Case Report

An Ayurvedic approach in the management of mild symptomatic case of COVID-19 through telemedicine: A case report

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Abstract
COVID-19 pandemic is a rapidly evolving public health emergency. Conventional pharmacotherapy used in its management is supportive. Although mild presentation of the disease counts for the largest group of infected people with SARS-CoV-2, no targeted therapy is offered for clinical improvement. A confirmed case of COVID-19 with mild illness was treated with Ayurvedic medicines via remote consultation. Ayurvedic treatment, in this case, was directed towards alleviating symptoms and minimising the chances of progression of disease. Disequilibrium of dosha-dhatu-malas in a presented case was evaluated. Roles of Vata dosha, kapha dosha, Rasa dhatu and Pranavaha strotasa were identified. A decoction of Draksha (Vitis vinifera), Haridra (Curcuma longa), Shunthi (Zinziber officinale) and Yashtimadhu (Glycyrrhiza glabra) was administered thrice a day for 7 days. Gargles with Haridra (turmeric) medicated warm water were advised twice a day. Pathya-aphyta were suggested as a complete plan of therapeutic regimen. The patient experienced satisfactory clinical improvement on 6th day of the treatment. No adverse effects associated with the treatment were observed. Thus, there is a possibility that, Ayurveda medicines that are well known for their safety since thousands of years, might emerge as safe and effective solution for managing mild cases of COVID-19 even through telemedicine and reduce strain on overstressed public health infrastructure.

Keywords : COVID-19; Ayurveda; SARS-CoV-2, Tele Medicine

Introduction

COVID-19 pandemic is an ongoing global health emergency that has already affected millions of lives all over the globe. Being a novel disease caused by SARS-CoV-2 virus, medical scientists across the globe have focused their efforts on understanding the pathophysiology, treatment as well as to find methods for developing vaccines to contain the further spread of the disease. Although no specific drug therapy to treat the COVID-19 is found to be safe and effective as per modern medicine yet, interestingly many Ayurveda drugs and treatment regimens have shown extremely satisfactory results in managing the disease. It is now known that, maximum number of patients i.e 81% patients affected by SARS-CoV-2 present with mild illness, almost 14% turn severe, and 5% suffer from critical form of illness.¹ Ayurveda treatment as an adjuvant to conventional empirical treatment or even as a standalone treatment has shown excellent outcomes with minimal adverse effects in mild, moderate and severe category cases also.² ³ Ayurveda treatment in COVID-19 has proven to be safe, effective and at the same time cost effective which can be taken from the comfort of one’s home while following isolation norms. Telemedicine practice has surfaced as an effective method to treat and follow up such self-isolating patients and even those patients who are located distantly.⁴ Since the disease has been categorized in 3 types as per severity, treatment guidelines differ for each of these. For an example, active pharmacologic treatment is not recommended for young, healthy COVID-19 patients with mild symptoms and no underlying comorbid conditions in USA.⁵ However, the sudden outbreak of pandemic has caused serious social psychological impact. This impact is found more, especially on those who are quarantined,
under isolation or taking home-based care and thus have limited access to face-to-face communication with health care provider. In this report, we present one such case of mild symptomatic COVID-19 disease, wherein the patient was located in USA and was treated successfully with Ayurveda medicines which were advised on the basis of Ayurveda principles, through telemedicine, by a qualified Ayurveda practitioner located in India.

**Presenting complaints**

**Patient Information**

On 12th April 2020, Sunday, the author received a call from an Indian national male, 31 years old, who was located in USA, Washington DC, for work assignment since 21st December, 2019.

The subject narrated that, on 11th April 2020, reports of the patient’s respiratory swab tested positive for SARS-CoV-2 by rRT-PCR assay. The patient had a contact history with the SARS-Cov-2 infected person at work place and had been suffering from various manifestations of upper respiratory tract infection since 8th April 2020. (Table 1) However, local health care provider had asked him to remain in home isolation and no other pharmacotherapy had been suggested. The patient had consumed Tab Paracetamol 500 mg as an analgesic intermittently and started gargles with warm water however the symptoms were persistent except fever. Therefore, in the search of supportive therapy, patient approached the author through a telephonic communication and disclosed the above-mentioned history of the illness. The subject was apprehensive about the health status and requested Ayurveda medicines for the illness. The patient did not report any medical or surgical history. Also, the patient was not under any medicine for other concomitant illness. The patient was an otherwise healthy non-smoker.

