

Management of a mild COVID-19 infection through Ayurvedia and yogaintervention : a case study.

Swati S. jawade^{1*}, Tirunagiri Swamy², Anil Kale³.

1 PG Scholar, Kaumarbhirya, GAC Osmanabad.

2 Hod and Professor, Kaumarbhirya Dept, R.A. Potdar, Mumbai.

3 Hod and Professor, Kaumarbhirya Dept, GAC Osmanabad.

Corresponding Author: Dr. Swati S. jawade PG Scholar, Kaumarbhirya Dept. GAC Osmanabad.

Submitted: 10-10-2022

Accepted: 21-10-2022

ABSTRACTS :-

The COVID-19 pandemic has posed an immense challenge to health care systems around the globe in terms of limited health care facilities and proven medical therapeutics to address the symptoms of the infection. The current health care strategies have primarily focused on either the pathogen or on the environmental factors. However, efforts towards strengthening the host immunity are important from public health perspective to prevent the spread of infection and downregulate the potency of the agent. While a vaccine can induce specific immunity in the host, non-specific ways of improving overall host immunity are the need. This scenario has paved the way for the use of traditional Indian therapies such as Ayurveda and Yoga. This review aims at collating available evidence on Ayurveda, Yoga and COVID-19. Further, it draws inferences from recent studies on Yoga and Ayurveda on immunity, respiratory health and mental health respectively to approximate its probable role in prophylaxis and as an add-on management option for the current pandemic.

KEYWORDS: Agni, Ayurveda, Janapadodhwamsa, yoga, COVID-19.

I. INTRODUCTION :-

The COVID-19 pandemic has become a major global challenge, especially for the Health care sector. In the current situation where the number of positive cases of COVID-19 is outstripping existing healthcare facilities, an economically feasible therapeutic option is of critical importance. Strategies that can improve immune surveillance and resilience in terms of reduction in inflammatory markers and improvement in the activity of the specific immune cells involved in the pathogenesis of COVID-19 is the need of the hour. Conti et al, suggested that reduction of inflammatory responses is a relevant strategy to reduce the severity of the

COVID-19 disease, which could potentially reduce the number of cases requiring critical care. The current health care strategies have primarily focussed on either the pathogen or on the environmental factors. However, the efforts towards strengthening the host immunity are important from public health perspective to prevent the spread of infection and downregulate the potency of the agent. While a vaccine can induce specific immunity to the host, non-specific ways of improving overall host immunity are the need of the hour. Thus, traditional Indian systems of medicine such as Ayurveda and Yoga should be explored for their potential role in improving host immunity and reducing severity of the infection.

This review aims at consolidating the existent literature available on Yoga and Ayurveda for COVID-19. Further, it infers the ancillary evidences for utility of Yoga and Ayurveda in enhancing health in three major domains: 1) Immune system, 2) Respiratory system and 3) Mental health, that are more vulnerable during COVID-19 infection.

- Mild to moderate (mild symptoms up to mild pneumonia): 81%
- Severe (dyspnea, hypoxia, or >50% lung involvement on imaging): 14%
- Critical (respiratory failure, shock, or multiorgan system dysfunction): 5%

Understanding COVID-19

Ayurveda Perspective

According to Ayurveda classics, the term Janapadodhwamsa (epidemic diseases) has been used to describe epidemics/pandemics which manifest due to polluted vayu (air), bhumi (land), jala (water) and kala (vitiated seasons). Sushruta has also described a condition that mimics all symptoms of an influenza-like illness

suchas the current COVID-19 jwara (fever), swasa(difficulty in breathing), kasa(cough), shiroruk(head ache), pratisyaya (common cold), gandhaajnana (anosmia), bhrama (giddiness/postural instability), and vamathu (vomiting) [6].

disease involving all tridosā h in its pathophysiology which has been described in Ayurveda as difficult to cure) [4].

