



Exploring the potency of Ayurveda in pandemic caused by COVID-19 on scientific parameters

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Ayurveda is a time tested medical science of Indian subcontinent and being practiced with legal recognitions by the Government. The causative factors of existence of Ayurveda in Indian culture are its indicative positive lifestyle and its holistic therapeutic doctrine to treat a disease. In this pandemic of COVID, all most every citizen is looking for its preventive and curative measures. All leading health agencies are advocating that the innate immunity of an individual is a boon for the prevention of infection from coronavirus and helps in curative protocol effectively. Ayurvedic measures and medicines may be an answer to the global question “how to enhance immunity”. The leadership of India comprising administration and science are looking for scientific validation of claims of immunity boosting through Ayurvedic measures and medicines. Here is a need of robust research protocol to get the Ayurvedic measures and medicines in the terms of contemporary science as per the norms of CDSCO, ICMR and CSIR for medicine for the global acceptance of Ayurveda in service of ailing humanity due to different diseases and at present COVID-19.

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Quote “Elaborating on the import of these studies, Dr Harsh Vardhan stated that these studies shall re-establish the importance of AYUSH pathies with the help of rigour of CSIR, ICMR and DCGI. “This is truly a momentous day. The technology alliance provides valuable opportunity for such knowledge-based solutions to continue to benefit us even after the COVID-19 pandemic has passed, by possible integration of AYUSH in the mainstream scientific efforts”, he added. Let us also understand that the modern pathies of medicine and science are not in competition with those of AYUSH, but they complement and strengthen each other in intrinsic ways, Dr Harsh Vardhan stated. Under the leadership of our beloved Prime Minister, AYUSH advisories for enhancing immunity during COVID-19 pandemic have been acknowledged the world over”, he said. Unquote¹. This statement of Health and Family Welfare Minister of Government of India on 07 May 2020 on the occasion of the launch of Arogya Sanjivani App and Clinical Trial to explore possibilities of prophylactic and curative effect of Ayurvedic interventions is a milestone in the path of parameters being adopted for

the scientific validation of Ayurvedic wisdom at par to the parameters of contemporary science.

Since the declaration of COVID-19 as a pandemic by World Health Organization, the Indian Government had initiated all measures to combat the COVID with quick and prominent responses². All concerned ministries of the union government of India such as Ministry of Home Affairs, Ministry of External Affairs, Ministry of Health and Family Welfare and of course Ministry of AYUSH have commenced many measures and continuous notification for the common public about the steps which should be followed by all citizens of the country and as well as government machinery to tackle terror of COVID-19. The first major step was the announcement of Lockdown on 25 March 2020 all across the country to follow social distancing to check the propagation of COVID-19 in India³. At the same time several steps were taken at war level to construct quarantine centres, more hospital beds, the arrangement of ventilators, PPE kits, Investigation kits for Corona warriors, to save our country (India) with the fatal impact of COVID-19, as India was witnessing the casualties as in Europe and USA^{4,5}.

Ayurveda is an integral part of Indian Culture. This is being practiced in Indian subcontinents since past thousands of year successfully⁶. The fundamentals of

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therapeutics and pharmaceuticals of Ayurveda have protected Indians in a sound sense of health and treated almost all diseases created in different phases of progressive history from Vedic period to this contemporary period of 21st century⁷. Therefore, with the onset of COVID-19, in India people started considering Ayurveda for its prevention and cure. The belief on the potency of Ayurveda to combat COVID-19 was enhanced when modern scientists have advised that innate immunity of the individual is the basic tool to combat COVID before and after infection⁸.

Ayurvedic perspective of COVID

Every narration of Ayurvedic doctrine, its medical philosophy for the etiology, symptom and treatment part is quoted in Ayurvedic Classics⁹. Out of hundreds of classical books of Ayurveda, the trio of larger texts i.e. Vrihat Trayee namely *Carak Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya* and the trio of smaller texts i.e. Laghu Trayee namely *Madhav Nidan*, *Sharnghdhar Samhita* and *Bhav Prakash* are the main prominent referral textbooks of Ayurveda¹⁰. This is very true that by the name of COVID, nothing is available in Ayurvedic Classics. But a close comparative analysis of the causes of infection by Coronavirus, its impact on the human body, symptoms after infections and cause of death all these many factors are dealt with in Ayurvedic classical literature.

