

Herbal Medications for Treatment of Covid-19

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ABSTRACT

The global pandemic of the Corona virus began spreading in early January 2020. It has profoundly impacted everyone's attitude all across the planet. Individuals started to understand how important a robust immune system was in battling the illness. Many experiments in homoeopathy, allopathy, ayurveda, and a combination of all of these began. The worry and dread of becoming infected sparked countless studies and developments. "Necessity is the mother of creativity," as the adage goes. Despite India's population of nearly 1.3 billion, the data found that there were few corona cases and a low mortality rate, while industrialised countries from Europe and America suffered the most and had a higher fatality rate. This review aimed to summarize and analyze the pattern identification (PI), herbal formulae, and composition of herbs provided by recent guidelines for the treatment of pediatric COVID-19. Seven data sources were reviewed until March 25, 2020. We analyzed the herbal formulae included in the guidelines and performed a network analysis to identify the frequency of herbs recommended in the herbal formulae. All 3 guidelines were provincial guidelines from China. Our results showed that there were 4 stages, 12 PIs, and 13 herbal formulae recommended by the provincial guidelines

KEYWORDS: Herbal medicine, coronavirus (2019-nCoV), COVID-19, benefit/risk assessment, respiratory diseases

I. INTRODUCTION

In December 2019, an occurrence of a sudden breakout of an infection resembling pneumonia struck Wuhan, Hubei Province, in China, that becomes a pandemic in a very short time. Recently, Chinese researchers identified a new coronavirus using January 2020 and labelled it as 2019-nCoV or SARS-CoV-2 severe acute respiratory syndrome coronavirus 2). Herbal intervention is defined as a phytopharmaceutical preparation obtained exclusively from a whole

plant or portions of the plant. It is utilised either in a crude form or as a pure pharmaceutical formulation such as extracts, juice, dried powder, decoction, etc., following the methods of distillation, extraction, filtering, and so on. They are rich source of active metabolites, alkaloids and flavonoids responsible for their pharmacological effect. Several studies revealed that using herbal medication could lessen the effects of COVID-19 and prevent it. In parallel with using modern medication, China and India use herbal medicine to boost patients' immune system. Traditional Chinese medicine showed considerable effectiveness in reducing clinical symptoms, reduce mortality, and recurrence rates of the virus. The active phytochemical components of herbal formulations or medications, such as alkaloids, flavonoids, terpenoids, phenols, polyphenols, tannins, saponins, polysaccharides, proteins, lipids, and peptides, are what give them their pharmacological effects. The COVID-19 infection has been treated using a variety of therapeutic techniques. These include RNA-dependent RNA polymerase inhibitors such as Remdesivir and Ribavirin, Favipiravir, protease inhibitors like Lopinavir/ritonavir, endosomal acidification inhibitors like azithromycin and chloroquine, monoclonal or polyclonal antibodies, adjuvant therapies like tocilizumab for reducing IL-6 in cytokine storm, viral exocytosis inhibitors like interferon-3,

II. METHODS:

2.1 STUDY REGISTRATION

The preferred reporting criteria for systematic reviews and meta-analyses (PRISMA) statement¹² and the synthesis without meta-analysis (SWiM) in systematic reviews were followed in the reporting of our study.¹³ This study protocol was prospectively registered with the International Prospective Register of Systematic

2.2 ELIGIBILITY CRITERIA

Case-control studies, cross-sectional studies, cohort studies, and randomised controlled trials (RCTs) that met the following criteria were also included: Patients treated with LH or LH combined with other medications; (3) presented data on the efficacy or safety of LH on COVID-19; (4) included a sample size of greater than 10; and (5) published in Mandarin or English. Patients with COVID-19 were confirmed by a laboratory test.

The following studies were not included: Studies comprised suspected cases, didn't concentrate on LH, and included case reports, reviews, animal studies, letters, comments, abstracts, and editorials, among other things.

2.3 SEARCH STRATEGY

Between December 1, 2019, and June 2, 2020, we did an extensive literature search using the China National Knowledge Infrastructure (CNKI), Chinese Biomedical Literature Database (CBM), Wanfang database, PubMed, Embase, and Web of Science (WoS). Search phrases included "severe acute respiratory syndrome coronavirus 2," "SARS-CoV-2," "coronavirus disease-19," "COVID-19," "novel coronavirus," "new coronavirus," "2019 novel coronavirus," "nCoV," "novel coronavirus pneumonia," "coronavirus disease 2019," "Lianhua Qingwen," and "Lianhuaqingwen." PubMed's comprehensive search methodology is displayed in Supplement 1. In order to find additional potentially eligible research, we manually reviewed the reference lists of the included studies and pertinent systematic reviews.

