Case study: Ayurvedic approach as an adjuvant therapy in the management of COVID-19

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Abstract

The Corona Virus disease 19 (COVID-19) pandemic is unique and unprecedented in several aspects and has challenged health care systems. In spite of advanced modern medicine still there is no any sure treatment available which cures COVID-19 patient completely. Ayurveda has ability to cure the disease as well as ability to reduce its complication.

Material and Method: A 54 years female, medium built patient was admitted in our hospital which is tested COVID-19 RT-PCR positive, having complaints of dry cough, dyspnea on exertion, fever, body ache, Headache on & off, generalized weakness. Treatment was given i.e. Ayurvedic as well as modern medicine.

Results: Patient started improving from day 4th and at the end of 10th day there was a good improvement in all the symptoms.

Discussion: We report this case to show that COVID-19 is a condition where focused Ayurvedic treatment, if given, may prevent the deterioration of the disease into a more critical condition. This is also an invaluable opportunity for demonstrating the efficacy of Ayurveda.

Keywords: Covid-19; Pandemic; Ayurveda; Janapadhwansa Vikara

1. Introduction

The whole world is faced with major health crisis following the global pandemic of COVID-19. Severe Acute Respiratory Syndrome Corona Virus-2 (SARS CoV 2) is a Pandemic disease caused by Novel Corona Virus [1]. This disease is contagious. COVID-19 is a rapidly changing and evolving situation. The overall world population has been facing the aftermath of Pandemic on physical, mental and economic levels. World Health Organization (WHO) is constantly monitoring it and updating the information available regarding its spread, mortality, and morbidity. So far in Modern Western Medicine (MWM), no cure has been found which is specific to COVID-19. From the Ayurvedic point of view, COVID-19 is a Janapadodhwansa Vikara (epidemic disease). The concept of an epidemic is described in Charaka Samhita: Vimana Sthana, Chapter 3[2]. Factors which are common for all the inhabitants of a country are air, water, location and seasons. [3] Janapadodhwansa is a situation where the environment air, water, land and seasons is vitiated, causing a simultaneous manifestation of a disease among large populations (epidemic) and destroying human habitations [4]

COVID-19 is a Novel disease i.e. Anuktavyadhi according to Ayurveda. [4] One should not be ashamed of one’s inability to name a disease, since all disorders cannot be given standard names. There are innumerable diseases because the same vitiated Dosha causes various disorders according to variations in etiology and location.

This article contains case study, where a patient of COVID-19 disease, tested positive with mild to moderate symptoms admitted in our hospital. Managed with Ayurvedic along with modern medicine and get fully relieved of his symptoms.
As COVID-19 is a new disease, so a detailed study of the etiology (Nidana), status of Tridosha, structural elements (Dushya) and site of disease (Sthan) is discussed in this article.

Aim and Objectives
- To study the Ayurvedic medicines in the management of COVID-19
- To compare the ancient Ayurvedic knowledge with the recent pandemic of COVID-19

2. Case Presentation

2.1. Patient information
A 54 years female, medium built patient was admitted in our hospital, who was tested COVID-19 RT-PCR positive.

2.2. Symptoms
Jwar on and off since 2-3 days

Alpa Shushka Kasa since 2 days

Ayasen Shwaskashthata since 2-3 days

Dourbalya, Agnimandya since 7-8 days

2.3. Samanyaparikshana
- Pulse – 98/min; Nadi – Vataj
- B.P. – 140/70 mm of Hg; Mala - Asamyaka
- RS – B/L basal crepts; Mutra - Samyaka
- CVS – S1S2 normal; Jivha - Saama
- CNS – Conscious oriented; Kshudha – Mandya
- P/A – Soft; Shabda – aspasta
- RR – 30/min; Sparsha - Ushna
- SPO2 – 94 % @ R.A; Druka – Prakruta
- Temp. – 93.2°F; Aakruti - Madhyama

Details of the symptoms, number of days it lasted, tests performed and medicines recommended are given below in Table.

2.4. Past Medical History
Patient was a known case of Diabetes mellitus and Hypertension along with Ischemic heart disease since 10-12 years and on regular medications.

