

## Ophthalmovigilance in Covid-19: Two Years Experience

**Marianne L Shahsuvaryan\***

*Department of Ophthalmology, Yerevan State Medical University, Yerevan, Armenia*

**\*Corresponding Author:** Marianne L Shahsuvaryan, Department of Ophthalmology, Yerevan State Medical University, Yerevan, Armenia.

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On the 30<sup>th</sup> of January, 2020 the World Health Organization (WHO) has announced “the outbreak of novel coronavirus (2019-nCoV) a public health emergency of international concern (PHEIC)” [1]. After 2 years mankind still faces a growing cases and is on the way to overcome this challenge.

Remembering Dr. Li Wenliang, the ophthalmologist from China, who was the first professional victim of COVID-19 contaminated from an asymptomatic glaucoma patient [2], it should be borne in mind, that ophthalmologists are among the first-line medical professionals due to a patient-to-ophthalmologist transmission.

Conjunctivitis was diagnosed in the national expert on pneumonia during an inspection of Wuhan, China, tested positively for the SARS-CoV-2 [3]. This was quite concerning, given the fact that the eye could be an entrance gate for novel coronavirus [4,5].

Taking this into account the international researchers have initiated multiple studies evaluating the eye involvement and ocular manifestations of COVID-19 and estimated 2 - 60% prevalence of ocular abnormalities [6,7] preceding systemic symptoms [8] by 3 hours to 5 days in 13% of patients [9].

The general consensus is that the most common ocular manifestation of COVID illness is the conjunctivitis documented in up to 88.8% of cases [9-12].

Conjunctivitis could manifest in asymptomatic patients [13], but at the same time it was shown that hospitalized COVID-19 patients with conjunctivitis, more frequently require treatment in the Intensive Care Unit, indicating the conjunctivitis as a negative prognostic sign [14].

The patients could also suffer from dry eyes [15]. Less frequent COVID related anterior segment findings based on pooled prevalence [12] are pingueculitis (1.1%), hordeolum (2.2%), keratoconjunctivitis (2.2%), keratitis (2.2%), episcleritis (2.2%).

The latest study confirms that COVID-19 infection may affect the cornea and anterior segment [16], also causing a corneal graft rejection [17,18].

It is well documented that COVID-19 has an impact on the posterior segment of the eye [19-23] and in particular on the retina, most commonly manifested as central serous retinopathy, paracentral acute middle maculopathy, acute macular neuroretinopathy, panuveitis, multi-focal retinitis, necrotizing retinitis, ischemic optic neuropathy, optic neuritis, optic atrophy, retinal artery or retinal vein occlusions, papillophlebitis.

Currently available evidences highlight that COVID-19 illness has a wide ophthalmic landscape. It could manifest initially by different ocular symptoms, causing nonspecific alterations in the anterior and/or posterior segment of the eye. At the same time the ocular disor-

ders could accompany the systemic findings, especially in severe illness cases, or could be diagnosed in patients successfully recovered from this viral disease. This is quite concerning and mandates awareness on the matter, given the fact that ophthalmologists and eye health teams work in close proximity to their patients as part of the eye examinations and treatment, and thus they are at particularly high risk of being exposed to the virus and contracting COVID-19. Ophthalmovigilance is critical to protect aforementioned medical professionals and prevent the rapid spread of coronavirus.

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