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Case Report

Ayurvedic treatment of COVID-19/SARS-CoV-2: A case report

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ABSTRACT

This is the first known case of a Coronavirus disease (COVID-19) positive patient treated entirely with Ayurveda. So far in Modern Western Medicine (MWM), no cure has been found which is specific to COVID-19. The only literature relevant to the treatment of Coronavirus disease has surfaced from Traditional Chinese Medicine (TCM). TCM which was extensively used to control the epidemic in China, also consists of herbal medicines similar to Ayurveda. In this case, the patient, who was familiar with the use of Ayurvedic medicines, fully aware that no proven cure exists in MWM, decided to entirely rely on the limited Ayurvedic medicines that he had in his possession at the time of falling ill.

Despite the patient presenting with symptoms, namely high fever, severe body pain and severe cough, along with many of the other associated symptoms of COVID-19, the progress of the disease could be arrested within a short period by being exclusively on Ayurvedic medicines. This illustrates that there is a wide scope to explore the variety of pertinent medicines present in Ayurvedic pharmacopoeia which can be used more rationally to suit every stage of the disease.

Being the first-of-its-kind it is a valuable contribution to scientific literature from the world of Ayurveda. This should encourage the healthcare policy makers to quickly use Ayurveda to bring the COVID-19 pandemic under control in India, as they seemed to have demonstrated it in China with TCM.

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1. Introduction

COVID-19 is a rapidly changing and evolving situation. World Health Organisation (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. There is plenty of evidence as to how Traditional Chinese Medicine (TCM) has been put to use in China to contain COVID-19 [1–3].

Fever (*Jwara*) is well understood in Ayurveda and it occupies the first chapter in treatment (*chikitsa*) in two of the canonical texts of Ayurveda, namely *Charaka Samhita* and *Ashtanga Hridayam*. It deals with diagnosis (*nidanam*), pathophysiology (*samprapti*), classification, management, medicines, diet and prognosis. In this case, the fever was diagnosed as per his presenting symptoms as a *Vata Kapha* predominant one [4, *Nidana Sthana*, 2/25], necessitating

appropriate management. Subsequently, the patient tested positive for COVID-19.

From the Ayurvedic point of view, COVID-19 is a *janapadodhwamsa vikara* (epidemic disease). The concept of an epidemic is described in *Charaka Samhita: Vimana Sthana*, Chapter 3. "... even though there is dissimilarity in the physical constitution of human beings, still there are such factors which are common to all individuals and vitiation of these factors leads to the simultaneous manifestation of diseases having the same set of symptoms leading to the destruction of countries. Factors which are common for all the inhabitants of a country are air, water, location and seasons." [5, *Vimana Sthana*, 3/6] *Janapadodhwamsa* is a situation where the environment - air, water, land and seasons - is vitiated, causing a simultaneous manifestation of a disease among large populations (epidemic), destroying human habitations.

In India there is precedence of treating the Chikungunya virus epidemic with Ayurveda and Siddha medicines [6]. However, there is no attempt in India to directly employ Ayurvedic medicines in the treatment of Coronavirus disease. In this context we provide this case study where a patient of Coronavirus disease tested positive in New York, managed entirely with Ayurvedic medicines to get fully relieved of his symptoms.

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2. Case presentation

2.1. Patient information

The patient aged 43 years is an investment banker in New York, United States of America (USA). He is well built, with a height of 193 cms and weighing 94.3 kgs.

2.2. Present medical history

Patient on the first day of falling ill contacted his Ayurvedic *vaidya* in Chennai on the telephone, for a consultation and started on Ayurvedic medication for his complaints. He self-quarantined, on the suspicion of the possibility of a COVID-19 infection since he lives in New York. Presenting symptoms were fever associated with body pain, cough, loss of taste and smell and abdominal pain. Fever lasted for seven days. Fever is understood well in Ayurveda, and COVID-19 being one such, the patient management was started as per Ayurvedic understanding of *Jwara* (fever).

Details of the symptoms, number of days it lasted, tests performed and medicines recommended are given below in [Table 1](#).

2.3. Past medical history

He has been under Ayurvedic treatment for seven years and has consulted for various conditions for Ayurvedic intervention including, Hypothyroidism (2013), skin issues (2014) and disturbed sleep (2015). Most recently in 2019 December, he consulted for dryness and itching of skin and intermittent cough. His long term prescription was: *Guggulutikta Ghrta* - 15 ml Bid, *Kaishora Guggulu* - 1 Tab Bid, *Ekavimshatika Guggulu* - 2 Tab Bid, *Khadirarishta* - 45 ml after food, Bid, *Durvadi Taila/Nalpamaradi Taila* for external us, *Anu Taila* - Nasal drops once a day.

