



Case Report

Ayurvedic evaluation and treatment of Covid 19: A case report

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ABSTRACT

COVID-19 patients, with underlying comorbidities are observed to develop complications. Studies have shown that hypertension (one of the comorbidities) is a risk factor for patients with severe COVID-19. There have been more patients with hypertension among those who succumbed to COVID-19 compared to the survivors. There is no proven treatment of COVID-19 as of now. Ministry of AYUSH, Government of India, has permitted use of traditional systems of medicine for treating mild to moderate cases of COVID-19. In line with this, there are few case reports which reported promising results for treatment of COVID-19 with Ayurveda. These treatment reports highlighted subdued COVID-19 infections without developing serious complications. The present case is of a young hypertensive female patient who was diagnosed with COVID-19. Ayurvedic assessment for this was Kaphavatajwara. The patient sought Ayurvedic treatment. She was advised the treatment module including medicines, diet and behavioral interventions. Though patient was having comorbid hypertension with major COVID-19 symptoms, she recovered with exclusive Ayurvedic treatment both physically as well as psychologically with no post COVID-19 complications till date. Ayurvedic treatment module appears to be safe and efficacious with early recovery and better outcomes.

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1. Introduction

India is the second most affected country by COVID-19 with 8.14 million cases. Pune (Maharashtra) has one of the highest case-loads in India. Conspicuously, Pune also has high density of Ayurvedic Practitioners indicating its awareness about Ayurveda. The patient in this case report belongs to Pune. Ministry of AYUSH, Government of India, has permitted use of traditional systems of medicines as authorized treatment for mild to moderate cases of Covid 19 disease [1].

This young female patient who diagnosed with Covid-19 (RT-PCR) was hypertensive. COVID-19 patients with comorbid hypertension are reported to have worse outcomes including rise in infection severity or complications leading to mortality [2]. The patient willingly chose to undertake Ayurvedic treatment. Despite

of comorbid hypertension, this patient recovered physically and psychologically in a short duration of 30 days with no post Covid-19 complications till date. This case report can be a demonstration for examining and treating COVID-19 cases accompanied by a comorbid hypertension with Ayurveda effectively and safely.

1.1. Patient information

A 37 years, female, medium statured (Weight: 49 kg, Height: 155 cm), software engineer by profession, from Pune, India, approached to her Ayurvedic family physician on 28/07/2020. Patient is known case of Hypertension since 2019 and was on Ayurvedic medication for the same. She was having fatigue, fever 100 °F, irritation in throat and myalgia. Her Blood pressure was 134/90 mmHg. Patient felt above symptoms three days after her colleague found COVID-19 positive.

Ayurvedic examination for current symptoms was conducted with all precautions. Fatigue (*Vata* domination), Fever (*Kapha Vata* dominated *Jwara*), irritation in throat (*Kapha* vitiation), myalgia (*Kapha and Vata* vitiation), hypertension in her case (*Vata Pitta*

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vitiation) was analysed as *Kapha Vata* vitiation. Her body constitution is *Vata Pitta Prakriti*, Medium *sattva* (Psychic state), *Agni-mandya* (Low digestive power), *Nadi* (Pulse): *Pittapradhan*, *Vatanubadhi*, Tongue: *Sama* (coated), *Koshtha*: Medium (nature of digestive tract), *Mala* (Faeces): *Sama mala* (Foul smelling, sticky stools), *Mutra* (Urine): pale yellow, 6 to 7 times per day, no burning sensation. All Ayurvedic finding leads to diagnosis as *Kapha Vataj Jwara*.

Patient was advised to get COVID-19 RT-PCR swab test done on the same day which came positive for Covid 19 disease. Patient isolated herself at home as per the instruction of concerned doctor from Government authorized COVID Centre. She telephonically contacted her Ayurvedic physician after isolating herself. The conversation cum consolation relieved the family stress after which Ayurvedic treatment was initiated. Home isolation, sanitary practices and monitoring of blood pressure, pulse rate, peripheral oxygen saturation were advised and instructed. Written informed consent for Ayurvedic treatment and case report publication was obtained from patient.

