Guest Editorial

COVID-19 prophylaxis in ophthalmology

SARS COVID-19 is a potentially lethal viral infection transmitted from the mouth, nose and eyes of infected patients. Ophthalmologists have died of this disease.[1] For eye care specialists, the new normal includes asking our patients to wear a mask, gloves and to stay at least 6 feet away.[2-5] The latter being impossible during an eye examination. The mask acts as a barrier to respiratory virion droplets coming from the mouth and nose. However, nothing but gloves can protect us from touching the patient eyes, eye lid skin and tears.[6-8]

Innovative plexiglass barriers have been devised to shield doctors and patients from respiratory droplets. However, common tasks (such as intravitreal injections) require repeated close contact that risks infection.[6-8] During close contact we rely on our personal protective equipment (e.g., N-95 respirators, nitrile gloves and protective eye wear to prevent viral transmission and infection).

Consider that pre-surgical antibiotic prophylaxis has been common in ophthalmic surgery. Povidone-Iodine (Betadine) 5% has been routinely placed onto the ocular surface prior to surgery for cataract, retinal detachment and office-based intravitreal injection.[9] Though employed to prevent bacterial infection, betadine also has antiviral properties.[9] Submitted to the Indian Journal of Ophthalmology, we present the first use of topical Hypochlorous acid 0.01% (Avenova®, NovaBay Pharmaceuticals, Emoryville, California, USA) (HOCL) as an ocular surface antiseptic. This form of HOCL 0.01% is administered in spray-form, free of sodium hypochlorite, and at a pH of 6.5-7.0. Though employed secondarily to washout betadine 5% employed prior to intravitreal injection, we found it significantly improved patient comfort and no short or long-term HOCL complications.[9]

As part of our research we compared the antiseptic properties of both betadine 5% and HOCL 0.01%. Though there existed no clinical data on the novel coronavirus-19; it is clear that hypochlorous acid 0.01% (at 1 minute) was superior for inactivation of adenovirus, rhinovirus and coxsackievirus [Table 1].[9-12] In addition, HOCL 0.01% was recently found effective against SARS COVID-19 in vitro.[13]

Table 1: Antimicrobial spectrum coverage for betadine 5% and HOCL 0.01%

Microbial Species	Betadine 5%[9,11,13,14]		HOCL 0.01%[9,10,12,13]	
	Coverage	Duration of Exposure	Coverage	Duration of Exposure
Viruses				
Adenovirus	++	<1 min	+++	< 1 min
Rotavirus	+++	<1 min	+++	< 1 min
Rhinovirus	++	<1 min	+++	< 1 min
Coxsackievirus	++	<1 min	+++	< 1 min
Influenza virus	+++	<1 min	+++	< 1 min
SARS-CoV2 (COVID-19)	+++	<1 min	+++	< 1 min

+: Weak Strength; ++: Medium Strength; +++: High Strength. Data from references.[9-14] Betadine: Povidone-iodine. HOCL 0.01%: Avenova ® (NovaBay Pharmaceuticals, Emoryville, California, USA)

This suggests that antiviral pre-examination prophylaxis (PEAP) is worth considering. One drop or spray (1 minute prior to examination) may provide additional protection for both eye care professionals and their patients. The drop will cover the ocular surface and the spray treats the eye lids and lashes. PEAP offers some protection for the doctor touching possibly an infected patient's tears and skin; while affording patient protection from exposure from their provider during examination.

Our paper shows that HOCL 0.01% was better tolerated than betadine 5% alone in a small case series.[9] However, in consideration of our known experience with betadine 5% and now HOCL 0.01%, it seems reasonable to consider using HOCL 0.01% alone for PEAP.

Paul T Finger, Anthony Fam, Ankit S Tomar, Gaurav Garg, Kimberly J Chin

The New York Eye Cancer Center, New York City, New York, USA

Correspondence to: Dr. Paul T Finger, The New York Eye Cancer Center, 115 East 61st Street, New York City, 10065, New York, USA.
E-mail: pfinger@eyecancer.com

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About the author

Paul T. Finger, MD, is Clinical Professor of Ophthalmology at the New York University School of Medicine, Director of Ocular Tumor Services at The New York Eye Cancer Center and The New York Eye and Ear Infirmary of Mount Sinai. He is a consultant for Ophthalmic Oncology at the Manhattan Eye, Ear and Throat Hospital, NYU-Langone Medical Center and the Northwell Health System. Dr. Finger has particular interest in the diagnosis and treatment of ocular tumors, orbital disease, and ophthalmic radiation therapy. Chair of the Ophthalmic Oncology Task Force (OOTF), Dr. Finger coordinated the creation of the 7th and 8th edition staging systems for the American Joint Committee on Cancer and the Union for International Cancer Control. As OOTF Chair, Dr. Finger also developed international consensus guidelines for the American Brachytherapy Society and world registry studies for uveal melanoma, conjunctival melanoma, retinoblastoma and radiation side-effects (SORRT).