He was on the above prescription from 27.01.2020 for a period of one month. He stopped these medicines as soon as he developed fever. Patient was not a Known Case of Diabetes Mellitus or Hypertension or any other comorbidities.

His diet prior to illness consisted of a breakfast of stewed apples and vegetable porridge, a vegetarian lunch with rice, *sambar* and vegetables, an evening snack consisting of *adai/dosa/idli*, and dinner with rice, *dal* and vegetables.

Before onset of symptoms, the patient was on a small dose of *Sudarsana Churna* 2 tablets at bedtime for a period of 3 months. He said he had started *Sudarsana Churna* on his own, since it gave him a "sense of well-being resulting in better sleep."

2.4. Ayurvedic interpretation of the Patient's condition

2.4.1. Diagnosis

In this particular case, the diagnosis was initially made, based on his symptoms and the season. Since the COVID-19 diagnosis had not yet been made, we looked at the symptoms as those of a *nija jwara* (caused by the disequilibrium of the bodily doshas), a fever with *Vata-kapha* predominance and gave appropriate medicines, diet and regimen. The final diagnosis was arrived at based on the vast literature available on COVID-19 in the public domain [7,8] and symptoms as reported by the patient. Fevers are classified according to the aggravated *doshas* (disease-causing factors), which allows us to understand all types of new and emerging fevers.

2.4.2. Pathophysiology (Samprapti)

In this *roga* (disease), the *Roga Marga* is *abhyantara* [4, Sutra Sthana, 12/44-49], as *jwara* (fever), *svasa* (respiratory distress) and

kasa (cough), the three major symptoms of COVID-19 belong to this *roga marga*. *Abhyantara roga marga* is one of the three *roga margas* or "pathways of disease" as described in *Ashtanga Hridayam*. There is *Pranavaha sroto dushti* [5, Vimana Sthana, 5/7] observed in this disease, as there is severe respiratory distress along with other symptoms, sometimes leading to death. The seat of affliction of this disease is primarily *Uras* (chest region).

Based on the above, Coronavirus disease can be correlated as *Agantuja Sannipataja Jwara*, which is of *Vata-Kapha* predominance [5, Chikitsa Sthana, 3/92; 3/128-129]. This *jwara* can be classified as being *agantu* (external) caused by *Bhoota Abhishanga* [5, Chikitsa Sthana, 3/111, 3/114], which aggravates all the three *doshas*. Since all the three *doshas* are aggravated it is labelled *Sannipata*. The spread and affliction caused by the virus in this *jwara* can be understood in Ayurveda under the *Bhoota abhishanga* classification. According to Ayurveda, *agantu jwara* is to be treated as a *nija jwara* caused by an imbalance of *doshas* [5, Sutra Sthana, 19/7, Chikitsa Sthana, 3/128].

2.4.3. Etiology

According to MWM, the etiology of this illness is now attributed to a novel virus belonging to the coronavirus (CoV) family. It is now named SARS-CoV-2 [9]. In Ayurveda it can be classified/correlated with a *Vata-kapha* predominant fever with all the characteristics of a *Janapadodhwamsa vikara*. It is a highly contagious disease. The methods by which contagious diseases spread from one person to another is described in *Susruta Samhita: Nidana Sthana*, Chapter 5:

"Skin diseases, fever, consumption, conjunctivitis and all contagious diseases spread from person to person, by indulgence in bodily contact, by (coming into contact with another's) breath, eating with others in the same plate, sharing of bed and seat, through (contact with) clothes, ornaments, and cosmetics." [10]

2.5. Therapeutic intervention

Therapeutic intervention consisted of three components, namely, medicines, diet and regimen. The patient had self-quarantined from the first day of fever. Details of the medicines given in two stages of his condition, namely fever and convalescence are given below in [Table 2](#).

Here it is pertinent to point out that the three medicines used in the management of COVID-19 are all classical preparations. The mode of actions of each of them as per the texts are the following: *Sudarsana Churna*: Alleviates all the three *doshas*; cures all types of fevers including *Agantuja jwara*, *Sannipata jwara* etc., *Dhanvantara Gutika*: cures *Svasa*, *Kasa*; *Vaataanulomana* (aiding the normal flow of *vayu*), *Talisadi Churna*: cures *Jwara*, *svasa*, *kasa*, *aruchi* (loss of taste); *Deepanam* (stimulates digestion).

2.6. Outcome

After reaching a peak temperature of 103 °F, the symptoms started to subside. On Day 7, the patient felt that all symptoms had subsided, except loss of taste and smell. Fever, body ache, cough had resolved and appetite also returned by Day 7. The last symptom to normalise was his sense of smell, which returned on Day 16. Resolution of fever (*Jwara Mukti Lakshanas*) were observed on Day 7 [4, Nidana Sthana, 2/79].

The patient adhered to all our instructions. There was resolution of symptoms very quickly, and there was no progression of the disease to a severe stage. There were no adverse or unanticipated events.

Table 1
Course of the disease

Date/Day	Symptoms	Test/Result	Treatment
29.03.2020/Day 1	Severe body ache (8/10 on a scale of 1–10), Abdominal pain (2–3/10 on a scale of 1–10), Temp: 100 °F, Loss of taste and smell	NA	Day 1–13: <i>Sudarsana Churna</i> 4 tablets (2 gms) with room-temperature water, Tid; <i>Talisadi Churna</i> 1tsp with honey, Tid; <i>Dhanwantara Gutika</i> 2 tablets, Tid, and regulated diet.
30.03.2020/Day 2	Immediately after starting the Ayurvedic medicines, abdominal pain became very mild and manageable. Body ache persisted. Temp: 101 °F, Continued loss of taste and smell, Mild coughing	NA	Same medicines continued
31.03.2020/Day 3	Severe body ache, Peak Temp: 103 °F, Continued loss of taste and smell, Severe coughing. Cough was intermittent, dry, and he had no sputum production. All symptoms were worse in the evenings.	NA	Same medicines continued
01.04.2020/Day 4	Severe body ache, Temp: 102 °F, Continued loss of taste and smell, Severe coughing.	NA	Same medicines continued
02.04.2020/Day 5	Body ache finally got better, Temp: 100 °F. Continued loss of taste and smell, No coughing.	Home test: Completed COVID-19 Nasopharynx test: Real time RT PCR in Bio Reference Laboratories in Fulton Street, New York	Same medicines continued
03.04.2020/Day 6	No body ache, Normal temperature. Continued loss of taste and smell.	His doctor in New York verbally confirmed positive COVID19	Same medicines continued
04.04.2020/Day 7	Most symptoms disappeared other than loss of taste and smell. Appetite returned to normal.	NA	Same medicines continued
From 05.04.2020 to 12.04.2020: Days 8–15	Patient felt mostly normal, except for loss of taste and smell.	The written report for the positive test result came on 07/04/2020 (Day 10)	From 11.04.2020/Day 14–28 <i>Vidaryadi Ghritam</i> 15 ml, Bid
13.04.2020/Day 16	His sensation of smell was partially restored.	His doctor in New York said that since he had recovered there would be no need to do a follow up test. However, patient ordered a home test from the same lab. The post fever COVID 19 nasopharynx sample was taken on 13.04.2020. Lab called him later and said “Insufficient material.”	Same medicine continued
28.04.2020/Day 31		Patient, wanting to interact with his family safely, gave blood sample for testing. Test given in Enco Diagnostic Laboratory, Brooklyn, New York for COVID 19 IGM and IGG, serum.	Same medicine continued
01.05.2020/Day 33		Results: SARS-CoV-2 IgG: REACTIVE SARS-CoV-2 IgG, Num: 7.084 SARS-CoV-2 IgM NON-REACTIVE	NA

Table 2
Therapeutic intervention

	Stage 1: <i>Jwara</i> Day 1–13	Stage 2: <i>Jwara Mukti</i> Day 14–30
Medicines	<ul style="list-style-type: none"> • <i>Sudarsana Churna</i> - [11] 4 tablets (2 gms) in room temperature water Tid; • <i>Talisadi Churna</i> - [5, Chikitsa Sthana, 8/145-148] 1tsp with honey Tid; • <i>Dhanwantara Gutika</i> - [12] 2 tablets Tid 	<i>Vidaryadi Ghritam</i> – [4, Chikitsa Sthana, 3/10] 15 ml Bid
Diet Regimen	Rice porridge, <i>Yusha</i> and <i>Bhakta</i> [13] Avoid sleeping during the day (<i>Divaswapna</i>) and keeping awake at night (<i>Ratri jagarana</i>)	Include milk, ghee [5, Chikitsa Sthana, 3/164-165, 3/167-168] Avoid sleeping during the day (<i>Divaswapna</i>) and keeping awake at night (<i>Ratri jagarana</i>)

