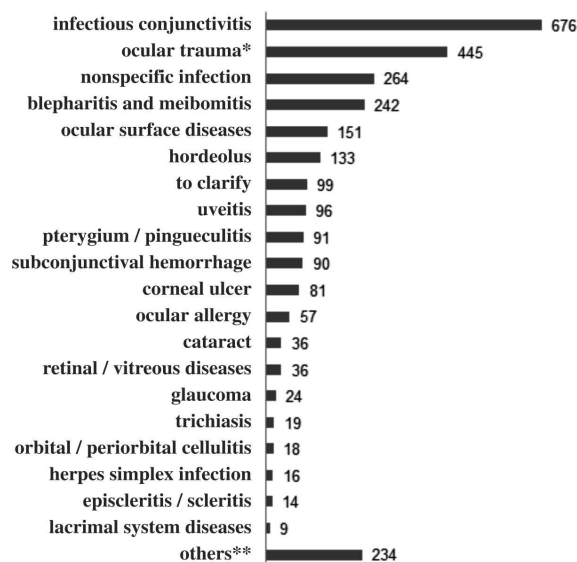
RESULTS

The medical records of 2834 patients with male prevalence (52.6%) and age group of 30 to 59 years (43.5%) were evaluated. The mean age was 39.6 years (\pm 21.3 years), and varied from 0 to 102 years (Table 1).

Table 1
Distribution of patients treated at a public ophthalmological emergency service according to gender and age

Age (years)	Gender				Total	
	Male		Female		n	%
	n	%	n	%		
0 a 14	193	54.1	164	45.9	357	12.6
15 a 29	319	49.4	327	50.6	646	22.8
30 a 60	692	56.1	542	43.9	1234	43.5
\geq 60	286	47.9	311	52.1	597	21.1
Total	1490	52.6	1344	47.4	2834	100.0

The most frequent diagnosis was infectious conjunctivitis (23.9%), followed by ocular trauma (15.7%), ocular surface diseases (14.6%), blepharitis/meibomitis (8.5%), and horneolus (4.7%). Among the patients with ocular trauma, the presence of a foreign body (superficial or intraocular) was the most common cause (62.2%), followed by non-penetrating trauma caused by concussion (29.4%), the rest being distributed among ocular perforation, laceration, burn, and others (Figure 1).



* Ocular trauma: closed ocular trauma (concussions, lacerations, and superficial foreign body); open eye trauma (penetrating and intraocular foreign body); ocular burns, and other types of ocular trauma.

** Others: Blepharospasm, keratoconus, atopic dermatitis, migraine, ectropion, endophthalmitis, ocular herpes zoster, CMV infection, flies, refractive disorders, etc. N = 2834.

Figure 1: Absolute frequency of diagnoses in a public service of ophthalmological emergency

Table 2 shows the distribution of the five main diagnoses by gender, and table 3 by age group.

DISCUSSION

Among the patients who sought the ophthalmological emergency service, males and the economically active age group predominated, similar to other cases.^(3,7,8)

Ocular traumas of all kinds (considering foreign bodies and slight abrasions to concussions and perforations) are the main

Table 2
Distribution of the main diagnoses in a public service of ophthalmological emergency according to gender

Diagnostic	Gender			
	Male		Female	
	n	%	n	%
Infectious conjunctivitis	271	40.1	405	59.9
Ocular trauma	372	83.6	73	16.4
Diseases of the ocular surface	203	48.9	212	51.1
Blepharitis/meibomitis	97	40.1	145	59.9
Hordeolum	58	43.6	75	56.3

Table 3
Distribution of the main diagnoses in a public service of ophthalmological emergency according to the age group

Diagnostic	Age (years)							
	0-14		15-29		30-59		≥ 60	
	n	%	n	%	n	%	n	%
Infectious conjunctivitis	114	16.9	247	36.5	264	39.1	51	7.5
Ocular trauma	51	11.5	115	25.8	238	53.5	41	9.2
Diseases of the ocular surface	56	13.5	96	23.1	179	43.1	84	20.2
Blepharitis/meibomitis	8	3.3	35	14.5	101	41.7	98	40.5
Hordeolum	24	18,0	50	37.6	49	36.8	10	7.5

cause of demand for the ophthalmological emergency service in most of the national studies.^(1,2,4,9-11) In the present study, infectious conjunctivitis was the most prevalent diagnosis, and may be indicative of inadequacies in the ophthalmological emergency service in the region, since most cases of conjunctivitis can be managed by primary care or by non-specialist physicians.

Ocular traumas were predominantly prevalent in male adults, suggesting that this population is more vulnerable to risk factors such as labor, traffic and sports, and this population should be the main focus of preventive measures.⁽³⁾ Infectious and/or inflammatory conditions predominated among women and children.