1.2. Family history

Patient's father is known case of type 2 diabetes along with Hypertension and on prescribed medicines by modern medicine practitioner. The patient's mother's diabetes and gout are under control. She is having good control over with prescribed Ayurvedic medicines. Patient's brother and elder sister are asthmatic and are on Ayurvedic prescribed medicines.

1.3. History of past illness

Patient had Ankle joint swelling (2015), Urticaria (2016), Hyperacidity (2017), Weight gain (2018), Headache (2018), Hypertension (2019). Patient was treated with Ayurvedic medicines for above mentioned complaints successfully. Her hypertension is in control with Ayurvedic treatment regime. Earlier in July 2020, she was consulted for *Garbhasanskara* (Ayurvedic prenatal care) and advised *Padmakashtha Phanta*- 30 ml twice a day, *Tab Uterotone* - 250 mg twice a day, *Shatavari Kalp* - 10 gms once a day & *Shamaka Yoga* 2.5 gm twice a day. She was on the above prescription from 27.06.2020 for a period of one month. She stopped these medicines with development of fever.

Diet pattern prior to illness- Breakfast (8–8.30am): *Paratha/Shira/Uпита* followed by Milk, Lunch (1–2pm): Vegetarian-*Chapati*, vegetables curry, salads. An evening tea (6.30–7pm) with light snack- Fruits/*Vadapav/poha*, Dinner (8.30–9pm): *Bhakari*, rice, dal, vegetables/*khichadi*. Exercise-not regular.

Considering the pathophysiology and prognosis of disease, the treatment was planned under 3 stages. Stage 1- *Sama Avastha* (Fever accompanied with *Aama*) In this stage, *Shrungyadi* Decoction, *Dwatridashang* Decoction, *Bilvadi gutika*, *Sitopaladi churna* and *Shadangodaka* were prescribed along with *Dashanga Dhupana*. After achieving Low *Kapha* state, *Sitopaladi churna* was started as Stage 2 (*Kapha Ksheenavastha*) medicine. For enhancing *Agni* and *Bala* (stage 3), *Drakshasava* was advised. Only herbal Ayurvedic medicines were prescribed to the patient along with diet and behavioral regimen which are mentioned in detail in [Table 1](#) and [Table 2](#).

1.4. Follow up and outcomes

After diagnosis and till recovery every follow-up was taken telephonically. After positive detection of RTPCR for Covid 19, further investigations were advised, LDH, D-Dimer, CRP, Sr. Ferritin and HRCT. Monitoring of blood pressure, pulse rate, peripheral

oxygen saturation was advised. All further follow ups were undertaken telephonically, as mentioned in [Table 1](#). The patient recorded and reported the vital check points regularly. This helped us to diagnose the stages of the disease and recommend medicine prescription accordingly ([Table 2](#)). Patient tolerated Ayurvedic treatments well and was compliant. Any adverse or unanticipated events were not observed.

2. Discussion

Patient experienced fatigue, fever 100 °F, irritation in throat, myalgia and hypertension (134/90 mmHg). Ayurvedic assessment confirmed *Kapha Vataj Jwara*. Diagnosis was made considering current pandemic, present symptoms, past illness, comorbidities, season, basic body constitution, vitiated body *Dosha* and *Ama* (body toxins).

The configuration of vitiated *Dosha* shows dominance of *Kapha* and *Vata* with adjunctive *Pitta*. Impairment of body tissues: *Rasa* and *Rakta Dhatu*; *Mala* (Excretory products): *Sweda* (Sweat), *Mutra* (Urine), *Purisha* (Feces); *Srotas* (Channels): *Pranavaha*, *Raktavaha*, *Manovaha srotas* were noticed. *Sthansanshraya* (Site of disease manifestation) was *Pranvaha srotas* (Respiratory system). *Kapha Vataja Jwara*, a type of fever was confirmed. Ayurveda has explained different shades of fever depending upon involvement of *Dosha*, *Dushya*, *Kala* and causative factors. This multifactorial aspect of Ayurveda encompasses maximum infective pathologies and helps understanding new and emerging fevers [10]. There are countless Ayurvedic prescriptions that are presently being used for a wide range of *Kapha-Vataja* and *Sannipataja* (fatal combination of all three *Doshas*) *Jwara* which may end up being successful for COVID-19.

COVID-19 patients with hypertension were more likely to have severe pneumonia, excessive inflammatory reactions, organ, tissue damage and deterioration of the disease than patients without hypertension [11]. The prognostic outlook of COVID-19 in Ayurveda perspective can be understood as *Jwara* (In this case - *Kapha Vata* Fever) – *Raktapitta* (Hematic pathologies – *Kapha-Vata* dominated)– *Shwasa* and *Kasa* (Severe respiratory distress – *Kapha Vata* dominance). Development of another disease on the background of the earlier disease. Ayurveda has explained the chapters in same way. In the diagnostic part, different pathologies of fever has been elaborated, keeping *Rasadhatu* at centre. *Pitta* is the essential driver of *Jwara* which is also key factor for *Raktapitta*. In majority of cases consistent fever is responsible for blood pathologies. Embryologically, respiratory units are the byproduct of *Rakta Dhatu* according to Ayurveda [12] which shows close resemblance to COVID-19 prognostic view. Vitiated *Kapha* and *Vata* are responsible for thrombus formation which can be understood as coagulopathies in COVID-19. Ayurvedic diagnosis was very challenging considering current limitations in examining a patient. Interpretation of Covid pathology, prognosis and treatment in Ayurvedic way was a challenging task. It was important but difficult to keep patients morale high throughout the course.

Considering this appropriate Ayurvedic medicines, diet and regimen were advised. The treatment was planned in three stages -Stage 1: *Amapachana* and *Doshapachana* treatment (Digestion of indigested body toxins), Stage 2: after achieving *Kapha ksheen* stage [13] (low *Kapha*)- *Vata* and *Pitta* pacification treatment, Stage 3: For enhancing *Agni* (Digestion) and *Bala* (Strength). In *Sama avastha* (Indigested toxins), *Amapachana* and *Doshapachana* was aimed. Patients symptoms, *Doshaavastha* (state of vitiated *Dosha*) and prognosis were taken in account for medicine selection. Medicines having *Kapha*, *Vata*, *Ama* pacifying effects were preferred contemplating *Kapha Vata* dominance. *Kanthakubja Sannipata*, a type of fatal *Jwara* lists close symptoms and prognosis as COVID-19. *Shrungyadi*

Table 1
Timeline - Disease symptoms, Diagnostics & Treatment course summaries.