<table>
<thead>
<tr>
<th>Illness Day</th>
<th>Work</th>
<th>Home</th>
<th>Home</th>
<th>Home</th>
<th>Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sore throat</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Body ache</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Head ache</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Rhinorrhea</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cough</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Fever</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Nausea</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Table 1: Timeline of the clinical presentation of the disease before therapeutic interventions.**

On the day of starting treatment, patient was having severe body ache, head ache, back ache, fatigue, rhinorrhea, mild nausea and dry cough. (Table 1) In the setting of remote consulting, for a subject located far distant from the physician, it was not possible to carry out a thorough physical examination. The entire assessment was based on Prashna pariksha (Interrogation) component of clinical examination.

**Diagnostic Assessment**

Positive swab test for SARS-CoV-2 by rRT-PCR assay and the clinical presentation in this case suggested that, this was ‘the confirmed case of COVID 19 with mild illness in a person without any co-morbidities’. However, in order to suggest Ayurveda medicines for any disease, its evaluation according to the theories and principles of Ayurveda is mandatory.
Based on the information obtained through *Prashna pariksha*, dominance of *Vata* and *Kapha dosha* in the *Samprapti* (pathophysiology) of the disease was recognised. Since the symptoms included *Pratishyaya* (~rhinorrhoea) and *Kasa* (~cough) along with sore throat, the involvement of *Pranavaha strotas* (~respiratory system) was identified. *Angamarda* (~Body ache), *jwara* (~fever) and *Hrullasa* (~nausea) denoted the affliction of *Rasa dhatu*. Disequilibrium of these *doshas-dhatus-strotasa-malas* was considered as a target for planning the treatment and selecting the appropriate drugs.

### Therapeutic Intervention

The therapeutic regimen was suggested on the basis of known activity of the herbs as well as their availability. Emphasis was also given on selecting a formulation method which is suitable in the presented illness and less complex to prepare in domestic setting.

#### Pharmacological therapeutic intervention

**Kwaatha (Herbal decoction):**

Few readily available Ayurvedic herbs were selected for making a decoction. Details of the formulation provided in the Table 2.

#### Table 2: Ingredients of the formulation

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Ingredient</th>
<th>Botanical name</th>
<th>Common name</th>
<th>Form</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Draksha</td>
<td><em>Vitis vinifera</em></td>
<td>Dried black raisins</td>
<td>Dried Fruits</td>
<td>3.5 gm</td>
</tr>
<tr>
<td>2</td>
<td>Haridra</td>
<td><em>Curcuma longa</em></td>
<td>Turmeric</td>
<td>Dried rhizome powder</td>
<td>2.5 gm</td>
</tr>
<tr>
<td>3</td>
<td>Shunthi</td>
<td><em>Zinziber officinale</em></td>
<td>Dry ginger</td>
<td>Dried rhizome powder</td>
<td>1.5 gm</td>
</tr>
<tr>
<td>4</td>
<td>Yashtimadhu</td>
<td><em>Glycyrrhiza glabra</em></td>
<td>Sweet liquorice root</td>
<td>Dried root powder</td>
<td>2.5 gm</td>
</tr>
<tr>
<td>5</td>
<td>Potable water</td>
<td></td>
<td>Total weight of herbs</td>
<td>10 gm</td>
<td>160 ml</td>
</tr>
</tbody>
</table>

*Kwaatha* (decocction) preparation method: All ingredients powdered and mixed together. The specified quantity of water was added and mixture was boiled to retain 1/4th part of water. Mixture strained and 40 ml decoction obtained.

- **Dose**: 40 ml decoction 3 times a day. To be consumed when warm and freshly prepared
- **Duration**: 7 days (Later decided on the basis of daily assessment)

**i. Gandusha (Gargles)**

Warm water medicated with turmeric powder was used for gargling, 3-4 times a day.

#### 2. Non pharmacological therapeutic intervention

The patient was also asked to adapt some lifestyle modifications as a part of *Pathya-apathya*. Few recommendations for maintaining the peaceful state of mind and positive psychological attitude of the patient were also suggested. (Table 3)
The patient was asked to discontinue other self-medication e.g Tab paracetamol which was consumed intermittently by the patient. He was also advised to follow the instructions given by the local healthcare provider (if any).