2.5. Diagnosis
Diagnosis was made on the basis of symptoms, season and RT-PCR COVID-19 test.[5]

CXR (P/A) view

2.6. Ayurvedic interpretation of the patient condition
2.6.1. Samprapti Ghatak
- Dosha - Kapha - Vaata – Pitta
- Dushya - Rasadidhatu
- Vyadhiswabhav - Ashukari
- Srotas - Rasavaha, Pranavaha, Annavaha
- Vikarprakruti – Darun
2.6.2. HETU
Pradnyaparadha+ Janapadodhwansa + Aoupsargika Vyadhi

Pradnyaparadha\[^6\]
Contravening the rules & regulation of – lockdown, social distancing, travelling, staying at home, and use of Mask.

Janapadodhwansa
Factors which are familiar to the people under a particular community like air (Vayu), water (Jala), region (Desha), seasons (Kala), sinful acts (Adharma) in the form of war are responsible for Janapadodhwansa.

Aoupsargika Vyadhi\[^7\]
According to the Sushrut Samhita, expired air or inhalation of a droplet from an infected person (Nishvasat), eating in the same plate with others (Sahabhojanat), sharing beds (Sahashayyasanat), using clothes, garlands & utensils used by an infected person (Vastramalyanulepanat) can be considered as the mode of transmission of COVID-19 pandemics.

Purvaroop
Agnimandya, Angamorda, Mandjwara

Roop
Increased Agnimandya, Angamard, Jwara, Shwas, Kasa

2.6.3. Samprapti
### 2.7. Treatment given

**Table 1** Assessment & Treatment Protocol

<table>
<thead>
<tr>
<th>Day</th>
<th>Symptoms</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Dry cough</td>
<td>Aayushkwath Vati 2 BD</td>
</tr>
<tr>
<td></td>
<td>Dyspnea on exertion</td>
<td>Sukshmatriphala Vati 2 TDS</td>
</tr>
<tr>
<td></td>
<td>Fever on and off</td>
<td>Sanshamani Vati 2 TDS</td>
</tr>
<tr>
<td></td>
<td>Body ache</td>
<td>Dhatrinisha Vati 2BD</td>
</tr>
<tr>
<td></td>
<td>Headache on &amp; off</td>
<td>Vishan Yoga (Rasasindoor 125 mg + Shrunga Bhasma 250 mg + Pooshkarmool 500 mg + Sitopaladi Churna 1 gm = 1 TSF TDS with koshnaJala)</td>
</tr>
<tr>
<td></td>
<td>Generalized weakness</td>
<td>Twakadi Dhoopan TDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hemgharbh Pottali Rasyan Chatan with AdrakSwaras QID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haridralavanjala Kaval TDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inj. MPS 40 mg IV stat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inj. H. Actrapid Insulin according to BSL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Azee 500 1 OD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Telma-AM (40+5) 10D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Glycomate SR 500 mg 1BD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Vit C 1 OD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Supradyn 1 OD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cap. Ecosprin AV 150/20 1HS</td>
</tr>
<tr>
<td>Day 2</td>
<td>Dry cough</td>
<td>Aayushkwath Vati 2 BD</td>
</tr>
<tr>
<td></td>
<td>Dyspnea on exertion</td>
<td>Sukshmatriphala Vati 2 TDS</td>
</tr>
<tr>
<td></td>
<td>Fever on and off</td>
<td>Sanshamani Vati 2 TDS</td>
</tr>
<tr>
<td></td>
<td>Body ache</td>
<td>Dhatrinisha Vati 2BD</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
<td>Vishan Yoga (Rasasindoor 125 mg + Shrunga Bhasma 250 mg + Pooshkarmool 500 mg + Sitopaladi Churna 1 gm = 1 TSF TDS with koshnaJala)</td>
</tr>
<tr>
<td></td>
<td>Generalized weakness</td>
<td>Twakadi Dhoopan TDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hemgharbh Pottali Rasyan Chatan with AdrakSwaras QID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haridralavanjala Kaval TDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inj. Dexa 4 mg IV BD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inj. H. Actrapid Insulin according to BSL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Azee 500 1 OD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Telma-AM (40+5) 10D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Glycomate SR 500 BD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Vitamin C 1 OD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tab. Supradyn 1 OD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cap. Ecosprin AV 150/20 1HS</td>
</tr>
<tr>
<td>Day 3</td>
<td>Mild dry cough</td>
<td>Same medicine continued</td>
</tr>
<tr>
<td></td>
<td>Dyspnea on exertion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mild fever</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Body ache</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1** Samprapti of Disease
| Day 4 | Headache Generalized weakness↓
| Dry cough ↓ ↓
| Dyspnea on exertion
| Fever ↓
| Body ache ↓
| Headache↓
| Same medicine continued