2.4 STUDY SELECTION

To manage the discovered documents and eliminate duplicates, we used Endnote X8 software from Thomson Reuters (Scientific) LLC in Philadelphia, Pennsylvania, US. To identify articles that should be further evaluated, two reviewers (ML and YG) independently screened the titles and abstracts of the research. The entire texts of potential papers were then examined by two reviewers (ML and YG) to establish their eligibility. All disputes were resolved by speaking with a senior reviewer (JHT). The study with the higher sample size was included when other trials with similar patients were taken into account.

2.5 QUALITY ASSESSMENT

Each included study's quality was evaluated independently by two reviewers (YY and KLY), with the assistance of third reviewer (JHT) in the event of a tie. Three techniques were used to

assess the calibre of the included studies. To rate the calibre of randomised controlled trials, the Cochrane Risk of Bias (RoB) method was utilised. Case control study quality was evaluated using the Newcastle- Ottawa Scale (NOS). A case series study's quality was evaluated using an Agency for Healthcare Research and Quality (AHRQ) checklist.

2.6 DATA EXTRACTION

Information was extracted from included studies using a pre-designed data extraction form. Authors, publication year, first and corresponding author's country, journal name, language of publication, study period, design, sample size, patient age and sex, comorbidities present, interventions, LH dosages, length of treatment, follow-up, and outcomes of interest were all recorded on this form. Data extraction was carried out independently by two reviewers (ML and YG), and differences were settled by speaking with a senior reviewer.

3.1 Factors associated with herbal medicine utilization

Marriage status, urbanisation, monthly income, and participants' perceptions of their own health state were all substantially correlated with HM use, according to both unadjusted and adjusted regression models.

The odds ratio for married participants using HM was 1.78, with a 95% confidence interval of 1.07 to 2.94. Residents of rural areas were more likely to use HM than residents of urban areas (aOR: 1.67, 95%CI: 1.12-2.47). As comparison to respondents with incomes of less than VND 4.2 million, individuals with an average monthly income of more than VND 8.4 million were 1.7 times more likely to use HM (aOR: 1.72, 95%CI: 1.04-2.83).

3.2 Prevalence and indications for herbal medicine use

During the period Of of 508 participants, 249 (or 49%) thought about utilising HM to treat the signs and symptoms of common illnesses during the COVID-19 pandemic. Ginger (79.1%; *Zingiber officinale* Rosc.), honey (74.7%; MeI), garlic (64.7%; *Allium sativum* L.), and perilla (48.2%; *Perilla frutescens* (L.) Britt.) were the most commonly utilised HM. These herbs were primarily used to treat fever (35.7%), nasal congestion (41.4%), cough (60.6%), and sore throat (62.2%). provide information on the different types of HM employed and their indications. The sources of information that respondents looked for on HM

use, HM supply, and reasons for using or not using HM are shown herbalists (47.6%), doctors of traditional Chinese medicine (81.4%), Participants most frequently identified herbalists (47.6%), herbal medicine producers (41.3%), and pharmacists (39.4%) as sources for HM data. The majority of participants (i.e., those who grew it themselves) got their HM from their own garden, then from markets and herbal drugstores (62.7, 43.4%, and 41.0%, respectively). Participants most frequently stated "prior personal experience" (62.2%), the "natural" origins of HM (59.8%), "easy of access and availability of herbal treatments" (49.0%), and "advice of family, friends" as their reasons for using HM. (43.0%). In contrast, among those who had not used HM in the allotted time, the most frequent excuses given were "don't have adequate expertise, knowledge" (44.8%), "longer time to notice result" (41.7%), "I'm healthy and don't need its use" (35.5%), and "no professional counsel on usage" (29.3%).

3.3 Respondents' attitudes regarding herbal medicine

Four statements about attitudes towards HM were agreed upon by the majority of respondents, showing a largely positive attitude. Over 70% of the users said HM was secure, had fewer negative effects than traditional medications, and worked well for treating minor health issues. Also, more than 65% of the respondents said they were happy with the results of using HM. Substantial correlations between respondents' views about and use of HM were discovered ($p < 0.05$). The likelihood of using HM increased among participants who had a favourable attitude about them (i.e., who agreed with the majority of the remarks). Those who stated that "herbal medicines are natural and hence safe" in their response were more inclined to take HM (55.1%).

4.1 Effect of herbal intervention on COVID-19 herbal treatment's impact on RT-PCR negative

The impact of herbal intervention on RT-PCR negative has been examined in seven studies. 22,24,27,29,31,35,48 The combination of herbal remedies and Western medicine certainly had a positive impact on RT-PCR negative with effect rate, although the difference was statistically insignificant ($n = 591$, $RR = 1.22$, $95\% \text{ CI} = 1.00$ to 1.44).