Yoga Perspective

Yoga therapy emphasises on modulation of host factors such as regulation and moderation of the lifestyle factors [8]. Host immunity is downregulated due to altered lifestyle patterns such as consumption of unwholesome food, physical inactivity, improper sleep-wakecycle, increase in

workload, stress and addictions [9,10]. This results in fragility of the immuneresilience that makes the host succumb to the virulence of the virus. Thus, the aim of Ayurvedaand Yoga therapeutics is to enhance host immunity and reduce the extent of infection andinflammation in the body by balancing body humors and lifestyle factors.

Potential Role of Ayurveda and Yoga in COVID-19 Infection: Current Evidence Base

To understand the role, we have categorized our literature search into three domains which are commonly involved in COVID-19 infection:

- 1) Immune system,
- 2) Respiratory System and
- 3)Mental Health

| Presentation of clinical symptoms in COVID-19. | | | |
|---|--|---|--|
| TYPICAL SYMPTOMS | EARLY | | LATE |
| COMPLICATIONS | | | |
| MAJOR | Fever (83-99%), Cough (59-82%) | Breathing Difficulty (31-40%), Mild Pneumonia . | Hypoxia, Pneumonia, ARDS, Coagulopathy |
| COMMON | Chills Repeated shaking with chills Myalgia Headache Sore throat New loss of taste or smell | | |
| ASSOCIATED | Anorexia (40-84%) Fatigue (44-70%) Sputum (28-33%) | | |
| ATYPICAL SYMPTOMS | | | |
| SPORADIC | < 10% Confusion Haemoptysis Vomiting Nausea Diarrhoea | | |
| Being Investigated | | | |
| RARE | Skin eruptions | | |

Analysis of clinical symptoms of a cluster of COVID-19 patients.

| Patient No. | Age | Sex | Baseline | Clinical course | Test Report (RT-PCR) | Active medications | Outcome R-recovered D-death |
|-------------|-----|-----|--------------|--|----------------------|---|-----------------------------------|
| P1 | 46 | M | Mild | Cough, throat pain ,fever | +VE (20-Apr-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P2 | 30 | M | Asymptomatic | Cough, throat pain Myalgia, headache | +VE (22-Apr-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P3 | 37 | F | Mild | Intermittent fever, Cough, throat pain Myalgia, headache | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P4 | 35 | M | Asymptomatic | Cough, throat pain | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P5 | 35 | M | Asymptomatic | Dyspnoea ,nasal obstruction ,fever | -VE(22-Apr-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P6 | 37 | F | Mild | Cough, throat pain Myalgia, headache | +VE(20-Apr-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P7 | 36 | M | Mild | Fever ,headache ,cough. | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P8 | 36 | M | Mild | Dyspnoea ,nasal obstruction ,fever | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P9 | 30 | F | Mild | Myalgia ,throatpain,fever | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |
| P10 | 65 | M | Mild | Myalgia ,throatpain,fever | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. | R |

| | | | | | | |
|--|--|--|--------------|----------------------------------|------------------|---|
| | | | Asymptomatic | | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. |
| | | | | Cough , giddiness , cold chills. | +VE(05-May-2021) | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. |
| | | | | | | Paracetamol , vit. c , multivitamins , pantoprazole , levocetirizine. |

