An Alternative Preventive and Therapeutic Approach to 2019-nCoV Infection

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The severe acute respiratory syndrome-related Coronavirus 2 or novel coronavirus (2019-nCoV) infection has been declared a world pandemic causing 499 913 deaths in 216 countries around the world as of June 29, 2020. In China, traditional herbal and or/alternative medicines have been used alone or in combination with conventional drugs to treat infected patients. This approach has shown promising results since it resulted in the prevention of SARS-Cov-2 infection in healthy persons and the improvement of the health status of patients with mild or severe symptoms.[1]

In this correspondence, we suggest an alternative preventive and therapeutic approach based on using traditional therapies to prevent infection or alleviate conventional drugs-associated side effects.

At least 2 US clinical trials are ongoing using gas inhaling to improve survival in 2019-nCoV patients. Indeed, in the 2 clinical trials (NCT04306393 and NCT04290871), 102 patients with 2019-nCoV will be enrolled and receive nitric oxide by inhalation. Nitric oxide has been chosen for its vasodilator and antiviral activities. In North African phytotherapy, fumigation with the steam of *Eucalyptus globulus* Labill. leaves has been usually used to prevent and/or treat respiratory tract diseases. This method has shown its usefulness against influenza for centuries. Moreover, respiratory tract infections are usually and effectively treated by drinking decoctions or infusions of *Thymus vulgaris* L. aerial parts. Extracts from *Eucalyptus* sp. were shown to exert anti-SARS-CoV activities.[2] Eucalyptol (terpenoid free of side effects), the major compound found in the leaves of *E. globulus,* exerted important protective effects of the respiratory tract owing to its proven bronchodilator, anti-inflammatory, and antioxidant activities.[3] Oil aerosols of *Eucalyptus* in a room significantly inactivated influenza A virus. Similar strong antiviral effects were obtained with *Eucalyptus* vapor.[4] Likewise, *T. vulgaris* extracts were found to exert promising antiviral and antibacterial effects without toxic side effects, in addition to its expectorant, spasmolytic, and relaxing effect on the trachea through β2-receptors.[5]

Hence, we suggest using *E. globulus* vapors as fumigation to disinfect hospital rooms. This vapor could be inhaled by patients for its antiviral and bronchodilator effects. Moreover, the infusion of *T. vulgaris* could be used as a preventive traditional medicine or associated with conventional drugs to alleviate their side effects. Besides, the effect of these herbal formulations on 2019-nCoV could be improved by the supplementation of vitamin C, D, and zinc.

Overall we suggest:

1. Fumigation (in the rooms) with the vapor of *E. globulus* Labill., 5 g/m^2 for at least 15 minutes per day.
2. Inhalation of *E. globulus* Labill., before sleeping.
3. Infusion of *T. vulgaris* L. (10 g/100 mL water) by mouth.

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