It is noteworthy that 40% of cases of blepharitis/meibomitis occurred in elderly patients, with the second diagnosis being the most prevalent in this population. A study involving only the elderly in São Paulo showed a prevalence of ectropion (risk factor for palpebral infection/inflammation) of 2.9%, (against 0.18% in the general population).⁽¹²⁾ Cataract was the seventh reason for seeking the ophthalmological emergency service in patients >60 years (corresponding to about 5.0% of the diagnoses), indicating faults in the preferential port of entry of these patients to the public health system.

Although it is difficult to define precisely the percentage of cases not requiring care in the emergency service, it can be estimated that a significant number could be managed in the primary care network by general and/or ambulatory physicians. The majority of cases of infectious conjunctivite, for example, is benign and self-limited, being able to be approached by doctors of primary care.⁽¹³⁾ In the northeast region of Brazil, it is estimated that almost half of appointments in an ophthalmological emergency service consists of common diseases of simple treatment, and that they could be diagnosed and be treated in an ophthalmologic clinic or by general physicians.^(10,14)

The study is limited to the analysis of ophthalmologic emergency appointments in a period of 3 months, which should

be taken into account, since there may be seasonal variations in the reasons for seeking care. In addition, retrospective studies may contain data collection flaws and defects, which was tried to be minimized with the review of medical records by trained researchers, and by the fact that the diagnoses are performed by ophthalmologists of a reference center.

CONCLUSION

Infectious conjunctivitis was the main diagnosis in an ophthalmological emergency public service, with the majority of cases being manageable in primary care. Ocular trauma was very prevalent among men of economically active age, reinforcing the need for educational and inspection measures aimed at reducing morbidity and absenteeism. The present study points to the frequent inappropriate use of the ophthalmological emergency network, and provides epidemiological data for the orientation of health policies.

REFERENCES

- Vieira GM. Um mês em um pronto-socorro de oftalmologia em Brasília. *Arq Bras Oftalmol.* 2007;70(5):797-802.
- Araujo AA, Almeida DV, Araujo VM, Goes MR. Urgência oftalmológica: corpo estranho ocular ainda como principal causa. *Arq Bras Oftalmol.* 2002;65(2):223-7.
- Rocha MN, Ávila M, Isaac DL, Oliveira LL, Mendonça LS. Análise das causas de atendimento e prevalência das doenças oculares no serviço de urgência. *Rev Bras Oftalmol.* 2012; 71(6):380-4
- Andrade Sobrinho MV, Aguiar AC, Alencar LD, Binotti WW, Faria OJ. Epidemiological profile of eye diseases in an emergency center complex in Campinas, Brazil. *Vis Pan Am.* 2016;15(1):10-1.
- Pieramici DJ, Sternberg P Jr, Aaberg TM Sr, Bridges WZ Jr, Capone A Jr, Cardillo JA, et al.; The Ocular Trauma Classification Group. A system for classifying mechanical injuries of the eye (globe). *Am J Ophthalmol.* 1997;123(6):820-31.
- Adam Netto A, Rolim AP, Müller TP. Prevalência de doenças palpebrais no serviço emergencial de oftalmologia do Hospital Universitário da Universidade Federal de Santa Catarina. *ACM Arq Catar Med.* 2006;35(4):64-9.
- Pereira FB, Frasson M, D'Almeida AG, Almeida A, Faria D, Francis J, et al. Perfil da demanda e morbidade dos pacientes atendidos em centro de urgências oftalmológicas de um hospital universitário. *Rev Bras Oftalmol.* 2011;70(4):238-42.
- Cillino S, Casuccio A, Di Pace F, Pillitteri F, Cillino G. A five-year retrospective study of the epidemiological characteristics and visual outcomes of patients hospitalized for ocular trauma in a Mediterranean area. *BMC Ophthalmol.* 2008;8(1):6.
- Campos Junior JC. Perfil do atendimento oftalmológico de urgência. *Rev Bras Oftalmol.* 2004;63(2):89-91.
- Pierre Filho PT, Gomes PR, Pierre ET, Pinheiro Neto FB. Profile of ocular emergencies in a tertiary hospital from Northeast of Brazil. *Rev Bras Oftalmol.* 2010;69(1):12-7.
- Leonor AC, Dalfré JT, Moreira PB, Gaiotto Júnior OA. Emergências oftalmológicas em um hospital dia. *Rev Bras Oftalmol.* 2009;68(4):197-200.
- Romani FA. Prevalência de transtornos oculares na população de idosos residentes na cidade de Veranópolis, RS, Brasil. *Arq Bras Oftalmol.* 2005;68(5):649-55.
- Cronau H, Kankanala RR, Mauger T. Diagnosis and management of red eye in primary care. *Am Fam Physician.* 2010;81(2):137-44.
- Xiang H, Stallones L, Chen G, Smith GA. Work-related eye injuries treated in hospital emergency departments in the US. *Am J Ind Med.* 2005;48(1):57-62.

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