

Mouthwashes Help in Reducing Spread of COVID-19 Infection

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Dear Sir,

We have read your nice editorial which shows that yoga can be of a great help to combat COVID problems and to prevent spread of COVID infection.^[1] Yoga helps to improve respiratory health and immunity, both of which are involved in the prevention and healing from COVID-19.^[1] The guidelines for healthcare workers for prevention of COVID-19 show how infection can be prevented with use of mask, goggles, hand hygiene, etc.^[2]

Yoon, *et al.* reported that use of chlorhexidine mouthwash for 30 sec is effective in decreasing the viral load in the saliva in two patients with COVID-19 infection.^[3] This study clearly shows the effect of chlorhexidine on corona virus in saliva. Curry leaves (*Murraya koenigii Spreng.*, a medicinal plant and green leafy vegetable used as spice in food preparation) can be safe, effective and economical for maintaining good oral health and curry leaves mouthwash is effective in maintaining the pH of saliva similar to chlorhexidine mouthwash.^[4,5] Curry leaves contain volatile essential oils (sesquiterpenes, monoterpenes and saponin), carotene, total folic acid, riboflavin, iron, calcium, phosphorus and zinc.^[6-8] They have antibacterial, antiviral, antioxidant, anti-diabetic, anti-inflammatory, antitumor and neuroprotective activities.^[9] Curry leaves mouthwash is helpful in reducing dental plaque and gingivitis.^[10] Kapur S has formulated a mouthwash based on FSSAI-approved nutraceutical-contains plant ingredients that are rich in saponins (a compound that disrupts fat just like a soap or a detergent).^[11] Coronavirus-2 which causes COVID-19, is known to attack human cells first with a spike protein that is located on the virus. This spike protein is embedded in an envelope of fat. As soap and detergents disrupt this fat layer, saponin present in the mouthwash formulated by Kapur S also disrupts the fat layer of corona virus. Thus essential oils containing terpene and saponins may be of help in reducing COVID-19 infection.^[11] Essential oils are lipophilic by nature, hence their virucidal activity is probably due to disruption of the viral membrane.^[12] Mouthwashes reduce the viral load in the short term where the greatest potential for

infection comes from, saliva, oral cavity and throat.^[13,14] Mouthwashes cannot inhibit the production of viruses in the cells. Curry leaves mouthwash containing essential oils and saponin can help in reducing viral load in saliva and this can be helpful in reducing spread of COVID-19 infection.

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