Follow-up and Outcomes

Daily follow up via telephonic conversation was obtained. During these follow ups patient was motivated to follow the treatment regimen as instructed.

Table 3: Pathya-Apathya (Non pharmacological therapeutic intervention)

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Pathya (Do’s)</th>
<th>Apathya (Don’ts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use of warm water for drinking throughout the day</td>
<td>Drinking cold water</td>
</tr>
<tr>
<td>2</td>
<td>Use of warm clothes that will cover the entire body in order to avoid direct exposure to external cold climatic conditions</td>
<td>Avoiding exposure to cold air</td>
</tr>
<tr>
<td>3</td>
<td>Consuming freshly cooked warm food as per the appetite</td>
<td>Eating stale, cold, heavy food</td>
</tr>
<tr>
<td>4</td>
<td>Timely and enough sleep at night</td>
<td>Day time sleeping</td>
</tr>
<tr>
<td>5</td>
<td>Chanting Omkara</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Pranayama – Anuloma viloma</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Listening to music</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Reading books on the topics that will help to boost the morale</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Regular communication with family and friends</td>
<td></td>
</tr>
</tbody>
</table>

Gradual reduction in the symptoms was observed after starting the treatment. On 3rd day of treatment, nausea subsided, rhinorrhoea and headache reduced considerably. Cough had reduced in severity but it subsided completely on 6th day of treatment. On treatment day 6, the patient’s clinical condition improved and he was asymptomatic. Up to April 29, 2020, the patient remained home quarantined. No adverse effects associated with the treatment were observed and the disease did not progress into the moderate or severe illness. The same medicines were continued as per the previous dosage even after resolution of the symptoms for 7 more days. Repeat test after resolution of
all the symptoms could not be conducted since this case was identified as the non-priority case for repeat testing in COVID-19 as per CDC guidelines. The results of the tests cannot be compared here.

**Discussion**

Our report on use of Ayurveda treatment in a confirmed case of 2019-nCoV with mild presentation illustrates few aspects about possible role of Ayurveda in managing a novel coronavirus disease of 2019. Ayurveda emphasizes on the importance of evaluating any presented illness in terms of ‘disequilibrium in the state of doshas, dhatus and malas’ as the preliminary step. The presented case was evaluated on these lines. The deranged balance of Vata dosha, Kapha dosha, Rasa dhatu and their association with Pranavaha strotas were considered responsible for manifestation of the symptoms. Rather than labelling the disease as COVID-19, we tried to identify and rectify the imbalance of body constituents according to fundamentals of Ayurveda. The herbs having known activity in such disequilibrium were selected from Ayurvedic pharmacopoeia. Activities of the selected herbs according to Ayurveda classics, on the basis of which they were selected for making formulation are described in the table. Although the herbs were selected considering their activity according to Ayurveda, we found that all these herbs also have known to show potential activity in viral diseases and flu like conditions when evaluated in modern research studies. Therefore, role of selected herbs on the basis of Ayurveda as well as modern scientific research studies in presented in the Table 5.

