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Use of Sterillium on Protective Goggles for Anti-Fogging during Donning for Care of COVID-19 Patients: A Novel Technique

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Coronavirus disease-2019 (COVID-19) is an emerging, rapidly evolving condition, which has recently been declared a global pandemic. Healthcare workers, being the frontline warriors, are at risk of aerosol exposure and getting infected during care of COVID-19 patients. Use of effective personal protective equipment (PPE) is essential under such circumstances. PPE consists of surgical masks, double gloves, full-sleeved procedural gowns, and eye shield (1). The Occupational Safety and Health Administration recommends workers to use eye protection for procedures with a reasonable probability of infection/injury. Eye protection (goggles) and face shields are made of plastic material and play an important role in preventing exposure of eyes to aerosols and pathogens and serve as an important barrier to break the chain of infection (2). The updated guidelines on the use of PPE have also emphasized over the role of eye protection for healthcare workers involved in management of COVID-19 (3).

In our practice, we are using PPE with N95 masks, protective eye goggles, and face shields while working with COVID-19 patients. However, fogging over the surface of goggles is a frequently reported problem by our clinical staff. Fogging hinders effective patient care, and impaired vision increases the risk of failure in aerosol generating procedures such as intubation. This fogging may be due to improperly fitting mask, which tends to redirect the warm exhaled gases upward instead of forward. This warm water vapor in exhaled breath condenses on the relatively cold lenses of the goggles and causes fogging. This creates a hindrance for vision, especially during performance of critical aerosol generating procedure.

We noticed that in some cases, when the user cleaned their goggles with sterillium before usage, there was minimal fogging on the goggles. Sterillium is a propranolol-based skin disinfectant commonly used in clinical practice. Our serendipitous finding may be explained by alcohol-based anti-fogging action of sterillium, i.e., forming a thin film on the plastic goggle surface and reducing surface tension; this reduced surface tension causes rapid spread of condensed droplets over the whole coated surface, thus clearing vision (4, 5). We have made a standard practice of rinsing goggles with sterillium while donning PPE, thus preventing fogging and increasing safety of healthcare workers.

There is paucity of literature about anti-fogging measures for PPE kits. Soap solutions and iodophors have been described as anti-fogging measures for laparoscopic instruments (5). Keeping in mind the current daunting task of minimizing exposure and infection among healthcare workers, sterillium may serve a dual purpose, i.e., hand hygiene and an anti-fogging technique for goggles, eye shields, etc. However, the effectiveness of this novel anti-fogging technique is a matter of further research.

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