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Correspondence

Preanesthetic Povidone-Iodine gargles for patients with COVID-19



The COVID-19 pandemic has foredoomed a huge toll on human life that every effort in disease containment and treatment merit unsurpassable importance. The frequent involvement in aerosol generating procedures predisposes anesthesiologists up to six times more prone to viral cross-infections than other health care workers (HCW) [1]. Methods to reduce viral load and thereby HCW cross-infection assume relevance in this context.

Povidone-Iodine (PI) is a broad-spectrum anti-microbial antiseptic frequently used in surgery. When compared to the limited spectrum of microbes to which quaternary ammonium compounds and Chlorhexidine demonstrate their efficacy, PI is quite efficacious against bacteria/spores, enveloped and non-enveloped viruses. The broad-spectrum efficacy of PI has been attributed to the sheer diversity in susceptible targets causing simultaneous cell wall damage, cytosol leakage and inhibition of essential viral enzymes. No cross/acquired resistance to PI has been reported so far [2]. Recent in-vitro studies have demonstrated a 99.99% reduction in titres of corona virus, influenza virus and rotavirus after a brief exposure to 0.25% PI solution [3]. These findings point to a possible potent role of PI solution in oral decontamination of COVID-19 cases, prior to aerosol generating anesthesia procedures.

Based on initial experience from dentistry practice [4], we use PI solution for preoperative oral decontamination in COVID-19 patients presenting to us for emergency surgery. We dilute the commercially available 1% PI gargle into a total volume of 25 mL 0.2% PI warm solution and advice 2–3 oral rinses with a 30 second gargle each; 20 min prior to planned preoperative endo-tracheal intubation for COVID-19 cases. A brief preoperative evaluation can rightly identify patients with a rare allergy to PI and such cases are excluded from the mouth-wash. We presume that with the inherent virucidal properties of PI a significant reduction in infective aerosol generation can be achieved.

Selective oral decontamination with Chlorhexidine or PI mouthwashes has shown to reduce the risk of ventilator-associated pneumonia (VAP) [5]. In the COVID-19 scenario it should be re-iterated that the anti-viral activity of PI against the Severe Acute Respiratory Syndrome and Middle East Respiratory Syndrome corona virus is better than Chlorhexidine. Studies comparing the in-vivo efficacy of either of these mouth-washes in COVID-19 is lacking, further the paucity of PI gargle use in the VAP context has also been attributed to the better cost-benefit profile of Chlorhexidine [2].

Ours is the first description in anesthesia practice on the use of preoperative PI gargles in COVID-19 cases and its possible virucidal efficacy against the novel coronavirus-2019. Future prospective studies evaluating pre-post viral titres can demonstrate the in-vivo efficacy of this intervention. We propose this method as a handy and feasible

intervention in mitigating the chain of spread of COVID-19 through cross-infection among HCWs.

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Declaration of competing interest

No conflict of interests to declare.

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Varun Suresh (MD, DM)^{a,*}, Saurabh Sharma (MD, DM)^b,
Anurag Aggarwal (MD PDCC)^c

^a Department of Anaesthesiology, Government Medical College,
Thiruvananthapuram, Kerala 695011, India

^b Department of Neuro-anesthesia and Neuro-critical care, Kalinga Institute
of Medical Sciences, Bhubaneswar, Odisha 751024, India

^c Department of Neuroanesthesia and Pain Medicine, Fortis Hospital, Noida,
India

E-mail address: varunsureshpgi@gmail.com (V. Suresh).

* Corresponding author.