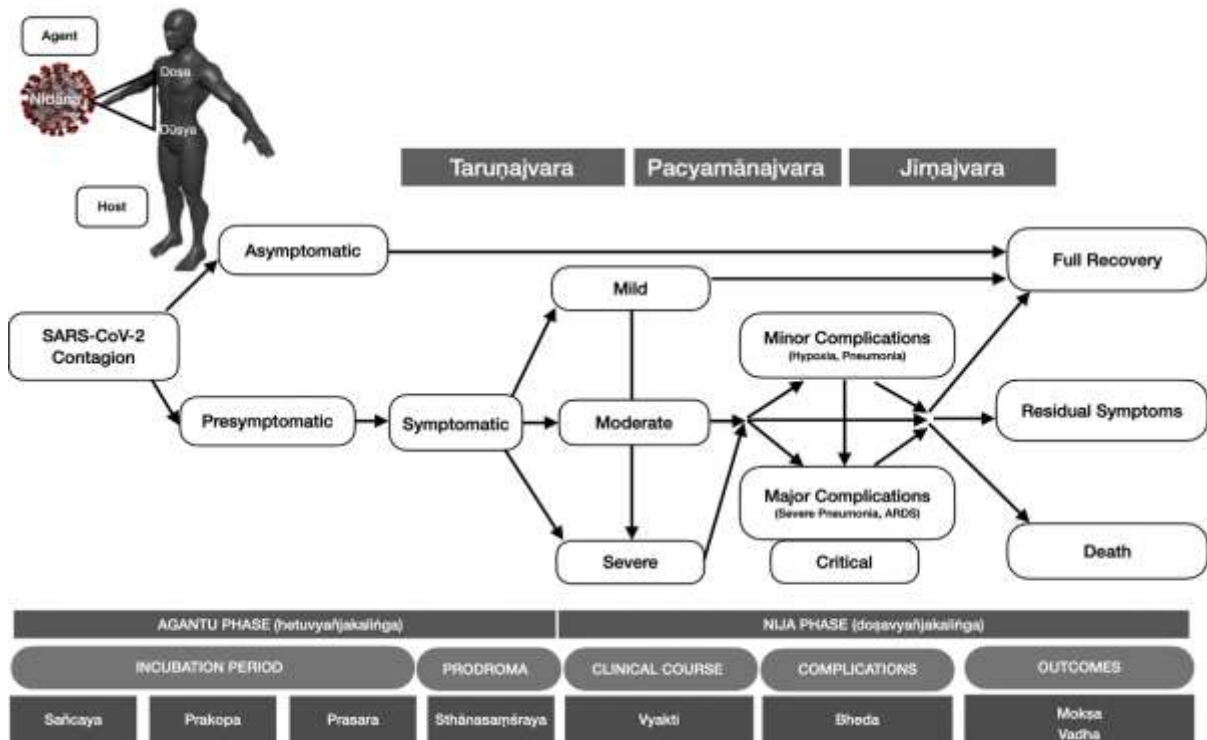


Fig. 1 .Clinical course of COVID-19

1. AYURVEDIC MANAGMENTS
 Specific measures/ symptom management

| Clinical severity | Medicines | Dose and timing |
|---|--|--|
| Prophylactic care (high risk population, primary contacts) | Ashwagandha (Aqueous extract of Withania somnifera IP) or its powder | 500 mg extract or 1-3 g powder twice daily with warm water for 15 days or one month or as directed by Ayurveda physician |
| | Guduchi Ghana vati (Samshamanivati or Giloy Ghana vati having Aqueous extract of Tinospora cordifolia IP) or the powder of Tinospora cordifolia | 500 mg extract or 1-3 g powder twice daily with warm water for 15 days or one month or as directed by Ayurveda physician |
| | Chyawanaprasha | 10 g with warm water / milk once a day |

| Clinical severity | Clinical Presentation | Medicines | Doses & Timing |
|--|---|--|--|
| Asymptomatic COVID-19 positive | For prevention of disease progression to symptomatic and severe form and to improve recovery rate | Guduchi Ghana vati (Samshamanivati or Giloyvati having Aqueous extract of Tinospora cordifolia IP) or the powder of tinospora cordifolia | 500 mg extract or 1-3 g powder twice daily with warm water for 15 days or one month or as directed by Ayurveda physician |
| | | Guduchi + Pippali (Aqueous extracts Tinospora cordifolia IP and Piper longum IP) | 375 mg twice daily with warm water for 15 days or as directed by Ayurveda physician |

In addition to these medicines; general and dietary measures are to be followed.

In addition to these medicines; general and dietary measures are to be followed.

| clinical severity | Clinical presentation | Clinical parameters | Medicines | Dose and timing |
|--------------------------------|---|---|--|---|
| MILD COVID -19 POSITIVE | SYMPTOMATIC MANAGEMENT Fever Headache Tiredness Dry cough Sore throat Nasal congestion | WITHOUT EVIDENCE OF BREATHLESSNESS OR HYPOXIA (NORMAL SITUATION) | Guduchi + Pippali (Aqueous extracts Tinospora cordifolia IP and Piper longum IP) | 375 mg twice daily with warm water for 15 days or as directed by Ayurveda physician |

In addition to these medicines; general and dietary measures are to be followed.