| Day 5 | Dyspnea ↓
| Fever
| Body ache ↓
| Weakness 25-30%
| Headache
| Aayushkwath Vati 2 BD
| Sukshmatripahala Vati 2 TDS
| Sanshamani Vati 2 TDS
| Dhatrinisha Vati 2BD
| Vishan Yoga (Rasasindoor 125 mg +
| ShrungraBhasma 250 mg + Pooshkarmool 500 mg+SitopaladiChurna 1gm) = TDS
| with Kosnajala
| TwakadiDhoopan TDS
| Hemgarbha Pottali Rasayan Chatan with AdrakSwaras QID
| Haridralavanjala Kaval TDS
| Inj. H. Actrapid Insulin according to BSL
| Tab. Azee 500 1 OD
| Tab. Telma AM (40+5)1OD
| Tab. Glycomate SR 500 1BD
| Tab. Vitamin C 1 OD
| Tab. Supradyn 1 OD
| Cap. Ecosprin AV 150/20 1HS

| Day 6 | 30-40 % relief in all below symptoms -
| Dry cough
| Dyspnea on exertion
| Fever
| Body ache
| Headache
| Generalized weakness
| Same medicine continued

| Day 7 | 40-50% relief in all symptoms.
| Aayushkwath Vati 2 BD
| Sukshmatripahala Vati 2 TDS
| Sanshamani Vati 2 TDS
| Dhatrinisha Vati 2 BD
| Vishan Yoga (Rasasindoor 125 mg +
| ShrungraBhasma 250 mg + Pooshkarmool 500 mg + Sitopaladi Churna1 gm )= 1
| TSF TDS with kosnajala
| Twakadi Dhoopan TDS
| Haridralavanjala Kaval
| Tab.Telma–AM (40+5) 1OD
| Tab. Glycomate SR 500mg BD
| Tab. Vit C 1 OD
2.8. Details of Ayurvedic Management

2.8.1. Aayushkwath Vati[8]

Table 2 Drug Content & Mode of Action of Aayushkwath Vati

<table>
<thead>
<tr>
<th>Name</th>
<th>Latin name</th>
<th>Doshghnata</th>
<th>Mode of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tulasi</td>
<td>Ocimum sanctum (Linn.)</td>
<td>Kapha – Vatahara</td>
<td>Vishamajwarahara, Shwaasa-Kasaghna, Bhutaghni</td>
</tr>
<tr>
<td>Shunthi</td>
<td>Zinzeberofficinale (Roxb.)</td>
<td>Kapha – Vatahara</td>
<td>Deepan, Pachana, Jwarahara</td>
</tr>
<tr>
<td>Krishna Marich</td>
<td>Piper longum (Linn.)</td>
<td>Kapha – Vatahara</td>
<td>KasaShwasahara, Rasayan</td>
</tr>
<tr>
<td>Dalchini</td>
<td>Cinnamomum zeylanicum (Breyrn.)</td>
<td>Kapha – Vatahara</td>
<td>Deepan, Pachan, Vataanulomana, Ojovardhak</td>
</tr>
</tbody>
</table>

