Is Nasal Irrigation Beneficial in COVID-19?

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NEW YORK (Reuters Health) - Nasal irrigation might relieve symptoms and reduce transmission of SARS-CoV-2 in patients with COVID-19, according to a new report.

It has been unclear whether topical nasal saline irrigation mitigates viral effects or potentiates viral transmission or has no impact whatsoever, write Dr. John S. Schneider of Washington University School of Medicine, St. Louis, in Missouri, and colleagues.

The authors review the current evidence on the potential effects of nasal saline irrigations and their adjuncts with viral upper respiratory illnesses in an opinion piece in JAMA Otolaryngology-Head and Neck Surgery.

Nasal rinses physically disrupt the viscous surface layer, removing mucus and particulate matter, and increase hydration of the deeper aqueous layer, thereby improving underlying ciliary beat frequency and reducing local inflammatory mediators. These effects can be particularly helpful during a viral respiratory infection where mucociliary dysfunction and mucostasis can result from the inflammatory response.

The best tonicity of saline used for nasal rinses remains unclear, as does the potential value of adding steroid compounds to saline irrigations. Betadine and other iodine derivatives have been shown to reduce coronavirus levels in vitro, but it remains unclear whether they can decrease viral transmission in vivo, the authors say.

Potential risks of nasal irrigation should also be taken into account, including the possibility that irrigation might increase viral shedding (and, therefore, transmission) and the possibility that the nasal-rinse bottle might serve as a vector for transmission.

"Thus, patients should practice good hand hygiene and decontaminate the surrounding surfaces (e.g., sink, counters) and plastic rinse bottle to prevent subsequent infection," the authors note.

"Given the safety profile of these therapies, hypertonic saline nasal irrigations should be encouraged for patients and health care workers especially," they conclude. "For our patients with chronic rhinosinusitis, continued use of steroid irrigations should be encouraged."

"Emerging research is expected to shed further light on saline irrigation's protective and therapeutic effect on COVID-19," they add.

Dr. David King of the University of Queensland, in Australia, who recently reviewed the role of nasal saline irrigation in a variety of settings, told Reuters Health by email, "The research on the role of nasal saline irrigation is certainly still patchy and in an early stage of development. We can only extrapolate with low level of certainty the current research to its presumptive benefit for reducing COVID-19 infection risk."

"There are no significant contraindications to nasal saline spray, but minor adverse effects, particularly burning and stinging sensation in the nose, may limit its use in some people," he said.

"The benefit of saline nasal irrigation for preventing and treating COVID-19 infection is yet to be established, but it is worth considering its use, as it is safe and cheap and has demonstrated benefit in treating viral and allergic rhinitis," added Dr. King, who was not involved in the new report.

"Saline nasal irrigation may provide a small reduction in infection risk and duration," he said. "However, at best it will be a small part of the wider control measures that include behavioral and pharmaceutical interventions."

Dr. Rakesh K. Chandra of Vanderbilt University Medical Center, in Nashville, Tennessee, who recently reviewed the use of nasal saline irrigation in chronic rhinosinusitis, told Reuters Health by email, "All of these treatment decisions are based on risk versus harm considerations. With proper precautions (distilled water, cleaning the bottle and surrounding surfaces, as the authors note), irrigations are valuable with little to no risk."

"Hypothetically, rinses with iodine might carry less risk of disseminating virus since any collateral droplets would have the iodine," he added. "There may also be a role for surfactant irrigations, which are essentially dilute soap solutions. These are known to disrupt the viral capsid."

Dr. Schneider did not respond to a request for comments.

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