Yoga Protocol for Primary Prevention of COVID- 19

- To improve respiratory and cardiac efficiency
- To reduce stress and anxiety
- To enhance immunity

Morning Session (30 Minutes)

| | Practices | Name of Practice | Rounds | Duration (Minutes) |
|---|------------------------------------|----------------------|---------|--------------------|
| 1 | Preparatory Practices (In sitting) | Tadasana | | 1 min |
| 2 | | UrdhvaHastottanasana | | 1min |
| 3 | | Shoulder rotation | 3Round | 2min |
| 4 | | Trunk twisting | 3 Round | 1min |
| 5 | | Ardha ustrasana | | 1min |

| | | | | |
|----|---------------------|----------------|---|-------|
| 6 | Breathing Practices | Vaataneti | 2 Rounds (30 secs/round) | 2 min |
| 7 | | Kapalabhati | 3 Rounds (30 secs/round) | 2 min |
| 8 | | Deep Breathing | 10 Rounds | 2 min |
| 9 | Pranayama Practices | Nadishodhana | 10 Rounds | 6 min |
| 10 | | Ujjaayee | 10 Rounds | 3 min |
| 11 | | Bhramari | 10 Rounds | 3 min |
| 12 | Meditation | Dhyana | Awareness of breathing or Awareness of Positive thoughts /emotions /actions | 6 min |
| | | | Total Duration | 30 |

Management of Mild COVID-19 Cases

| Clinical severity | Symptom | Formulation | Dose |
|-------------------|--------------------------------|-----------------------------|--|
| Mild COVID-19 | Fever with Body ache, Headache | Nagaradi Kashaya | 20 ml twice a day |
| | Cough | SitopaladiChurna with honey | with Honey 2 g thrice daily |
| | Sore throat, Loss of taste | Vyoshadivati | Chew 1-2 pills as required |
| | Fatigue | Chyawanprasha | 10 g with warm water / milk once a day |
| | Hypoxia | Vasavaleha | 10 g with warm water |
| | Diarrhoea | Kutaja Ghana Vati 500 mg | 1 g thrice daily |
| | Breathlessness | Kanakasava | 10 ml with equal amount of water twice a day |

General and Physical measures

- Follow physical distancing, respiratory and hand hygiene, wear mask.
- Gargle with warm water added with a pinch of turmeric and salt.
- Nasal instillation/application of medicated oil (Anu taila or Shadbindu Taila) or plain oil (Sesame or Coconut) or nasal application of cow's ghee (Goghrita) once or twice in a day, especially before going out and after coming back to home.
- Steam inhalation with Ajwain (Trachyspermum mammi) or Pudina (Mentha spicata) once a day.
- Adequate sleep of 6 to 8 hrs.
- Moderate physical exercises.

Dietary measures

- Use warm water or boiled with herbs like ginger (Zingiber officinale) or coriander (Coriandrum sativum) or basil (Ocimum sanctum / Ocimum basilicum), or cumin (Cuminum cyminum) seeds etc., for drinking purpose.
- Fresh, warm, balanced diet.
- Drink Golden Milk (Half tea spoon Haldi (Curcuma longa) powder in 150 ml hot milk) once at night. Avoid in case of indigestion.
- Drink Ayush Kadha or Kwath (hot infusion or decoction) once a day.

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.

The patient recorded and reported the vital check points regularly. Patient tolerated Ayurvedic treatments well and was compliant. Any adverse and unanticipated events were not observed.

II. DISCUSSION

The basic concept of disease in Ayurveda has been said to be an imbalance of Doshas and derangement of Mandagni (~digestive fire) which leads to a decreased level of immunity and subsequently making body susceptible to infectious agents.