4.2 Herbal treatment's impact on COVID-19 clinical symptoms

The current review paper evaluated the impact of herbal medicine on COVID-19's primary symptoms, including fever, cough, exhaustion, chest pain, sore throat, and hospital stay.

4.3 A fever's impact.

A total of 24 RCTs have assessed the effectiveness of herbal medication in treating coughs. In twelve investigations, the number of patients with lowered body temperatures during the protocol treatment period—represented as the Risk Ratio—was reported as the efficacy of herbal intervention on fever. 16,21,23,24,27,31,37e39,44e46 The combined use of Western medicine and herbal therapy had a substantial impact on the overall effect rate ($n=850$, $RR=1.09$, $95\% \text{ CI}=1.03$ to). Eight studies 18,19,25,29,32,34,40,48 demonstrated the efficacy of herbal intervention on fever as the number of days to recover from fever. (n 14 850, MD -1.39, $95\% \text{ CI}$ -1.76 to 1.03) The combined herbal intervention had a substantial impact on the effect rate.

4.4 the coughing effect.

The impact on cough has been reported in a total of seventeen investigations. Eleven RCTs (16, 21, 23, 24, 27, 39, 44, and 46) have demonstrated the effect in terms of the number of patients who have relief from coughing, and the data have indicated a statistically significant effect. ($n=782$, $RR=1.22$, $95\% \text{ CI}=1.08$ to 1.37 , $I^2=23.5\%$, $p=0.227$) [See Fig. 4B]. Six studies (18,19,29,32,40,48) reported the length of time it took for a cough to subside, and the effect is shown as MD CI . ($n = 1406$, $MD = 2$, $95\% \text{ CI} = 3, 33$, to $0, 68$)

4.5 fatigue-related effects.

A total of fourteen research reported the effect of herbal intervention on fatigue. There are nine studies that indicate the number of patients who do not experience fatigue following treatment 16,21,23,37e39,44e46. and shown a statistically significant effect rate ($n = 700$, $RR = 1.27$ [$95\% \text{ CI} = 1.11$ to 1.44], $I^2 = 19.6\%$, $p = 0.269$). Five further RCTs (18, 19, 29, 40, 48) have described the effect as the time (in days) for fatigue relief. The final outcome demonstrated a statistically significant effect, with the effect rate shown by MD CI (n 14 656, MD -2.07; $95\% \text{ CI}$ -3.35, 0.78).

4.6Improvement in chest CT results.
6 altogether thirteen

The impact of herbal remedies has been examined in research 19, 29, 31e35, 37, 38, 40e42, 44.

when the number of patients who have chest CTs increases following intervention. The total cumulative impact was substantial, and symbolised by the Risk Ratio (n 14 1402, RR 1.15 [95% CI 1.08e1.23]); I2 ¼ 29.9%; p ¼ 0.145).

III. DISCUSSION :

Summary of evidence

The current evaluation evaluates 32 RCTs with 3177 patients that reported on the effectiveness of herbal interventions for the therapy of COVID-19. In COVID-19 patients, we looked at the impact of herbal treatment on RT-PCR negativity reduction of clinical symptoms, biochemical and analytical parameters, radiographic changes (improved chest CT), and related side events.

This meta-analysis shown that the use of herbal supplements in conjunction with Western medicine helped COVID-19 patients experience an early remission of their symptoms, including a reduction in coughing cases.

The treatment time for herbal medicines ranged from 5 to 30 days, which was another factor to take into account. It is debatable if herbal medicine can have a meaningful impact in such a brief period of time. The management might be completed more quickly by shortening the duration of clinical symptoms if the herbal drugs were administered at the earliest stage of symptom development or if used as a preventative measure. Because of this, COVID-19 may typically be effectively halted from progressing from a mild to a critical stage, lowering mortality.

IV. CONCLUSIONS

The findings of this comprehensive study indicate that using herbal remedies in conjunction with Western medical treatments has additional positive effects and is likely to improve the core COVID-19 illness symptoms, such as fever, cough, and exhaustion, in a comparatively shorter amount of time. Chest CT scans, WBC counts, absolute lymphocyte counts, lymphocyte percentages, and C-Reactive protein levels have all improved. An assessment of the effectiveness of herbal therapies on lowering body temperature and side effects, however, could not be made at this time due to the dearth of high-quality clinical trials and the significant degree of heterogeneity in the included

research. The included SRs are either inconclusive or offer encouraging conclusions despite their subpar methodological quality.

Clinical research and SRs should still follow accepted methodological standards to offer decision-makers, clinicians, and patients high-quality, trustworthy evidence even during the epidemic. However, in order to provide a comprehensive summary of all the evidence on the use of herbal medicine in the management of COVID-19, this overview of SRs adhered to strict methodological standards, included a thorough and extensive search, as well as a standard tool for the methodological assessment of SRs.

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