3. Patient's perspective on treatment received

"Though I was already following social distancing and safe hygiene practices, I feel I might have contracted it from one of my trips to the grocery store, despite maintaining distance in the store. On 29th March I came down with a fever. As COVID-19 was raging in New York, I was very afraid that I had contracted COVID. I quarantined myself in my office (which is in the same building as my house, but on a different floor), as my wife is pregnant with our third child.

On the 4th day, I called a doctor who came to take a test the next day. The doctor was afraid to come up to meet me. My wife took the test kit from the doctor, took a swab from my nose, placed it inside the test tube and gave it to the doctor for testing.

Because I was taking Ayurvedic medicine, I was never really worried. By Day 5 or 6 I felt progressively better, one by one my symptoms fell away.

My doctor in New York did not encourage me to go for a post-fever test since he felt I had completely recovered. However, since I wanted to interact safely with my family, I needed a reassurance from the lab test. I therefore ordered a home test from the lab on 13.04.2020. However, the swab this time was insufficient to produce a result. Two weeks later I gave a blood test for the immunoglobins.

The toughest thing about having COVID is not actually having COVID-19 infection, but you read so much about how other people's cases are very serious, and if I had not read a lot about other people who had serious cases I would not have been worried at all. Nevertheless I felt very reassured by the Ayurvedic medicine. Even though I had severe body pain and high fever and severe cough, at no point did it feel even close to life threatening. I would like to add that the body pain felt pretty bad. On the first day that I didn't have body pain I felt such a relief, and only then did I realise how bad the pain had been. Right now I am feeling fantastic thanks to Ayurvedic treatment."

4. Discussion

4.1. 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.

Treatment protocol consisted only of three Ayurvedic medicines, as the patient happened to be in New York and we worked with what medicines he had on hand.

The medicines used for managing the condition had to be selected from a limited set of medicines that the patient had with him. There are a large number of Ayurvedic medicines that are currently in use for all types of *Vata-Kaphaja* and *Sannipataja jwara* which may prove to be effective for COVID-19.

4.2. 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 severe cough and fever more than 39.1 °C, the patient did not worsen and develop breathlessness.

"Median time for onset of symptoms to recovery in mild and severe cases was 2 and 3–6 weeks, respectively. Furthermore, time interval between onset and developing severe symptoms such as

hypoxia was one week." [14] This patient had recovered in 7 days. Hence it can be said that the duration of the disease was presumably shorter because of the Ayurvedic medicines as it was noted where TCM was used [2]. This aspect needs to be studied further.

There are COVID-19 patients who test positive, but are asymptomatic. This case can be classified as mild to moderate in nature. There is "scarce and inconclusive evidence on symptoms that easily distinguish mild and moderate cases." [15] However, fever above 39.1 °C (102.2 °F) is not considered mild. "Many mild cases also have very few symptoms, and cough is present in less than half of the mild cases." [15] This patient exhibited many of the symptoms, including severe body pain, severe cough, anosmia, abdominal pain, and had a peak temperature of 39.5 °C (103 °F), we consider this case to be not very mild, but mild to moderate.

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 [5, Chikitsa Sthana, 3/142-143, 3/163-164]. The diet recommended for the patient, namely soup made of *mung dal* and cooked parboiled rice are 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.

5. Conclusion

COVID-19 is responsible for causing a large number of deaths particularly in medically and technologically advanced countries like USA. This is presumably due to the absence of a proper treatment protocol in MWM to address this condition. Therefore, we report this case to show that COVID-19 is a condition where focussed Ayurvedic treatment, if given, may prevent the deterioration of the disease into a more critical condition. This patient's presentation was not mild. However 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.

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Conflict of Interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jaim.2020.06.001>.

References

- [1] Yang Y, Islam MS, Wang J, Li Y, Chen X. Traditional Chinese medicine in the treatment of patients infected with 2019-new coronavirus (SARS-CoV-2): a review and perspective. *Int J Biol Sci* 2020;16(10):1708–17. <https://doi.org/10.7150/ijbs.45538>.