The manifestation of this disease can be compared to Sannipatikajwara especially of

Kaphaja or Vatajapredominance where in symptoms such as Pratishyaya (~running nose), Kasa (~cough), Tandra (~drowsiness), Aruchi (~decreased appetite), Ajirna (~indigestion), Shirahshula (~headache) are present, or Shwasa (~breathlessness), Shushka kasa (~dry cough), Mukha shosha (~dryness of mouth) and Atiparshvaruk (~pain in the thoracic region). The choice of drugs made is to emphasize on improving digestion, protection of respiratory system, and improving the bodies' defense.

III. CONCLUSION

It is difficult to conclude actual effectiveness of the treatment on the basis of case study, but the results are encouraging enough to conduct more work on COVID-19 involving Ayurveda. The most significant finding in this study was early negative RTPCR detection, and a restraint observed in the disease progression to rigorous stage. Almost all the symptoms resolved within a period of 11 days. This may pave the way to a more integrated approach toward resolution of the morbidity.

Declaration of patient consent

The authors certify that they have obtained patient consent form, where the patient/caregiver has given his/her consent for reporting the case along with the images and other clinical information in the journal. The patient/caregiver understands that his/her name and initials will not be published and due efforts will be made to conceal his/her identity, but anonymity cannot be guaranteed.

REFERENCES

- [1]. World Health Organization. Novel Coronavirus (2019-nCoV) Situation Report - 1. Geneva: WHO; 2020. [[Google Scholar](#)]
- [2]. Guo YR, Cao QD, Hong ZS, Tan YY, Chen SD, Jin HJ, et al. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - An update on the status. *Mil Med Res.* 2020;7:11. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [3]. COVID-19 dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) [accessed on April 15, 2020].

- Available from: <https://arcgis/OfHmTX>><https://arcgis/OfHmTX>.
- [4]. World Health Organization. Novel Coronavirus (2019-nCoV) Situation Report - 46. Geneva: WHO; 2020. [[Google Scholar](#)]
- [5]. The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) - China, 2020. *China CDC Week*. 2020;2:113–22. [[Google Scholar](#)]
- [6]. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical Characteristics of coronavirus disease 2019 in China. *N Engl J Med*. 2020;382:1708–20. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [7]. Vardavas CI, Nikitara K. COVID-19 and smoking: A systematic review of the evidence. *Tob Induc Dis*. 2020;18:20. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [8]. World Health Organization. Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected: Interim guidance V 12. Geneva: WHO; 2020. [[Google Scholar](#)]
- [9]. Anderson RM, Heesterbeek H, Klinkenberg D, Hollingsworth TD. How will country-based mitigation measures influence the course of the COVID-19 epidemic? *Lancet*. 2020;395:931–4. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [10]. Zou L, Ruan F, Huang M, Liang L, Huang H, Hong Z, et al. SARS-CoV-2 viral load in upper respiratory specimens of infected patients. *N Engl J Med*. 2020;382:1177–
9. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [11]. Rodriguez-Morales AJ, Cardona-Ospina JA, Gutiérrez-Ocampo E, Villamizar-Peña R, Holguin-Rivera Y, Escalera-Antezana JP, et al. Clinical, laboratory and imaging features of COVID-19: A systematic review and meta-analysis. *Travel Med Infect Dis*. 2020;34:101623. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [12]. Lippi G, Plebani M. Laboratory abnormalities in patients with COVID-2019 infection. *Clin Chem Lab Med*. 2020 doi: 101515/cclm-2020-0198. [[PubMed](#)] [[Google Scholar](#)]
- [13]. Shi H, Han X, Jiang N, Cao Y, Alwalid O, Gu J, et al. Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: A descriptive study. *Lancet Infect Dis*. 2020;20:425–34. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [14]. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395:497–506. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
- [15]. Ministry of Health & Family Welfare. Guidance document on appropriate management of suspect/confirmed cases of COVID-19. New Delhi: MoHFW, Government of India; 2020. [[Google Scholar](#)]
- [16]. Centers for Disease Control and Prevention. Testing for COVID-19. [accessed on April 19, 2020]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms->