Changing trends of ocular trauma in the time of COVID-19 pandemic

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Conflict of Interest: The authors declare no conflict of interest.

Dear Editor,

To reduce the spread of the novel coronavirus (2019-nCoV), countries have promoted a range of unprecedented public health responses. These measures aim at reducing the final size of the epidemic as well as its peak in order to decrease the acute pressure on the health-care system.[1] In Italy, the government ordered people to stay home, restricting movements with the exception of work, urgent matters and health reasons. Furthermore, all commercial and productive activities, except those providing essential services, were obligated to remain closed.[2]

Ocular trauma represents a serious public health problem and leading cause of visual impairment.[3,4] The COVID-19 social distancing measures might have a significant impact on the risk of ocular trauma. In this study, we retrospectively reviewed the charts of all patients presenting to an Italian ophthalmological emergency department (the Ophthalmology Unit of the S.Orsola-Malpighi University Hospital in Bologna) to identify all eye injuries. Data were analysed from 10th March 2020 (i.e. the day in which the quarantine measures were applied in our city) to 10th April 2020, and confronted with those of the same period of the previous year (from 10th March 2019 to 10th April 2019).

In the 2019 study period, there were 354 eye injuries (15.6% of all patients presenting to the emergency department). In the 2020 study period, eye injuries decreased to 112 (19.9% of all patients). The characteristics of eye injuries in the two study periods are reported in Table 1. During quarantine, the proportion of children and adolescents with eye injuries decreased (from 14.7% to 8.0%, Figure 1A), while the proportion of males increased (from 66.7% to 75.0%, Figure 1B). Regarding the mechanisms of injury, the percentage of falls and sport injuries had the highest decrease (respectively, from 6.5% to 0.9% and from 5.9% to 2.7%), while injuries during home activities and injuries with plants had the highest increase (respectively, from 12.4% to 17.0% and from 8.5% to 10.7%, Figure 1C). The percentage of minor injuries with low risk of vision loss

increased (from 93.2% to 94.6%), while major injuries requiring monitoring decreased (from 6.8% to 5.4%, Figure 1D).

There was a striking 68.4% decrease in the number of eye injuries seen in our Unit during the last month. Behavioural changes during the quarantine could be associated with lower risk of trauma. The decreases of sport injuries and of injuries in children during school closure seem to support this hypothesis. However, the drop of patients seeking emergency care affected all injuries, including serious ones potentially associated with vision loss. We believe that some patients may intentionally avoid urgent care rather than risking coronavirus exposure at hospitals. Anecdotal reports suggest that this is also happening for life-threatening medical emergencies such as myocardial infarction and stroke.[5,6] Since ocular trauma is a major cause of vision loss, the importance of not delaying or avoiding treatment should be stressed to all patients to prevent ocular morbidities.

Conflict of Interest: The authors declare no conflict of interest.

Acknowledgements: None.

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Figure legends

Figure 1: Number of eye injuries in the 2019 study period (from 10th March 2019 to 10th April, 2019) and 2020 study period (from 10th March 2020 to 10th April 2020) according to categories of age (**A**), sex (**B**), mechanism of trauma (**C**) and minor/major injuries (**D**).

Table legends

Table 1. Characteristics of eye injuries in the 2019 study period (from 10th March 2019 to 10th April, 2019) and 2020 study period (from 10th March 2020 to 10th April 2020).