### Table 5: Role of pharmacological interventions according to Ayurveda and modern research studies

<table>
<thead>
<tr>
<th>Therapeutic measures (Pharmacological and nonpharmacological)</th>
<th>Effects (Ayurveda)</th>
<th>Modern pharmacological researches</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Draksha (Vitis vinifera):</strong></td>
<td>Effective in Jwara (~fever) and Shwas (dyspnoea).(^9) Shows kamlhya (beneficial for throat), Kasahara (~cough reducing), Jwarahara (~Fever reducing) and shramahara (~fatigue relieving) activities.(^10)</td>
<td>Shows antioxidant and antimicrobial activity, (^11) Known to demonstrate antibacterial activity against various microbes like S. aureus, S. epidermidis, S. pneumonia, Pseudomonas aeruginosa, Klebsiella pneumonia, Candida albicans etc.(^12)</td>
</tr>
<tr>
<td><strong>Haridra (Curcuma longa)</strong></td>
<td>Traditionally used in upper respiratory tract diseases because kaphaghna activity.(^13) Vishaghna (eliminates effects of poison).(^14)</td>
<td>Anti-inflammatory and antioxidant property.(^15) Shows antiviral activity(^16) Modern research studies have reported its direct effect on viral particle infectivity in H1N1 and H6N1 subtype. Also, viruses did not develop resistance to curcumin.(^17)</td>
</tr>
<tr>
<td><strong>Shunthi (Zingiber officinale):</strong></td>
<td>Effective in stabilising Kapha and Vata doshas, specifically in diseases like Vam (~Vomiting), Shwasa (~Dyspnoea), Kasa (~Cough) and Hrudaya rogas.(^18)</td>
<td>It shows warming effect upon oral consumption. Shows antiviral activity and useful in treatment of cold and flu, respiratory and digestive diseases.(^19) The polyphenolic-rich ginger fraction had shown inhibition of the activities of isolated a-glucosidase and angiotensin converting enzyme.(^20) Prevents viral replication and also intervene in the process of virus-host fusion.(^21)</td>
</tr>
</tbody>
</table>
Role of Non-pharmacological measures

Ayurveda strongly believes in the role of diet, sleep, daily activities, behaviour, lifestyle and state of mind in maintaining the health. Desired changes in these factors are suggested to patient along with the medicines as a complete plan of action. In the current case, it was necessary to avoid any factor that aggravates *vata* and *kapha* since these 2 *doshas* were already aggravated. Also, in order to preserve and increase the strength of *Agni*, various dietary recommendations were suggested. Considering psychological impact of the disease on patient, activities that will be beneficial for mental relaxation and help in increasing strength of body and mind were suggested as *pathya-apatya*. Suggested diet & lifestyle measures and their role in managing the present condition is described in Table 5.

| Yashtimadhu (Glycyrrhiza glabra): | Jeevaniya (~Vitaliser), Kanthya (beneficial for throat), Angamardaprasamana (body ache relieving) balakrit (strengthening), Shukrala (Invigourating), Swaryya (promoting quality of voice) | Antioxidant, anti-inflammatory and Immunomodulatory activities. Shows prominent antiviral activity by inhibiting the virus cell binding. Glycyrrhizic acid present in liquorice inhibits virus growth and inactivates virus particles. G. glabra stopped viral replication in influenza virus in some animal studies. Assist Immune stimulation by stimulating macrophages. Studies have also revealed that, Glycyrrhizin obtained from Glycyrrhiza glabra was previously used to treat patients suffering from HIV-I and chronic hepatitis C virus. It also targets viral replication and virus cell binding of SARS-CoV. |
| Haridra Gandusha (turmeric gargles) | Gandusha (gargling) is traditionally practiced to promote healthy state of oral cavity, throat and associated organs. It promotes the host mucosal immunity of oral cavity and throat which helps in controlling infectious agents. Liquid used for gargling can be fortified with 1 or more herbs to impart specific activity. Haridra (Curcuma longa) shows effective *Kaphaguna, vishaguna* activity and helps to alleviate URTI related symptoms hence it was used to fortify water used for gargling. | Gargles with turmeric medicated decoctions have shown beneficial effects in postoperative sore throat, oral ulcers and bacterial growth. |
With all these treatment measures, the patient experienced satisfactory clinical improvement within 6 days of starting the treatment. It can be stated that, therapeutic regimen and specifically the herbal decoction helped to re-establish the equilibrium of Vata and Kapaha dosha. Shunthi, Haridra and Yashtimadhu are anti-inflammatory and antiviral herbs that help in appetite stimulation, digestion and also act as anti-emetics thus their decoction helped to provide clinical improvement. Yashtimadhu also acts as an expectorant and demulcent which might have helped to reduce irritation of upper respiratory tract and reduce symptoms like sore throat and cough. Rest of the treatment measures further helped in controlling the progression of the disease by regulating the Vata and kapha doshas as well as by preserving the strength of agni (digestive fire).

### Conclusion

Albeit with a single case study it can’t be stated that this is the only effective management for COVID-19, there rises a possibility that, the Ayurvedic approach of clinical assessment, use of safe herbal formulations and diet-lifestyle modification might emerge as a suitable measure to provide supportive care and improve the quality of life in large group of COVID-19 cases with mild illness even via remote consultation or using telemedicine services.

### Acknowledgement

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### References


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