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The impact of COVID-19 pandemic on ophthalmological emergency department visits

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doi: 10.1111/aos.14489

Editor,

The novel coronavirus (2019-nCoV) appeared in the Chinese city of Wuhan and precipitously extended across the globe. On the evening of 9 March 2020, the Italian Government ordered a national lockdown to limit social interactions and contain the spread of the infection. As evident in other epidemics, peoples’

fear of infection may affect their utilization patterns of health services and reduce the access to health care (Chang et al. 2004). We have previously noted a significant change in the trends of eye injuries since the beginning of the lockdown (Pellegrini et al. 2020). Herein, we aimed to assess the influence of COVID-19 on ophthalmological emergency department visits.

We reviewed the charts of all patients presenting to the ophthalmological emergency department of the S.Orsola-Malpighi University Hospital (Bologna, Italy) during 6 weeks of national lockdown (from March 10 to 20 April 2020), and compared them with those of the same period of the previous year. Retrieved data included patients’ demographics, diagnosis and need for hospital admission. Diagnoses were categorized as unlikely to be emergent, likely to be emergent, and not determined, as previously described (Channa et al. 2016).

The total number of ophthalmological emergency department visits during the 2019 study period was 2902 and decreased to 776 in the 2020 study

period. Mean age of patients increased from 50.6 ± 22.6 to 53.2 ± 20.5 years ($p = 0.003$, Student’s *t*-test), and the proportion of children and adolescents decreased (from 10% to 5.3%). The percentage of males increased from 50.9% to 55.7% ($p = 0.017$, chi-squared test). The conditions diagnosed in the two study periods are reported in Table 1. In the 2020 study period, the percentage of possibly emergent diagnoses increased (from 30.7% to 38.1%), while unlikely to be emergent diagnoses decreased (from 65.9% to 57.3%; $p < 0.001$, chi-squared test). Patients requiring hospital admission were 27 in the 2019 study period (the indication was retinal detachment in 22 cases, open globe injury in two, corneal ulcer in one, angle closure glaucoma in one, and anterior migration of intravitreal dexamethasone implant in one) and nine in the 2020 study period (retinal detachment in eight cases and open globe injury in one).

During 6 weeks of national lockdown for COVID-19, there was a 73% decrease in the number of

Table 1. Ophthalmological emergency department diagnoses in the 2019 study period (from March 10 to 20 April 2019) and 2020 study period (from March 10 to 20 April 2020).

Diagnosis	2019 period	2020 period
Unlikely to be emergent, No. (%)		
Conjunctivitis	812 (28.0)	148 (19.1)
Hordeolum, chalazion, dermatitis	313 (10.8)	65 (8.4)
Subconjunctival haemorrhage	204 (7.0)	28 (3.6)
Dry eye disease	177 (6.1)	49 (6.3)
Posterior vitreous detachment	170 (5.9)	70 (9.0)
Other visual disturbances	91 (3.1)	36 (4.6)
Retinopathy	66 (2.3)	28 (3.6)
Entropion, ectropion, trichiasis	38 (1.3)	11 (1.4)
Cataract	21 (0.7)	5 (0.6)
Epiphora	19 (0.7)	5 (0.6)
Possibly emergent, No. (%)		
Foreign body on external eye	229 (7.9)	79 (10.2)
Corneal abrasion	217 (7.5)	76 (9.8)
Keratitis	115 (4.0)	32 (4.1)
Contusion of eyeball	99 (3.4)	23 (3.0)
Ocular hypertension	46 (1.6)	19 (2.4)
Uveitis	31 (1.1)	12 (1.5)
Corneal ulcer	27 (0.9)	6 (0.8)
Retinal detachment	22 (0.8)	8 (1.0)
Retinal break	22 (0.8)	8 (1.0)
Cranial nerve palsy	21 (0.7)	12 (1.5)
Retinal vascular occlusion	17 (0.6)	5 (0.6)
Vitreous haemorrhage	15 (0.5)	4 (0.5)
Eyelid laceration	15 (0.5)	3 (0.4)
Optic neuropathy	14 (0.5)	8 (1.0)
Open globe injury	2 (0.1)	1 (0.1)
Not determined, No. (%)		
Surgery-related problems	22 (0.8)	11 (1.4)
Other	77 (2.7)	24 (3.1)
Total	2902	776

ophthalmological emergency department visits compared to the same period of the previous year. This may be at least partially due to the measures applied during the lockdown. For instance, social distancing and school closure may limit the spread of infectious conjunctivitis, particularly among children and adolescents. In addition, many patients may choose to manage nonurgent conditions by themselves or through remote communication (e.g. via telephone or video) with their ophthalmologists. Therefore, it is understandable that the percentage of nonemergent diagnoses decreased. However, there was a substantial reduction also of potentially serious conditions, including those requiring urgent surgery such as retinal detachment. This may reflect the patients' reticence towards risking coronavirus exposure in healthcare settings, as reported anecdotally even for life-threatening conditions such as myocardial infarction (Krumholz 2020). In agreement with this, a recent study documented a substantial decrease in

paediatric emergency department visits across five Italian hospitals during the lockdown. In some cases, delayed access to hospital care due to the fear of infection resulted in intensive care unit admission or even death (Lazzerini et al. 2020). The reduced access to health care represents a serious public health concern, and patients with urgent ophthalmological conditions avoiding specialized treatment are at high risk of permanent vision loss. Therefore, it is essential to inform patients on the importance of not delaying needed ophthalmological treatment.

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