

# Evaluation of the care characteristics of ophthalmic emergencies in a public hospital in greater São Paulo

## *Avaliação das características do atendimento de urgências oftalmológicas em um hospital público da grande São Paulo*

Renata Prota Hussein<sup>1</sup>, Flavia Lucia Beraldi Rangel<sup>1</sup>, Hirlana Gomes Almeida<sup>2</sup>, Marina Gracia<sup>1</sup>, Jose Ricardo Rehder<sup>1</sup>, Newton Kara-Junior<sup>2</sup>

### ABSTRACT

**Purpose:** Evaluate the characteristics of patients seen in the emergency department of ophthalmology in order to identify measures to improve the effectiveness of care and guide the enhancement of other emergency services. **Methods:** Cross-sectional, observational study with 300 patients treated at the Municipal Hospital of Santo Andre - Sao Paulo from 15 to 22 august 2011. Data were collected through interviews with patients based on a questionnaire. **Results:** It was observed that 73.7% lived at a distance of up to 20 km from the hospital and 71.6% of real emergencies and 61.3% of false emergencies sought treatment within a week of the onset of symptoms. **Conclusion:** Considered the need to provide information to the population about the type and severity of ocular emergencies, with emphasis on prevention and the importance of the most prevalent diseases such as corneal foreign body and corneal ulcer, and health policies aimed at creation of regional centers of specialized care in order to minimize barriers to access and increase the speed in the treatment of ocular emergencies.

**Keywords:** Emergency service, hospital; Eye/abnormalities; Eye diseases; Questionnaires

### RESUMO

**Objetivo:** Avaliar as características dos pacientes atendidos no pronto socorro de oftalmologia, a fim de identificar medidas que melhorem a eficácia do atendimento e nortear o aprimoramento de outros serviços de urgência. **Métodos:** Estudo transversal e observacional, com 300 pacientes, atendidos no Hospital Municipal de Santo André (SP), de 15 a 22 de agosto de 2011. Os dados foram coletados por meio de avaliação clínica e de entrevistas com pacientes baseadas em um questionário. **Resultados:** Observou-se que 73,7% residiam a uma distância de até 20 km do hospital, 71,6% das urgências verdadeiras e 61,3% das urgências falsas procuraram atendimento em até uma semana do início dos sintomas. **Conclusão:** Considera-se a necessidade de disponibilizar para a população informações a respeito do tipo e da gravidade de urgências oculares, com ênfase na prevenção e na importância das doenças mais prevalentes, como corpo estranho corneano e úlcera de córnea, além de políticas de saúde direcionadas à criação de centros de atendimento especializados regionais, a fim de minimizar barreiras para acesso e aumentar a rapidez no tratamento de urgências oculares.

**Descritores:** Serviço hospitalar de emergência; Olho/anormalidades; Oftalmopatias; Questionários

<sup>1</sup> ABC Medical School, Santo André/SP, Brazil.

<sup>2</sup> Medical School of the São Paulo University, São Paulo/SP, Brazil.

The authors declare no conflict of interest.

Received for publication 04/04/2014 - Accepted for publication 29/08/2014

## INTRODUCTION

Providing proper care for ocular emergencies impacts the health and well-being of patients due to the potential risk of irreversible visual loss<sup>(1)</sup>. In many situations, the visual prognosis is related to the swiftness and effectiveness of initial treatment<sup>(2,3)</sup>.

Barriers to timely treatment include the lack of awareness about the seriousness of eye conditions and transport difficulties<sup>(3,4)</sup>.

The aim of this study was to evaluate the characteristics of patients seen in an ophthalmic emergency department in order to identify measures to increase the effectiveness of care and guide the improvement of other emergency services.

## METHODS

This was a cross-sectional, observational study of 300 patients seen at the Municipal Hospital of Santo André, São Paulo, over a typical week, from 15 to 22 August 2011. During this period, all patients attending the hospital's ophthalmic emergency service who agreed to participate were included in the study.