The World Health Organization (WHO) and all other organizations like Centre for Disease Control (CDC), National Institute of Health (NIH), Indian Council of Medical Research (ICMR) are advocating Social distancing to avoid physical contacts among humans, so that the spread of infections of Corona Virus may be prevented¹¹. The Ayurvedic Classics have instructed back thousand years about all measures to check contact infections from a diseased person by this way:

प्रसङ्गाद्वात्रसंस्पृशान्निश्वासात् सहभोजनात् ।
सहशय्यासनाच्चापि वस्त्रमाल्यानुलघ्ननात् ॥३३॥
कुष्ठं ज्वरश्च शोषश्च नद्याभिष्यन्द एव ॥
औपसर्गिकरोगाश्च सङ्क्रामन्ति नरात्ररम् ॥३४॥

Aoupasargika Rogas Sushrut Samhita, Nidan Sthan 5/33-34

In these verses, Ayurveda has advised that frequent touching of the body of the patient, inhaling his expired air, dining, sleeping and sitting together,

wearing dresses garlands and unguents used by the patients are the cause of *aupsargika roga* i.e. contagious diseases which spread from one person to other¹².

The Sushruta Samhita in *Sutra Sthan* chapter 6 during the discussion of “Ritucharya” (seasonal lifestyle) indicates that due to कदापिदव्यापन्नञ्चपि ऋतुषु - inappropriate seasons, कृत्या - :wrong karma ॥ भिशाप - : the curse of animals and kinds, राक्षस - :demons (viruses, bacteria), क्रोध - : disrespectful for Nature ॥ धर्म-: non--religious रूपध्वस्यन्तञ्जनपदाः, breakdown living culture वापुनोपनीततप्तक्रम्यत:- vitiated air like substance and it creates effect to ॥ दष्टास्त्रदोषप्रकृत्यविशष्टः :-convert or mutant to the nation by nation and produce a group of symptoms¹³.

These symptoms are कास- coughing श्वास - breathlessness, वमथु vomiting, प्रतिश्या ॥ running nose, शिरोरुग -headache, ज्वरै fever. रूपतप्यन्त ॥ विविधरोगप्रादुर्भावो "मरको" वा भवदिति. Various disease and epidemics are manifested¹⁴.

Similarly in *Carak Samhita* and *Ashtanga Hridaya* “Janpadodhwansa” means high-level destructive changes which badly affect living creature of the earth, have been described elaborately, with the causative factors and its remedies. The characteristic features of the onset of the “Janpadodhwansa” are very similar to features of epidemic /pandemic¹⁵. Not only these, but Ayurvedic literature also suggests measures to check it such as ॥ कित्सा: treatment तत्र, स्थानपरित्याग return to home शान्तिकर्म work and maintain peace प्राश्चित्त ready to pay for penalty मङ्गल Being prosperous जप keep mind Busy होम ritual habits like hand wash उपहार ॥ Gift right scene ईज्याञ्जलि sacrifices नमस्कार you know well तपो Austerity नि ॥ make and follow rules द ॥ kind towards living beings दान contribution दीक्षा purpose of purifying World ॥ भ्युपगम acceptance दद्वताब्राह्मणगुरुपरैर्भवितव्यम् pray to God. एवं साधु भवति |You definitely get a win over the disease¹⁶.

It simply means if we adapt these practices in the period of pandemic, certainly the human race will combat with the COVID-19 successfully. All these behavioral follow up among individual with some modifications as per the present day society keeping basic philosophy of indication intact will save human being infected with COVID-19. Wearing a mask and keeping a distance of one meter between two individuals are the part of the same measure which has been in narrations of Ayurvedic classics elaborately¹⁷.