Date/Day	Symptoms	Investigations	Treatment
28/07/2020-Day 1	Fatigue, Fever 100 °F, Throat irritation, Myalgia	Reverse transcription polymerase chain reaction (RT-PCR) = Positive at Government authorized center, Pune, India. Blood Pressure = 134/90 mmHg	Day 1–9: a) <i>Shrungyadi</i> Decoction [3]: 40 ml, Morning. b) <i>Dwatridashang</i> Decoction [4]: 40 ml, Night c) <i>Bilvadi gutika</i> [5] 250 mg- thrice a day d) <i>Sitopaladi churna</i> [6] 5 gm Morning & Evening. e) <i>Shadangodaka</i> [7]- Medicated water f) <i>Dhupana</i> (Fumigation): <i>Dashanga</i> [8] <i>Dhupana</i> twice a day.
29/07/2020-Day 2	Sever fatigue, Fever 101 °F, Cough, Myalgia, Tastelessness, Anosmia, Headache	SpO ₂ = 97% Pulse rate = 98 bpm Blood pressure = 130/90 mmHg	Same medicines continued
30/07/2020-Day 3	Sever fatigue, Fever 100 °F, Mild cough, Mild myalgia, Mild headache, Tastelessness & Anosmia continued	SpO ₂ = 99% Pulse rate = 92 bpm Blood pressure = 130/80 mmHg	Same medicines continued
31/07/2020-Day 4	Fatigue, Fever 100 °F, Mild cough, Mild myalgia, Headache, Tastelessness & Anosmia continued	SpO ₂ = 98% Pulse rate- 88 bpm Blood Pressure = 128/78 mmHg	Same medicines continued
1/08/2020-Day 5	Mild Fatigue, Mild Myalgia, No cough but throat irritation, No Fever, No Headache, Taste and Smell sensation partially restored.	SpO ₂ = 99% Pulse rate- 93 bpm Blood Pressure = 128/80 mmHg	Same medicines continued
2/08/2020-Day 6	No body ache, No fever, Most of symptoms disappeared, Taste and Smell sensation partially restored.	SpO ₂ = 99% Pulse rate- 90 bpm Blood Pressure = 124/80 mmHg	Same medicines continued
3/08/2020-Day 7	Partially tastelessness	SpO ₂ = 99% Pulse rate- 91 bpm Blood Pressure = 120/78 mmHg	Same medicines continued
4/08/2020-Day 8	Partially tastelessness	SpO ₂ = 99% Pulse rate- 89 bpm Blood Pressure = 120/80 mmHg	Same medicines continued
5/08/2020-Day 9	Asymptomatic	SpO ₂ = 99% Pulse rate- 87 bpm Blood Pressure = 120/80 mmHg	Same medicines continued
6/08/2020-Day 10 - 20/08/2020-Day 24	Asymptomatic	SpO ₂ = 99% Average Pulse rate: 79 bpm. Average Blood Pressure = 120/82 mmHg	Day 10-Day 24 1) Above medicines stopped 2) <i>Sitopaladi churna</i> 5 gm Morning & 5 gm Evening.
21/08/2020-Day 25 - 26/08/2020-Day 30	Asymptomatic	Rt-PCR= Negative Govt. authorized laboratory LDH = 261.8 U/L D-Dimer = 441 ng/ml CRP = 5.4 MG/L Sr. Ferritin = 72 ng/ml Average SpO ₂ – 99% Average Pulse rate: 74 bpm Average Blood pressure 120/80 mmHg	1) Above medicines stopped. 2) <i>Drakshasava</i> [9] 10 ml–10ml post lunch and Dinner for 15days.
26/08/2020-Day 30	Patient offered physical visit at clinic. Found physically and psychologically healthy.	HRCT- Minimal fibrotic scarring in bilateral lung bases. No other significant abnormality detected. Blood pressure = 120/84 mmHg Pulse rate = 78 bpm SpO ₂ = 99% P.E.F.- 530 lit/min	1) <i>Drakshasava</i> 10 ml–10ml post lunch and dinner for 10days

decoction [3] has been mentioned as prominent medicine for the same. Contents of *Shrungyadi* decoction are helpful in *Ama* and *Dosha pachana* treatment along with that they have affinity towards *Pranavaha Srotas*. *Dwidoshaj Jwara* can be fatal and get

converted in *Sannipataj Jwara* (fatal combination of all three *Doshas*) considering this *Dwatridashang* decoction has been selected. *Aagantuj Jwara* describes various fevers due to extrinsic factors. *Bilvadi gulika* has been selected in accordance with this. Also AYUSH

Table 2
Therapeutic intervention- Ayurvedic treatment protocol.

	Stage 1-Jwara -Sama Avastha (Fever accompanied with Aama) Day 1–9	Stage 2-Kapha Ksheenavastha (Low Kapha state) Day 10–24	Stage 3 (For enhancing Agni and Bala) Day 25–40.
Medicine	a) <i>Shrunyadi</i> Decoction: 40 ml Morning. b) <i>Dwatridashang</i> Decoction: 40 ml Night c) <i>Bilvadi gutika</i> 250 mg- thrice a day d) <i>Sitopaladi churna</i> 5 gm Morning & Evening. e) <i>Shadangodaka</i> (Medicated water) f) <i>Dhupana</i> (Fumigation): <i>Dashanga Dhupana</i> twice a day.	a) <i>Sitopaladi churna</i> 5 gm Morning & Evening.	a) <i>Drakshasava</i> 10 ml after lunch and Dinner for 15days.
Diet	<ul style="list-style-type: none"> • Freshly cooked diet, Liquids are praised • Langhan (Fasting): Light food is advised. • Cereals: Aged wheat, barley, Jawar (pearl millet), rajgira (Amaranths) laddoo are preferred • Pulses: lentil, Green gram, Pigeon pea, red lentils, horse gram can be taken. • Vegetables: Pumpkin, Eggplant, Okra, drumsticks, Bitter Gourd, Amaranths, Snake gourd, white goosefoot, spine gourd, bottle gourd, ridge gourd. • Spices: Garlic, onion, ginger, coriander, cumin, turmeric, Black pepper, dry ginger, cinnamon, mustard seeds can be used for cooking in small amount. • Instead of oil prefer cow ghee for cooking. • Fruits: Amla, Dried Fig, Black Raisins, Pomegranate, Wood Apple, Orange, Sweet Lime are to be taken. • Food items tasting Tikta (bitter), Katu (pungent), and Kashaya (astringent) are to be taken. • Honey • New grains, curd, cold drinks, and so on, are also to be prohibited. 		Regular diet
Regimen	<ul style="list-style-type: none"> • Avoid day time sleep and sleeping late night. • Avoid heavy exercise. • Practice pranayama-deep breathing 1–5min. • Abstinence 		<ul style="list-style-type: none"> • Avoid day time sleep and sleeping late night. • Avoid heavy exercise. • Practice Pranayama-Deep breathing 1–5min.

has included *Bilvadi gulika* in guidelines for Ayurveda practitioners for COVID-19 [14]. *Dashang dhoopana* (Ayurvedic fumigation) used as potent disinfectant of rooms and environment. It helps preventing outbreak of epidemics and pandemics [15]. *Shadangodak* (medicated water) has been mentioned in *Jwara* treatment for *Aampachana* (Digestion of body toxins) and *Pitta* maintenance [14]. So found helpful in prevention of prognosis. In second stage, after *Ama pachana* (Digestion of indigested body toxins), only *Sitopaladi Churna* was continued for improving *Agni* and *Dhatu* strength. This medicine has been listed for *Rajayakshama* in Ayurveda and majorly prescribed for tuberculosis, viral respiratory infection, pneumonia, bronchitis, pharyngeal and chest congestion [16]. Broadly, *Sitopaladi churna* has affinity towards *Pranavaha Srotas* (Respiratory system). So might be useful in post Covid lung complications. Considering the body constitution of patient (*Vata Pitta Prakriti*), Past complaints, Present *Varsha ritu* (Rainy season) and related *Pitta dosha sanchaya* (natural accumulation of *Pitta dosha*) and coming season (*Sharad – Pitta Prakop kala*) *Shadangodak* and *Sitopaladi Churna* has been selected to maintain *Pitta dosha*. In the recovery stage, *Vyadhisthana* viz affected organ has been targeted. *Drakshasava* is one of the preferred medicines in respiratory tract diseases, has dried fruits of *Vitis vinifera* as chief ingredient. It has proven efficacy against ongoing inflammatory process underlying respiratory problems through inhibition of histamine release, cytokine production, improving lung functioning by counteracting allergen induced bronchial hyper responsiveness; and blocking the release of inflammatory cellular infiltration (eosinophil, lymphocytes, neutrophils) into airways [17]. Apart from treatment, dietetic and behavioral regimen are the key factors in Ayurveda treatment. Controlled eating regimen was advised with the aim of fixing

disturbed *Dosha, Agni and Bala*. The diet followed the *Jwara* treatment *Sutra* viz light to digest, strengthening to body and mind, helpful in restoring digestive fire. *Pranayama* makes efficient use of abdominal and diaphragmatic muscles and improves the respiratory apparatus [18]. The patient had recovered in seven days, the infection hadn't worsen despite the presence of hypertension. Thus, it can be said that the span of the ailment was probably shorter in view of the Ayurvedic medications as reported in case of traditional Chinese medicine [19]. Related investigations and scans showed positive recovery. Post Covid, peak expiratory flow rate (PEFR) assessed with peak flow meter, showed lung function within normal limit.

Pandemics occupy major part of Ayurveda literature as *Janpadadhwansa* - diseases having same manifestations influencing huge populace and at a time driving demise are called as *Janpadadhwansa* [20]. Anomalous states of Air, water, topographical area and time are referenced as fundamental explanations behind *Janpadadhwansa*. This section despite everything stays to be the fundamental establishment of disease transmission. Personal - social morals, hygiene and etiquettes have been deeply considered which exactly corroborate with WHO preventive guidelines. On an average, after every decade, we are facing new deadly diseases. Ayurveda has proved its potential both in preventive as well as curative aspect. We are surrounded by trillions of microbes to which 'survival of fittest' principal applies equally. Evolution is continuous for all forms of life. Ayurveda supports Holobiont theory [21] but emphasizes host theory [22] which is empowered by *Sadvritta* (How to carry on), *Dinacharya* (Daily routine), *Rutucharya* (Seasonal routine), work out, dietetic guidelines and decorum's, *Panchakarma* and *Rasayanas* (Rejuvenation treatment).

3. Conclusion

This case report suggests the potential of Ayurvedic treatment module for COVID-19 with comorbid hypertension. Scope of such studies, examinations can be expanded and results can be recommended for larger population benefit.

3.1. Patient perspective

On 27.07.2020 I experienced mild fatigue which was neglected. On the very next day, Fever 100 °F, throat irritation, myalgia were there. The news of COVID-19 outburst was everywhere and one of my office colleague tested COVID-19 positive 3 days prior. I was very scared. I was following social distancing, wearing mask and sanitization and hence couldn't comprehend where it went wrong. I was really worried and decided to see my family physician. After consultation, I was quite consoled and prepared for the course and demands of disease. As per advice of my Ayurvedic physician, I gave a swab for RTPCR which came positive for Covid 19. It was shocking for me and my family. I was advised modern western medicine as per standard protocol by the physician from Government approved COVID center yet I did not want to take it. I sought help from my Ayurveda doctor and proceeded with Ayurvedic treatment. I was really stressed. The hardest thing about having Covid isn't really having COVID-19 infection, but the stress due to anticipated worsening of it based on media reports and anecdotal evidences. Consultation by my Ayurvedic physician, soothed me a lot and put me on a positive tract. I was home isolated and followed my physician's instructions. Every day I was recording SpO₂, pulse rate, blood pressure and temperature. By Day 5 or 6 of the Ayurvedic treatment, I felt dynamically better; individually my symptoms started fading away. Precautionary measures were practised to avoid infecting family members. Quarantine, Decoction, *Dhoopana*, Diet and *Pranayama* were strictly followed by all my family members. samples for RTPCR test were given by all my family members and came negative for COVID-19 for everyone. This boosted my moral. The overall period was stressful but Ayurveda helped me at every step of the way. At this moment I am feeling gratitude towards Ayurvedic treatment that helped me achieve healthy body and mind.

3.2. Informed consent

Written informed consent was obtained from patient before initiation of treatment. A written informed consent for publication of patient's clinical details was obtained from her.

3.3. Additional observation

Patient has isolated herself at home and all family members were following strict sanitization, social distancing and masking practices. Besides, they were following recommended Ayurvedic diet and regimen (Table 2). Considering the probability of transmission of COVID-19 within families of infected individuals (though it is low), a body *dosha* balance upholding medication- *Shrugyadi* Decoction 20 ml, Morning (once a day) has been prescribed to all the healthy family members. The combined effect of above said practices sought good results for this case. This aspect need to be explored as future research challenges.

Declaration of competing interest

None.

Author contributions

Abhijeet Shirkande: Conceptualization, Methodology, Investigation. **Ankita Shirkande:** Data curation, Writing- Original draft preparation, Writing- Reviewing and Editing.

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