



Keeping an eye on the many symptoms of COVID-19

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Dear Editor,

As of February 2021, coronavirus disease 2019 (COVID-19) has been proven to affect the world of ophthalmology in multiple dimensions such as examination, surgery, and treatment processes [1, 2]. Relatively within a short period, many articles provided information regarding preventive measures during examination and ophthalmological implications of COVID-19 [1]. Hyperemia, epiphora, photophobia, and foreign body sensations were the first reported ocular symptoms and findings associated with COVID-19 [3, 4]. Following reports showed the presence of novel severe acute respiratory syndrome coronavirus (SARS Cov-2) in the ocular surface and revealed the direct link of COVID-19 [5]. Conflicting results have been reported regarding association of ocular symptom severity and clinical approach of COVID-19.

First, ophthalmologic reports were limited to the ocular surface; however, uveitis, chorioretinitis, retinal vascular occlusion, retinal microangiopathy, optic neuritis, diplopia, and cranial nerve palsies were reported as the pandemic continued [6, 7]. While academic research has shown much evidence about COVID-19's ocular involvement, some critical questions still remain unanswered. Even in cases where COVID-19 appears to be the only possible etiological factor in patients, the available literature has not been able to describe these findings are directly related to COVID-19 or developed due to systemic complications of COVID-19. Promising results have been reported regarding the existence of SARS Cov-2 nucleic acid in the retina, vitreous, and aqueous humor in postmortem investigations; however, existence of complete

SARS Cov-2 body and its infectivity in the ocular structures are still unknown [8, 9].

In the light of the current literature, assuming COVID-19 as an etiologic factor for ocular disorders without significant proof may cause misdiagnosis and inappropriate treatment. In this case, it would be wise to consider COVID-19 as the underlying factor after ruling out all other possible etiological factors characterized by a similar clinical presentation.

Recently, new mutations of SARS Cov-2 have been announced, and new SARS CoV-2 variants are hypothesized to increase transmissibility [10]. Current literature does not provide information whether new mutations can chance the affinity of SARS Cov-2 to bind to the ocular structures, course of the ocular involvement, or the prevalence of ocular symptoms.

On the other hand, the effectiveness and protection of a global vaccination is still a controversial issue. The impact of vaccination on ocular symptoms and signs will be an attractive topic for future clinical studies. A large proportion of the population should be vaccinated to reliably assess the effect of vaccination on ocular symptoms.

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Declarations

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