2.8.2. Sukshma TriphalaVati

Table 3 Drug Content & Mode of Action of Sukshma TriphalaVati

<table>
<thead>
<tr>
<th>Name</th>
<th>Latin name</th>
<th>Doshoshhara</th>
<th>Mode of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amalaki</td>
<td>Emblica officinalis (Gaertn.)</td>
<td>Tridoshahara</td>
<td>Rasayan, Vibandhahar, Pramehawkhna</td>
</tr>
<tr>
<td>Haritaki</td>
<td>Terminalia chebula (Retz.)</td>
<td>Tridoshahara</td>
<td>Rasayan, Malashodhak, Pramehawkhna, Kasaghna</td>
</tr>
<tr>
<td>Bibhitaki</td>
<td>Terminalia bellerica (Roxb.)</td>
<td>Kaphaguna</td>
<td>Bhedan, Kasaghna, Krimighna,Swarbhedahar</td>
</tr>
<tr>
<td>Guduchi</td>
<td>Tinospora cordifolia (Wild.)</td>
<td>Tridoshahara</td>
<td>Rasayan, Jwaragha, Hrudya, Krimihara, Swas-Kasahara</td>
</tr>
<tr>
<td>Haridra</td>
<td>Curcuma longa (Linn.)</td>
<td>Kaphapittahara</td>
<td>Shothaghna, Kasaghna,Mehahara,</td>
</tr>
<tr>
<td>Kajjali</td>
<td>Black Sulphide Of Mercury</td>
<td>Tridoshahara</td>
<td>Jantughna, Saptadhatuvardhan,</td>
</tr>
</tbody>
</table>

2.8.3. Samshamani Vati[9]

Table 4 Drug Content & Mode of Action of Samshamani Vati

<table>
<thead>
<tr>
<th>Name</th>
<th>Latin name</th>
<th>Doshoshhara</th>
<th>Mode of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guduchi</td>
<td>Tinosporacordifolia</td>
<td>Tridoshahara</td>
<td>Rasayan,Jwaragha, Hrudya, Krimihara, Shwas-Kasahara</td>
</tr>
</tbody>
</table>
2.8.4. Dhatrinisha Vati

**Table 5 Drug Content & Mode of Action of Dhatrinisha Vati**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Content</th>
<th>Mode of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amalaki</td>
<td><em>Embilicaofficinalis</em> (Gaertn.)</td>
<td>Rasayan,vibandhahar, Pramehagha</td>
</tr>
<tr>
<td>Haridra</td>
<td><em>Curcuma longa</em> (Linn.)</td>
<td>Shothaghna, Kasagha, Mehaha,</td>
</tr>
</tbody>
</table>

2.8.5. Vishan Yoga

**Table 6 Drug Content & Mode of Action of Vishan Yoga**

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Doshghnata</th>
<th>Drug Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rasasindura[10] (Shuddhaparad, Shuddhagandhak, Shuddhanavasagar)</td>
<td>Balances Vata, Pitta, Kapha Kaphahara</td>
<td>Rasayan, Shothahara, Shwas - Kasahar, Shwasanakjwarahara</td>
</tr>
<tr>
<td>Sitopaladichoorna[13] (Sitopala, Pippali, Ela, Twaka)</td>
<td>Tridoshahara</td>
<td>Shwaskasaghna, Kanthya, Swarya, Agnivardhaka, Aruchinashaka</td>
</tr>
</tbody>
</table>

2.8.6. Hemgharbh Pottali Rasayan

**Table 7: Drug Content & Mode of Action of Hemgharbh Pottali Rasayan**

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Latin name</th>
<th>Doshghnata</th>
<th>Drug Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shuddha Parada</td>
<td>Purified mercury</td>
<td>Tridoshahara</td>
<td>Sukshmasrotas, Yogavahi</td>
</tr>
<tr>
<td>Shuddha Gandhak</td>
<td>Purified sulphur</td>
<td>VataPittashamak</td>
<td>Veeryakara, Pushikara, Drudhadeha, Vahnikara, Prajakara</td>
</tr>
<tr>
<td>Swarna Bhasma</td>
<td>Gold bhasma</td>
<td>Tridoshahara</td>
<td>Ayurkaram, Rasayan, Prabhakaram, AkhilaVyanhiVidhwansi, Bhutavashaprashti, Pushi-Parakshi</td>
</tr>
<tr>
<td>Tamra Bhasma</td>
<td>Copper bhasma</td>
<td>Pitta kaphashamak</td>
<td>Rasayan, Balya</td>
</tr>
<tr>
<td>Kumari Swaras</td>
<td>Aloe vera juice extract</td>
<td>Vatt Pitta Shamak</td>
<td>Bhedeni, Rasayan, Bhruhan, Jawarhar</td>
</tr>
</tbody>
</table>