Subjects underwent clinical examination and were interviewed using a questionnaire. Study variables included gender, age, diagnosis, distance travelled to reach the hospital, and time elapsed between the onset of symptoms and provision of medical care.

True emergencies were defined as cases with a risk of visual impairment in the short to medium term or those requiring immediate assessment due to the severity of symptoms.

Data were processed using descriptive statistics methods; categorical variables were expressed as absolute frequencies, adopting  $p < 0.05$  to reject the null hypothesis.

The study was approved by the Research Ethics Committee of ABC Medical School.

## RESULTS

Most patients were aged 20-45 years (58%), with a predominance of males (68%).

**Table 1**

**Diagnoses of patients seen at the Municipal Hospital of Santo André from 15 to 22 August, 2011**

Diagnosis	N	%
Conjunctivitis	93	31.0
Corneal foreign body	54	18.0
Corneal ulcer	39	13.0
Trauma	30	10.0
Non-specific irritation	24	8.0
Uveitis	18	6.0
Acute glaucoma	12	4.0
Normal Examination	09	3.0
Others*	21	7.0
<b>Total</b>	<b>300</b>	<b>100.0</b>

\*Other: senile cataract, posterior vitreous detachment, retinal detachment, venous branch occlusion, ectropion, trichiasis, eye deviation, and refractive error.

Tables 1, 2 and 3 present the diagnoses, the distance travelled to reach the hospital, and the time elapsed between the onset of symptoms and provision of medical care.

**Table 2**

**Distance travelled to reach the Municipal Hospital of Santo André.**

Distance (km)	N	%
Até 10	126	42.0
10 a 20	95	31.7
20 a 50	40	13.3
50 a 100	34	11.3
>100	05	1.7
<b>Total</b>	<b>300</b>	<b>100.0</b>

**Table 3**

**Time elapsed between the onset of symptoms and provision of medical care, according to the severity of each case, among patients seen from 15 to 22 August 2011 at the Municipal Hospital of Santo André.**

Time (days)	Level of urgency (%)	
	True	False
0 a 1	40.4	38.2
2 a 6	31.2	23.1
7 a 14	11.6	12.5
15 a 30	12.7	13.2
>30	4.1	13.0
<b>Total</b>	<b>100,0</b>	<b>100,0</b>

## DISCUSSION

Ophthalmic emergencies represent an imminent risk of eye damage and should be diagnosed and treated as soon as possible in order to avoid irreversible visual loss and limitations in the quality of life of patients<sup>(3,5)</sup>.

The present work found a prevalence of male patients, similar to previous studies such as Almeida et al., which included 26,358 patients seen at the ophthalmic emergency service of the Altino Ventura Foundation<sup>(6)</sup>, and others<sup>(1,3,7-10)</sup>. This is explained by the fact that men are more susceptible to risk factors such as hazardous professions, traffic and sports.

The most prevalent age group was 20-45 years, which is in agreement with the literature<sup>(6,8,9,11,12)</sup>. This is probably explained by the fact that the economically-active population is more exposed to occupational hazards<sup>(8,9)</sup>.

The most frequent diagnosis was conjunctivitis, followed by foreign body (Table 1), also in agreement with previous studies<sup>(2,6,11-14)</sup>.

The fact that most patients (73.7%) lived near the hospital (less than 20 km away) (Table 2) was a positive finding, because easy access to health services helps meet the demand for medical care, providing early diagnosis and treatment and a better follow-up, thus improving the visual prognosis. This is in contrast with a study conducted in the city of Campinas, where most patients

(71.0%) needed to travel for more than 20 km in order to receive medical care<sup>(3)</sup>. It should be noted that the Municipal Hospital of Santo André is open 24 hours a day and restricts spontaneous demand from patients living in other municipalities. Thus, our results suggest that the availability of specialised care contributes to reducing the transport difficulties of patients with ocular emergencies in the region, facilitating access and improving the response capacity of the health unit.

