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# Ocular Related Emergencies in Zagreb University Hospital Centre – Ten Month Analysis

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## ABSTRACT

*To determine number, demographic characteristics and presenting symptoms of patients admitted to Emergency ophthalmologic department of Zagreb University hospital centre. Prospective analysis of data of 743 patients admitted to Emergency ophthalmologic department of University hospital centre Zagreb during period of 10 month. Main presenting symptoms at admission were red eye, pain and foreign body sensation. 64% of all patients admitted to emergency unit were male. Almost 40% of them were between 20 and 40 years of age. In female population majority is between 50 and 60 years old (19.33%). The study shows that the most frequent reason for admission in emergency ophthalmic unit is red eye, pain and foreign body sensation. These symptoms were present most frequently in young male patients. Considering fact of their working ability, data can suggest that they don't comply with occupational safety measures. Further research in this direction is needed.*

**Key words:** emergency ophthalmologic department, presenting symptoms, gender analysis, Croatia

## Introduction

According to different studies, eye related complaints compose form 1 to 6% of all complaints referring to general emergency ward<sup>1–3</sup>. Acute eye conditions are also frequent and represent significant proportion of workload in Department of Emergency Medicine in Zagreb University Hospital centre. Several municipalities of Zagreb and the surrounding area with approximately 560 000 people plus patients from other parts of Croatia regardless of place of residence gravitate to Emergency ophthalmology unit<sup>4</sup>. The Emergency department provides a 24-hour, 7 days-a-week dedicated eye care with no required referral from primary care. Patients are examined in the order of their arrival and by severity of their presented symptoms. Ophthalmology unit is staffed with two doctors, one resident of ophthalmology and one senior ophthalmologist, and one nurse. The unit has access to various different emergency departments and services, such as the laboratory, operating theaters and radiology examinations.

May et al. showed that 85% of patients admitted to Emergency ophthalmic unit are less than 30 years old<sup>5</sup>. Jafari et al. reported in their study 75.6% of males and majority of patients were in their third decade of life<sup>6</sup>.

Alotaibi et al. reported mean age of 28.2 and total of 61% male patients in their study<sup>7</sup>.

According to our knowledge, there is no study in Croatia which shows demographics data and patterns of clinical presentations of symptoms in emergency ophthalmologic department. In our study we aimed to establish the patients' demographics data, symptoms and to analyze possible statistically significant difference according gender and age distribution.

## Methods

Data of 743 patients admitted in the Department of Emergency Medicine in Zagreb University Hospital Centre from July 2011 to April 2012 were collected. All patients were examined by the same resident of ophthalmology during his 24-hours shifts. It represents 14% of all patients treated in Emergency ophthalmic unit during that period of time. Demographic data and major symptoms which caused patient arrival to emergency unit were noted. Patients who were referred to emergency eye unit for regular control during non working days of their ophthalmic provider were excluded.

Statistical analysis was performed in SPSS version 17.0 for Windows. Basic descriptive statistics were calculated on all data collected. Obtained values are reported as mean±standard deviation or as frequencies (n) and percentages (%). Normal distribution of continuous variable was tested using the Kolmogorov-Smirnov test. Difference in age between men and women was examined by calculating chi-square test. All tests were two-tailed and a  $p < 0.05$  was considered statistically significant.

## Results

743 patients were included in our study. The age distribution was between 0 and 92 years with mean age  $43 \pm 21.02$ . (Figure 1).

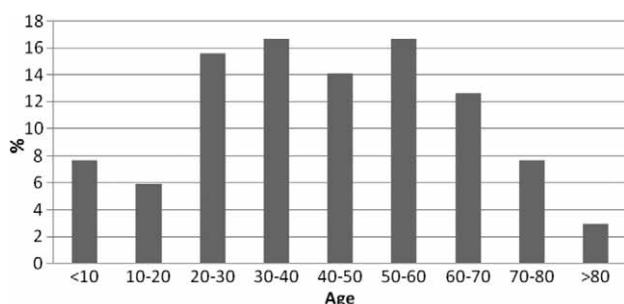


Fig. 1. Overall age distribution.

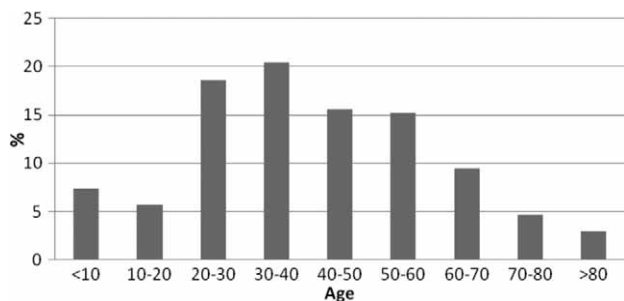


Fig. 2. Men age distribution.