2.9. Twakadi Dhoopan

2.9.1. Ingredients

Twaka, Ela, Tamalpatra, Vala, Chandan, Nagakeshara, Renukbeja, Agaru Padmakashta, Musta.
Use - main action and properties of Dhoopan Dravyas are antimicrobial, antiviral, antifungal. Fumigation with the help of these drugs destroys worms and germs in environment.[14]

3. Discussion

3.1. Limitations

Since this is a single case study, it calls for a larger sample to be studied, before we can develop a standard protocol for the treatment of COVID-19. The physical distance between the patient and doctor made it difficult to examine and observe the patient directly. There are a large number of Ayurvedic medicines that are currently in use for all types of Vata-Kaphaja and Sannipatajajwara which may prove to be effective for COVID-19.

3.2. Strengths

It is noticed that the patient’s condition did not deteriorate. So it can be presumed that the management of COVID-19 with the given Ayurvedic medicines arrested the progress of the disease to a more serious state. Despite the patient having cough and fever, the patient did not worsen and develop severe breathlessness. This patient had recovered in 10 days. Hence it can be said that the duration of the disease was presumably shorter because of the Ayurvedic medicines.

The regulated diet played an important supportive role in the cure. The diet was advised so that it did not further aggravate the Doshas, it was easy to digest (Laghu), it stimulated the digestive fire (Agni Deepanam) and it nourished the patient. The diet recommended for the patient, namely soup made of moong dal and cooked parboiled rice is included in the recommended diet in management of fevers. These are two of several preparations as described in the texts, as part of a larger detailing of food preparations and their effects on Doshas and diseases. We report this case to show that COVID-19 is a condition where usage of Ayurvedic medicines & diet might have contributed to the case not turning critically ill.

Rsayan Chikitsa is recommended for treatment of Janapadoshwamsa. It helps to maintain systemic and local immunity (Vyadhikshamatva) of an individual. Vyadhikshamatva of an individual is directly proportional to strength of that individual. Strength is Bala which is Dehabala (Body strength), Agnibala (Digestive capacity) and Manobala (Mental strength).[15]
Hereby showing the chest x-ray of patient admitted taken on day 1st, day 5th and day 10th respectively numbered 1, 2 and 3.

- Chest x-ray suggestive of bilateral lower lobe haziness. On auscultation, patient had bilateral lower lobe crepts, mild exertional dyspnoea, with cough and fever.
- Chest x-ray suggestive of increased bilateral lower lobe haziness. On auscultation, patient had bilateral lower lobe crepts, mild exertional dyspnoea, with cough and fever. Patient was stable and didn’t deteriorate.

Chest x-ray suggestive of decreased bilateral lower lobe haziness. All symptoms including exertional dyspnoea, cough and fever were decreased. On auscultation, breathing sounds were clear.

4. Conclusion

We report this case to show that COVID-19 is a condition where focused Ayurvedic treatment, if given, may prevent the deterioration of the disease into a more critical condition. This patient’s presentation was not mild. But he didn’t become critically ill owing to Ayurvedic intervention and regulated diet. India is in a position to use the wealth of knowledge available in the Indian Systems of Medicine, to cure this disease and control the epidemic. This is also an invaluable opportunity for demonstrating the efficacy of Ayurveda.

Compliance with ethical standards

Acknowledgments

We express our gratitude to the Department of Kayachikitsa and Hospital Authority for giving us this opportunity to study this particular case: Ayurvedic approach as an adjuvant therapy in the management of COVID-19. Special thanks to Secretary of Maharashtra Arogya Mandal’s Secretary, Hon’ble Mr. Anil Gujar, Hon’ble Principal Dr. Nilesh Phule and Faculty members for co-operating, also thanks to the teachers Dr. Ritesh Damle, Dr. Kiran Ubhe, for guiding throughout to provide better management of the patient. Many thanks to my colleagues, as we got to learn many new things while studying the case and our knowledge regarding the subject has been increased.

Disclosure of conflict of interest

The authors declare that there was no conflict of interest regarding the publication of manuscript.

Statement of informed consent

Informed consent was obtained from the individual participant included in the study.

References

[1] https://www.who.int/health-topics/coronavirus#tab=tab_1


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**Author's short Biography**

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