For 71.6% of true emergencies and 61.3% of false emergencies, the time elapsed between the onset of symptoms and the provision of medical care was less a week (Table 3), a higher proportion than in the Campinas region (55.6% for real emergencies and 53.8% for false emergencies)<sup>(3)</sup>. This finding suggests that the shorter average distance to the hospital contributed to reducing the time until provision of medical care.

The results also suggest that there is little awareness about the severity of symptoms, as in 28.4% of real emergencies, where early treatment could influence the final visual result, the time elapsed until provision medical care was more than a week, similar to false emergencies (38.7%). This probably indicates that, in general, the severity of symptoms did not determine how quickly patients sought medical care.

Thus, the results of this study suggest the need to raise awareness about the types and severity of ocular emergencies among the local population, stressing prevention and the importance of prevalent diseases such as corneal foreign body, corneal ulcer, and ocular trauma. This study has also illustrated the benefits of providing specialised care at the regional level, thus reducing the distance to medical services, an initiative that would be highly effective if widely implemented.

## REFERENCES

- Vieira GM. Um mês em um pronto-socorro de oftalmologia em Brasília. *Arq Bras Oftalmol.* 2007;70(5):797-802.
- Carvalho RS, Kara-José N. Ophthalmology emergency room at the University of São Paulo general hospital: a tertiary hospital providing primary and secondary level care. *Clinics(São Paulo).* 2007;62(3):301-8
- Kara-Júnior N, Zanato MC, Vilaça VT, Nagamati LT, Kara-José N. Aspectos médicos e sociais no atendimento oftalmológico de urgência. *Arq Bras Oftalmol* 2001;64(1):39-43.
- May DR, Kuhn FP, Mornis RE, Witherspoon CD, Danis RP, Matthews GP, et al. The epidemiology of serious eye injuries from the United States. *Eye Injury Registry. Graefe's Arch Clin Exp Ophthalmol.* 2000;238(2):153-7.
- Almeida HG, Fernandes VB, Lucena AC, Kara-Junior N. Avaliação das urgências oftalmológicas em um hospital público de referência em Pernambuco, Brasil. *Rev Bras Oftalmol.* 2014. In press.
- 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.
- Araújo AA, Almeida DV, Araújo VM, Góes MR. Urgência oftalmológica: corpo estranho ocular ainda como principal causa. *Arq Bras Oftalmol.* 2002;65:223-7.
- Leonor AC, Dalfré JT, Moreira PB, Gaiotto Júnior AO. Emergências oftalmológicas em um hospital dia. *Rev Bras Oftalmol.* 2009;68(4):197-200.
- Carvalho RS, Kara-José N, Kara-Júnior N. Post-visit at ophthalmology emergency service: frequency and perception of the doctors on duty and users. *Arq Bras Oftalmol.* 2010;73(5): 423-7.
- Layaun SE, Schor P, Rodrigues ML. Perfil da demanda de um serviço de oftalmologia em uma unidade de emergência. *Rev Bras Oftalmol.* 1992;51(3):171-3.
- Campos Jr JC. Perfil do atendimento oftalmológico de urgência. *Rev Bras Oftalmol.* 2004;63(2): 89-91.
- MardonesSaavedra C, Salinas Chau A. Análisis epidemiológico de las consultas oftalmológicas en el servicio de urgencia del hospital 21 de mayo de Taltal. *Arch Chil Oftalmol.* 2011;66(1):15-9.
- Vania IL, Tamara MT. Caracterización de las urgencias oftalmológicas en el Hospital José Joaquín Aguirre. *Rev Hosp Clín Univ Chile.* 2009;20(2):97-102.
- Jones NP, Hayward JM, Khaw PT, Claoué CM, Elkington AR. Function of the ophthalmic: "accident and emergency" department: results of a six month survey. *Br Med J (Clin Res Ed).* 1986 Jan 18;292(6514):188-90.

### Corresponding author:

Hirlana Gomes Almeida  
 Rua dos Médicos, nº 30, apto. 903 – CEP: 50070-290 – Recife/  
 PE, Brazil  
 Tel: +5581 30491907  
 E-mail: hirlanaa@hotmail.com