- [2] Ren JL, Zhang AH, Wang XJ. Traditional Chinese medicine for COVID-19 treatment. *Pharmacol Res* 2020;155:104743. <https://doi.org/10.1016/j.phrs.2020.104743>. Advance online publication.
- [3] Leonard T, Ho F, Chan Karina KH, Chung Vincent CH, Leung Ting Hung. Highlights of traditional Chinese medicine frontline expert advice in the China national guideline for COVID-19. *Eur J Integr Med* 2020. <https://doi.org/10.1016/j.eujim.2020.101116>. Available online, 3 April 2020, Article 101116.
- [4] Srikantha Murthy KR. *Ashanga Hridayam* of Vagbhatacharya. translator. Varanasi: Krishnadas Academy; 2003. Reprint.
- [5] Sharma Ram Karan, Dash Vaidya Bhagwan, editors. Charaka Samhita of Agnivesha, text with English translation of Ayurveda Dipika commentary of Chakrapanidatta. Varanasi: Chowkhamba Sanskrit Series; 2003. Reprint.
- [6] Central Council for Research in Ayurveda and Siddha. Management of Chikungunya through Ayurveda and Siddha. New Delhi. 2009. http://www.ccras.nic.in/sites/default/files/22092016_MANAGEMENT%20OF%20CHIKUNGUNYA%20THROUGH%20AYURVEDA%20AND%20SIDDHA-A%20TECHNICAL%20REPORT.pdf.
- [7] World Health Organisation. Q&A on coronaviruses (COVID-19 [online] who.int, last updated on. 17.04.2020. <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>. [Accessed 19 April 2020].
- [8] Auwaerter Paul G. John Hopkins ABX guide, coronavirus COVID-19 (SARS-CoV-2) [online] John Hopkins Medicine, last updated on. 27.04.2020. https://www.hopkinsguides.com/hopkins/view/Johns_Hopkins_ABX_Guide/540747/all/Coronavirus_COVI_D_19_SARS_CoV_2_#6. [Accessed 29 April 2020].
- [9] Cascella M, Rajnik M, Cuomo A, Dulebohn SC, Di Napoli R. Features, evaluation and treatment coronavirus (COVID-19) [Updated 2020 Mar 20]. In: StatPearls [Internet]. Treasure Island (FL). StatPearls Publishing; 2020 Jan. Available from: <https://europepmc.org/article/med/32150360>.
- [10] editor, translator of Sharma Priya Vrat. In: *Susruta Samhita with English translation of text and Dalhana's commentary, Nidana sthana, Kusta Nidana: chapter 5, verses 33-34*. Varanasi: Chaukhamba Visvabharati, First edition; 2000. p. 44.
- [11] translator Himasagara Chandra Murthy P. *Sarngadhara Samhita of Sharn-gadharacharya, Madhyamakhanda, Churna Kalpana, chapter 6, verses 26-36*. Varanasi: Chowkhamba Sanskrit Series, First Edition; 2001. p. 156–7.
- [12] editors Krishnan Vaidyan KV, Gopala Pillai S. In: *Sahasra Yogam*, commentary of Sujana Priya. Gutika Yogam: No.29. Alleppey. 16th ed. Vidyarambam Publishers; 1989.
- [13] translator Himasagara Chandra Murthy P. *Sarngadhara Samhita of Sharn-gadharacharya, Madhyamakhanda, Kwatha Kalpana, chapter 2, verses 154-156, 169-170*. Varanasi: Chowkhamba Sanskrit Series, First Edition; 2001. p138 and 140.
- [14] Kolifarhood G, Aghaali M, Mozafar Saadati H, Taherpour N, Rahimi S, Izadi N, et al. Epidemiological and Clinical aspects of COVID-19; a narrative review. *Arch Acad Emerg Med* 2020;8(1):e41. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7117787/>.
- [15] Michelen Melina, Jones Nicholas, Stavropoulou Charitini. In patients of COVID-19, what are the symptoms and clinical features of mild and moderate cases?. Available online 01 April 2020 Centre for Evidence-Based Medicine, Nuffield Department of Primary Care Health Sciences, University of Oxford; School of Health Sciences, City, University of London; 2020. <https://www.cebm.net/covid-19/in-patients-of-covid-19-what-are-the-symptoms-and-clinical-features-of-mild-and-moderate-cases/>.