



LETTER TO THE EDITOR

Clin Exp Ocul Trauma Infect. 2020; 2(2): 49-50

Glaucoma and Possible Risks During SARS-CoV-2 Pandemic

 **Mehmet Murat Uzel, M.D**

Balikesir University School of Medicine, Department of Ophthalmology, Balikesir, Turkey

Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic has led to a rapid change worldwide. In ophthalmological examination, it was stated that the risk of virus transmission is high. For this reason, special protective equipment had to be put into use. In addition, proper sterilization of the instruments used in the examination and reorganization of the waiting room have gained importance. Nevertheless, it is recommended to postpone routine eye examinations except in emergencies. Glaucoma is a disease managed in the light of the findings obtained during routine examinations. Prolonged pandemic process may lead to irreversible optic nerve damage in patient groups that move away from routine examination.

In December 2019, the first severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) case was reported in Wuhan, China, and spread rapidly to all continents. As of 18 April 2020, 2,264,628 people were affected by this pandemic, which is also called the 2019 new coronavirus disease (COVID-19).⁽¹⁾ It was ignored at the beginning of the pandemic that the virus can be found in tears and eye secretions. After the publication of reports showing that health workers working without eye protection were infected with the virus, eye protective glasses and masks were started to be used. Also Dr. Li Wenliang,

34-year-old ophthalmologist, was infected by an asymptomatic glaucoma patient and died. This is one of the most important indicators that ophthalmologists are in the risky group.

Studies on the detection of SARS-CoV-2 in tears and eye secretions have been carried out. Xia et al. showed RT-PCR positivity in 1 patient in 30 SARS-CoV-2 patients in their tears and conjunctival secretions.⁽²⁾ Seah et al. did not encounter the virus in the tear samples of 17 patients.^{83,9} In their study, Wu et al. showed that 31.6% of COVID positive patients had conjunctivitis.⁽⁴⁾ In addition, virus was detected in conjunctival samples of 2 patients. They stated that patients with ocular symptoms experienced more severe disease than those without. There is also a case showing that COVID-19 started as keratoconjunctivitis. These studies warn about taking all necessary precautions by evaluating all patients as positive during eye examination.

Glaucoma is the leading cause of irreversible blindness. It is foreseen that there will be 111 million glaucoma patients in the world in 2040.⁽⁵⁾ This disease is managed by determining the target intraocular pressure as a result of various tests in regular follow-ups. Ophthalmic devices used in glaucoma management are risky to encounter the virus by both patients

Corresponding author: Mehmet Murat UZEL Address: Balikesir University School of Medicine, Balikesir, Turkey.
Phone: +902666121461 Fax: +902666121459 E-mail: drmuratuzel@yahoo.com

and healthcare professionals. Measurement of intraocular pressure during pandemic is a procedure to be considered in terms of transmission risk. Pneumo-tonometer is not recommended as it may cause droplet scattering.(6) If single-use tips are available, the use of Tono-pen seems to be the most appropriate method. Sterilization of the tips and applanation tonometer with 70% alcohol is also effective. In addition, 10% diluted sodium hypochlorite can be used to sterilize intraocular pressure monitoring devices. In addition, similar cleaning procedures should be made during visual field device, optical coherence tomography and biomicroscope use. Outpatient intensity is another risk factor to be considered. Lack of appropriate protective equipment and non-compliance with the social distance rule may increase the risk of glaucoma patients becoming infected.

World Health Organization, European Glaucoma Society and American Academy of Ophthalmology recommends postponing routine eye exams, except for emergencies. However, there are no clear boundaries between emergency and routine, especially with regard to glaucoma. Intraocular pressure increase in glaucoma is largely asymptomatic. Also, vision loss progresses very slowly. In line with the current recommendations, glaucoma patients are not considered urgently and their follow-up is disrupted. Therefore, it can be predicted that the number of patients with irreversible optic nerve damage will increase with the prolongation of the pandemic process. Performing routine examinations of glaucoma patients without causing polyclinic intensity is essential to prevent progression that may result in irreversible blindness. It is important for all patients to perform triage procedures, especially as soon as they enter the hospital. However, it should be kept in mind that there may also be asymptomatic patients. Telemedicine can also be used in the follow-up of glaucoma patients. Thanks to the development and functionality of artificial intelligence technology, visual field and oct images can be accurately evaluated without manpower. In this way, outpatient intensity can be reduced. In non-medical professions, it is easier to implement the distant work model, but some groups of patients will be remotely diagnosed and followed with artificial intelligence and telemedicine. Consequently, it is important to start routine examinations of glaucoma patients as soon as possible in accordance with the new world order.

References

- 1) World Health Organization. <https://www.who.int/emergencies/diseases/novel-corona-virus-2019>
- 2) Xia J, Tong J, Liu M, Shen Y, Guo D. Evaluation of coronavirus in tears and conjunctival secretions of patients with SARS-CoV-2 infection. *J Med Virol.* 2020;92:589-94.
- 3) Seah IYJ, Anderson DE, Kang AEZ, Wang L, Rao P, Young BE et al. Assessing viral Shedding and infectivity of tears in coronavirus disease 2019 (COVID-19) patients. *Ophthalmology.* 2020;127:977-9.
- 4) Wu P, Duan F, Luo C, Liu Q, Qu, X, Liang L et al. Characteristics of ocular findings of patients with coronavirus disease 2019 (COVID-19) in Hubei province, China. *JAMA Ophthalmol.* 2020;138:575-8.
- 5) Tham YC, Li X, Wong TY, Quigley HA, Aung T, Cheng CY. Global prevalence of glaucoma and projections of glaucoma burden through 2040: a systematic review and meta-analysis. *Ophthalmology.* 2014;121:208-90.
- 6) Li C, Tang Y, Chen Z, Wang A, Huang X, Chen Y, et al. Aerosol formation during non-contact "air-puff" tonometry and its significance for prevention of COVID-19. *Chin J Exp Ophthalmol.* 2020;38:212-6.