Four-hundred and seventy four patients (64%) were male and two-hundred sixty nine (36%) female. Males were significantly younger than females, with mean age in males  $40.89 \pm 19.65$  and females  $47.58 \pm 22.64$  ( $p < 0.001$ ). (Figures 2 and 3).

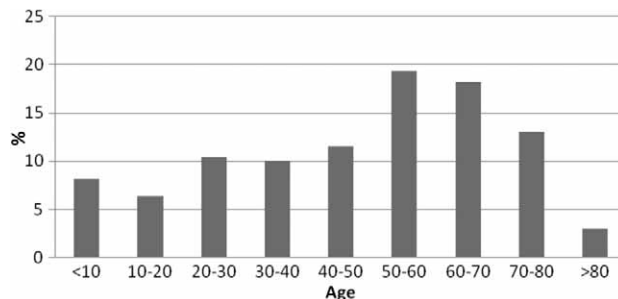


Fig. 3. Women age distribution.

Presenting symptoms are listed in Table 1. Red eye was the most common symptom ( $n=185$ ; 24.76%) of overall examined population. Foreign body sensation was the most common reason for attendance to emergency unit in male population ( $n=129$ ; 27.22%), followed by red eye ( $n=123$ ; 25.95%) and pain ( $n=103$ ; 21.73%). All other symptoms occur in 119 patients (25.10%). Pain in the eye was the main presenting symptom in female population ( $n=65$ ; 24.16%). Slightly smaller percentage reported red eye ( $n=62$ ; 23.05%), while vision disturbances were present in 46 patients (17.11%).

## Discussion

Aim of this, first prospective study in Croatia, was to analyze symptoms presented in patients in emergency ophthalmic unit. We collected data of 743 patients admitted in the Department of Emergency Medicine in Zagreb University Hospital Centre from July 2011 to April 2012.

TABLE 1  
PRESENTING SYMPTOMS AT EMERGENCY OPHTHALMIC DEPARTMENT

Symptoms	Men	Women	Overall
	N (%)	N (%)	N (%)
Red eye	123 (25.95)	62 (23.05)	184 (24.76)
Pain	103 (21.73)	65 (24.16)	169 (22.75)
Foreign body sensation	129 (27.22)	30 (11.15)	159 (21.41)
Visual disturbances	52 (10.97)	46 (17.11)	98 (13.19)
Burning	48 (10.13)	13 (4.83)	61 (8.21)
Swelling	10 (2.11)	30 (11.15)	40 (5.38)
Watery eye	3 (0.63)	13 (4.83)	16 (2.15)
Itching	3 (0.63)	7 (2.60)	10 (1.35)
Diplopia	3 (0.63)	0 (0)	3 (0.40)
Headache	0 (0)	3 (1.12)	3 (0.40)

Majority of patients admitted in emergency unit (64%) were male, which is consistent with data presented in Jafari's and Alotaibi's studies<sup>6,7</sup>, since Perumal et al did not find statistically significant difference between genders<sup>9</sup>.

According to last census from 2011, in Croatia live almost same number of men and women<sup>8</sup>. Ratio in favor of admitted males in this study could possibly be explained by the higher risk of eye injury in men as shown in previous studies<sup>10,11</sup>.

Our study shows that the most frequent reason for admission in emergency ophthalmic unit was red eye, pain and foreign body sensation, while Perumal et al. referred pain, red eye and reduced vision as main presenting symptoms<sup>9</sup>.

Considering fact of their working ability, data can suggest that majority of admitted patients don't comply with occupational safety measures. Further research in this direction is needed.

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## OFTALMOLOŠKA HITNA STANJA U KLINIČKOM BOLNIČKOM CENTRU ZAGREB – DESETMJESEČNA ANALIZA

### SAŽETAK

Utvrditi broj, demografske karakteristike i prezentirajuće simptome bolesnika primljenih u hitnu oftalmološku ambulantu KBC Zagreb. Prospektivna analiza podataka 743 bolesnika primljenih u hitnu oftalmološku ambulantu KBC Zagreb tijekom razdoblja od 10 mjeseci. Najčešći simptomi kod prijema su bile crvene oči, bol i osjećaj stranoga tijela. 64% svih bolesnika primljenih u hitnu jedinicu su bili muškarci. Gotovo 40% njih su bili između 20 i 40 godina života. U ženskoj populaciji većina je između 50 i 60 godina (19,33%). Studija pokazuje da su najčešći razlozi dolaska u hitnu oftalmološku ambulantu crvene oči, bol i osjećaj stranoga tijela. Ovi simptomi su bili prisutni najčešće u mladih muških bolesnika. Uzevši u obzir njihovu radnu sposobnost, dobiveni podatci mogu ukazati da se ne pridržavaju mjera sigurnosti na radu. Daljnja istraživanja u tom smjeru su potrebna.