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Covid-19 Treatment with Herbal Medicines: Dark Room can be Enlightened in other Way too

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The author (AN) was infected by Covid-19 and recovered well. His treatment included herbal medicines that lead him to search relevant information and present this opinion.

The start of the year 2020 coupled with Covid-19 (Coronavirus Disease 2019) has utterly changed the attention of the world. Till last year, all were focusing upon trade, media, natural resources, wars, hunger etc. but now all are discussing methods to keep themselves safe from Covid-19. Starting from Wuhan in China, Covid-19 has now spread across the globe. The most important is the issue of non-availability of specific medicine/antivirals/vaccines for this lethal disease and current amelioration procedures only include supportive and non-specific treatment. So far, the arena of herbal medicines for treating Covid-19 patients is totally neglected and all focus is upon preparation of synthetic drugs and vaccines from non-plant resources. The naturally occurring herbal medicines are in use to treat patients with different diseases. Herbal medicines in China had been successfully used for treatment of SARS and MERS, the resembling syndrome to Covid-19 (Organization, 2004; Yang *et al*., 2020), and it can be particularly fruitful in the scenario of ongoing epidemic. Herbal medicines are a part of clinical support to patients of Covid-19 infection in China (Li and De Clercq, 2020). The in hand data strongly recommends use of herbal medicines as viable option for treating Covid-19 patients across the world. Although different antivirals, antibiotics and corticosteroids i.e. ribavirin, ritonavir, lopinavir, Chloroquine, Amoxicillin, Methylprednisolone etc. are being used for treatment of infected persons but their side effects have highlighted many points to ponder along with careful dosage administration, patient sensitivity and disease stage. For example, the use of Chloroquine has increased the mortality rate in Pakistan. Similarly, ribavirin usage has been noticed responsible for anemia (Jordan *et al*., 2018). Therefore, we direly need more precise and less harmful treatment options. In our opinion, an integrated line of action with more effectiveness and safety i.e. clinical trials of individual herbal medicines and their combination with different drugs can be doable strategy. Our opinion gets advocacy by the recommendation of Liu *et al*. (2012) stating positive role of herbs in managing SARS infection by improving symptoms and absorption of pulmonary infiltration as well as absence of any severe event during treatment. Recently, 46 active ingredients from traditional Chinese medicine (TCM) were evaluated for their action against coronavirus S-protein-binding site of human ACE2 protein and seven herbs principally *Lonicerae Japonicae* Flos and Mori Folium were attributed with desired activity.

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The results were verified and rationalized by the clinical experiments (Niu *et al*., 2020). This research innovatively integrated and proved combination of TCM and modern medicine symptomatic therapy comprehensively effective than symptomatic supportive care treatments alone. Similarly, glycyrrhizin from Liquorice root inhibited the replication of SARS virus (Cinatl *et al*., 2003). Corroborating the facts to make our stance robust, Baicalin (*Scutellaria baicalensis*) (Schwarz *et al*., 2014), Quercetin (*Toona sinensis* Roem) (Chen *et al*., 2008), luteolin (*Veronicalina riifolia*) (Yi *et al*., 2004), that had already been proved for their activity against binding of SARS-S protein with human receptor are potential candidate compounds to be clinically trialed against Covid-19. The helicase protein can also be reckoned as possible anti-HCoV (human coronavirus) target. Due to homology between SARS and nHCoV, these treatment options can be potent weapons in fighting Covid-19. The critical analysis of previous reports and ongoing research strongly favors our opinion and recommend evaluation of different plant-based compounds for their role in treatment and prevention of CoV infection. Unluckily, herbal medicines are neither fully evaluated nor used potentially for treatment of Covid-19 infection despite their immense benefits and least side effects. Although developed countries like USA and China have allocated and spent billions dollars on research involving herbal medicines for different diseases yet developing as well as under developed countries must come ahead to contribute in herbal medicine research for tackling challenge of Covid-19. Traditional herbal medicines and novel chemical compounds are not only support to global health system but also to deteriorated economy. Investment in herbal medicines is still comparatively small in comparison with overall pharmaceutical business. This is right time to take up gauntlet and start work. Lack of facilities, improper surveillance and low health budgets and non-adoption of preventive measures is already aggravating the situation in many parts of the world. After few months, we can be in a more difficult phase and economic crunch. In parallel with development of plant-based drugs, comprehensive set of ethical issues in this research will be warranted that will definitely help for evaluation of drug validity, toxicological features, socio-medical acceptance and related challenges in designing plant-based drugs that had not been previously addressed. We pertinently mention to appraise the safety of plant-based compounds for treating CoV infections. The herb-drug interaction(s) must be very carefully assessed to prevent toxicity or interference in drug efficacy. A pragmatic and comprehensive scientific framework for herbal medicine research internationally is expected to have positive implications for future research not only in medicinal research but also in social sciences.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

AUTHORS CONTRIBUTIONS

AN: Conceived tha idea; **AN & MA:** Writing, Review, Editing; **NA & SA:** Resources, gathered literature, **NK:** Critically revised; All authors approved the final version.