Short Communication

## Dry eye: The side effect of COVID pandemic

## Gunvanti Rathod<sup>1</sup>, Pragnesh Parmar<sup>2\*</sup>, Alpeshkumar Maru<sup>3</sup>

<sup>1</sup>Additional Professor, Department of Pathology and Lab Medicine, All India Institute of Medical Sciences (AIIMS), Bibinagar, Hyderabad, Telangana, India

<sup>2</sup>Additional Professor and HOD, Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences (AIIMS), Bibinagar, Hyderabad, Telangana, India

<sup>3</sup>Associate Professor, Department of Pathology, Dr N D Desai Faculty of Medical Science and Research, Nadiad, Gujarat, India

\*Corresponding author email: drprag@gmail.com



Covid 19 pandemic has changed the lifestyle of all of us in major aspects. No other disease has such a heavy toll on human being since last 2 decades. During this pandemic people around the world used various safety measures to protect themselves from COVID 19 infection e.g. face mask, social distancing, hand wash, respiratory hygiene in the form of steam inhalation, hot water gargling etc. Use of face mask is the most useful tool to limit the COVID 19 pandemic in the community and to avoid gathering almost all teaching institute and work places had used virtual platform during the COVID 19 pandemic period [1, 2]. However, general population need to be aware that face mask with prolong use of digital devices is giving rise to increased reports of dry eyes in a large number of patients. In our community, we have seen a marked increase in dry eye symptoms among regular mask users at multiple local clinics. This group includes all

those who have never previously suffered from dry eyes. Individuals using masks regularly for long duration appear more likely to have symptoms. This group includes the elderly, immune compromised and clinical personnel e.g. nursing officers, doctors, laboratory technicians, ward attendants who wear masks almost fulltime.

There are many hypotheses for the basic mechanism of dry eye caused with use of mask. The majority of persons described an awareness of air blowing upward from the mask into their eyes. This increased airflow likely accelerates the evaporation of the tear film which, when continuous for hours or days, may result in ocular surface irritation or inflammation. In addition to air convection, other factors are also likely to play role e.g. duration of wearing mask, quality of mask and many more. While worldwide mask use in public places is important during the current pandemic to reduce disease transmission through the mouth and nose, the unprotected eye remains a exposed path of infection. This pathway may be further compromised by irritation from the mask use. The tear film is a crucial barrier against pathogenic invasion but may be compromised if mask use causes this barrier to evaporate faster [3]. Uneasiness from dry eyes may also increase eye rubbing and face touching behaviors, with attendant fomite transmission [4]. All of these factors together create an increased concern for ocular infections secondary to prolonged mask wear. This risk is chiefly troublesome during the current pandemic due to a well-documented possibility of the novel corona virus spreading through contact with the eye [3, 5, 6].

As precautionary measures of COVID 19 it is everyone's responsibility to wear a mask when going out at public places. Furthermore use of masks combined with prolonged screen time due to the easy availability of smart phone and cheap data plans in India, maybe a contributing factor to an epidemic of dry eye diseases in near future. Over 50 crore Indians are now using smart phones, a 15% increase from 2018. Factors like availability of good quality affordable smart phones, expansion of online as well as offline channels, expansion of 4G/LTE networks by the operators, excessive uses of social media [7] are among the key reasons driving the smart phone user growth and most of these users are spending at least 6-8 hours on phone each day. Because of all this factors, the incidence of dry eye will increase extremely. This will be the major health concern all over the world even more than heart disease or diabetes. There is strong need to educate general population for wearing mask properly and taking care of eyes.

We should be aware of this new entity of mask associated dry eye (MADE) [8, 9] and educate patients to wear the masks properly, such that exhaled air is not forced over the eyes, while also taking care to continue to encourage the widespread use of masks. We must ensure that a face mask is worn appropriately, particularly with spectacles or sunglasses. A carefully taped top edge on the nose may be helpful to diminish the symptoms. It is essential to limit time in airconditioned environments, take regular breaks from digital devices by following the 20:20:20 rule to reduce the digital eye strain.

## References

- 1. Rathod G, Parmar P. E Learning: A Boon of COVID Era. Acta Scientific Cancer Biology, 2021; 5(12): 15-16.
- Rathod G, Parmar P. E-learning in medical education during COVID era. D Y Patil J Health Sci., 2021; 9: 39-40.
- 3. Sun C, Wang Y, Liu G, Liu Z. Role of the eye in transmitting human corona virus: what we know and what we do not know. Front Public Health, 2020; 8: 155.
- 4. Lazzarino AI. Rapid response to: face masks for the public during the covid-19 crisis. BMJ, 2020; 369: m1435.
- 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: 575–578.
- Olivia Li J-P, Shun Chiu Lam D, Chen Y, Shu Wei Ting D. Novel corona virus disease 2019 (COVID19): the importance of recognizing possible early ocular manifestation and using protective eyewear, 2020; 104(3).
- 7. Pragnesh Parmar, Gunvanti Rathod. Current trends of social media in medical education. IAIM, 2021; 8(3): 55-56.
- Moshirfar M, West WB, Marx DP. Face mask associated ocular irritation and dryness. Ophthalmol Ther., 2020; 9: 397-400.
- Practitioners Should Be Aware of Mask Associated Dry Eye (MADE). Available from: https://eyewire.news/articles/ core-alerts-practitioners-to-mask-associat ed-dry-eye-made/. [Last accessed on 2020 Nov 18].