

Repurposing of herbal medicine used for the treatment of respiratory infections to aid the control of COVID-19 pandemic

Abstract

Coronavirus disease 2019 (COVID-19) is a global pandemic disease, and has reached a new dimension with a higher death ratio. Repurposing of known drug molecules against COVID-19 has become an elegant strategy to quickly develop effective therapies. On other hand, herbal medicines have been issued for the prevention and treatment of COVID-19. Thus, repurposing of the herbal medicine used against respiratory infections for management of COVID-19 is the novel approach to seek for remedies of COVID 19 pandemic as relief of the respiratory symptoms are the best options to mitigate the severity of the novel virus. Accordingly, the potential herbal medicines are recommended for the treatment of COVID 19, which are previously used for treatment of respiratory infections.

Keywords: herbal medicine, repurposing, COVID-19, respiratory infections

Volume 14 Issue 3 - 2021

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Received: September 20, 2020 | **Published:** May 07, 2021

Abbreviations: COVID-19, coronavirus disease 2019; WHO, world health organization; HCQ, hydroxychloroquine; CQ, chloroquine

Commentary

Coronavirus disease 2019 (COVID-19) is a global pandemic caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) that was first identified in the city of Wuhan, Hubei Province, China, at the end of 2019.¹ On January 30, 2020 the World Health Organization (WHO) declared the outbreak as a Public Health Emergency of International Concern, and has reached a new dimension with a higher death ratio.² Since then international health care authorities have been working to provide quarantine and quick diagnosis for COVID-19 patients along with research to find an effective treatment that can control and prevent the present devastating novel COVID-19 pandemic.³ Accordingly various strategies have been proposed to control and prevent the spread of this epidemic. Among them repurposing of known drug molecules against COVID-19 has become an elegant strategy to quickly develop effective therapies as traditional drug development process is tedious, expensive and will consume many years.⁴ Among the repurposed drugs, the commonly used antimalarials chloroquine (CQ) and hydroxychloroquine (HCQ) have become the focus of global scientific, media, and political attention.⁵ As such some researchers have promoted chloroquine and hydroxychloroquine for the treatment and prevention of illness from a variety of microorganisms, including SARS-CoV.⁶ However, some countries opposed the use of these drugs because of adverse effects associated with drug repurposing and lack of statistically significant clinical data.⁷ On the other hand, use of scientifically-proven traditional medicine herbal medicines are welcomed by World Health Organization,⁸ and has been considered as treatment approach option for treatment of COVID-19 pandemic.⁹ To date, many guidelines related to herbal medicine have been issued for the prevention and treatment of COVID-19. However,

recently anticipated herbal medicines need a further ethnobotanical and physiochemical studies, which will take more time to be used. Thus, repurposing of the herbal medicine used against respiratory infections for management of COVID-19 is the novel approach to seek for remedies of COVID 19 pandemic as relief of the respiratory symptoms are the best options to mitigate the severity of the novel virus. Accordingly, the following potential herbal medicines are recommended for the treatment of COVID 19, which are previously used for treatment of respiratory infections. For instances, spray application of five aromatic plants (*Eucalyptus citriodora*, *Eucalyptus globulus*, *Mentha piperita*, *Origanum syriacum*, and *Rosmarinus officinalis*) will bring about significant and immediate improvement in symptoms of upper respiratory ailment such as sore throat, hoarseness or cough as reported by a recent Randomized Study Using Aromatic Herbs.¹⁰

Moreover, recently reported three herbs from the Apiaceae family—*Ligusticum* spp. (*osha'*, *oshala*), *Lomatium dissectum* (desert parsley, *lomatium*), and *Osmorhiza occidentalis* (western sweet Cicely) are all clinically potent respiratory-tract antivirals that are also immune stimulant and inflammation modulating.¹¹ Thus these potential herbal medicines will contribute to control of the consequences of the COVID-19 pandemic. Generally, plant families of Asteraceae, Fabaceae, Lamiaceae, Solanaceae, Apiaceae family and Amaryllidaceae accounted highest number species of used for treatment of respiratory infections as reported in different literatures.¹²⁻¹⁴ Therefore, the uses of these potential herbal medicines are highly recommended for treatment of COVID-19 pandemic.

Acknowledgments

Not applicable.

Conflicts of interest

Author declares that there are no conflicts of interest.

Funding

None.

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