The treatment part of the infectious patients is also defined in *Vrihat Trayee* very systematically. It is evident that COVID -19 is showing complications of respiratory system especially pneumonia which is a prominent cause of death due to infection of Corona Virus. However recent reports published from Italy after the postmortem of the deceased due to COVID-19 revealed that cause of death is thrombosis¹⁸. In Ayurvedic Classics in the respective chapters of respiratory and cardiovascular disorders, the treatment profile is discussed with a range of herbal preparation to herbo mineral preparations of Ayurveda. Some exemplary medicines are *Shirashadi Kwath*, *Gojiwahadi Kwath Gandhak Rasayan*, *Swaran Basant Malati* and many more as per the condition of disease and diseased¹⁹.

Immunity-boosting through Ayurveda as prophylaxis measures

All leading health organizations of the world are expressing a uniform opinion that enhancement of innate immunity of an individual is an ultimate measure for the protection of infection of COVID. Ayurveda lifestyle and medicines may boost the immunity of particular person if they adopt these measures in their habit. Ministry of AYUSH, Government of India had published its advisory for immunity enhancement twice in the past two months with detail of measures from all AYUSH systems²⁰ (Fig. 1 & 2). The endorsement of Ayurvedic measures to boost immunity by taking ayurvedic decoction and measures of lifestyle by Honorable Prime Minister of India twice in national address has boosted the belief of common man to Ayurveda²¹.

COVID-19 Crisis

Ministry of AYUSH recommendations, based on Ayurvedic literature and scientific publications, for preventive health measures and boosting immunity with special reference to respiratory health.

Measures for Enhancing Immunity

- Drink warm water throughout the day.
- Daily practice of Yogasana, Pranayama and Meditation for at least 30 minutes.
- Spices like Haldi (Turmeric), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) recommended in cooking.

Simple Ayurvedic Procedures

- Nasal Application**– Apply Sesame Oil/Coconut oil or Ghee in both the nostrils (Pratimarsh Nasya) in morning and evening.
- Oil Pulling Therapy**– Take 1 table spoon Sesame or Coconut Oil in mouth. Do not drink, swish in the mouth for 2 to 3 minutes and spit it off followed by warm water rinse. This can be done once or twice a day.

Ayurvedic Immunity Enhancing Tips

- Take Chyavanprash 10gm (1tsf) in the morning. Diabetics should take sugar free Chyavanprash.
- Drink Herbal Tea/Decoction (Kadha) made from Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black Pepper), Shunthi (Dry Ginger) and Munakka (Raisin) - once or twice a day. Add jaggery (Natural Sugar) and/or fresh Lemon Juice to your taste, if needed.
- Golden Milk- half tea spoon Haldi (Turmeric) powder in 150 ml Hot Milk - once or twice a day.

Immunity Boosting Measures for Self-Care

Actions During Dry Cough/Sore Throat

- Steam inhalation with fresh Pudina (Mint) leaves or Ajwain (Caraway Seeds) can be practiced once in a day.
- Lavang (Clove) powder mixed with Natural Sugar/Honey can be taken 2-3 times a day in case of cough or throat irritation.
- These measures generally treat normal dry cough and sore throat. However, it is best to consult doctors if these symptoms persist.

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Fig. 1 — Advices of Ministry of AYUSH, Government of India to Boost Immunity to Combat with COVID (Source: <https://www.ayush.gov.in>)

The notification of Ministry of AYUSH on 24 April 2020 regarding AYUSH Kwath is a boon for the adaption of immunity if people follow it. The ingredients of AYUSH Kwath are Tulsi (*Ocimum sanctum*) leaves 4 parts, ii) Dalchini (*Cinnamomum zeylanicum*) stem bark 2 parts, iii) Sunthi (*Zingiber officinale*) rhizome 2 parts, and iv) Krishna Marich (*Piper nigrum*) fruit 1 part. This may be prepared as per the procedure being discussed here. Take all the ingredients in dry form as per standards laid down in Ayurvedic pharmacopoeia and make a coarse powder. Make sachets or tea bags each of 3 grams of powder or 500 mg. tablet of aqueous extract, to be consumed like tea or hot drink by dissolving in 150 ml of boiled water, once or twice daily. Gud (Jaggery) / Draksha (Raisine) and/or lemon juice can be added while consuming the formulation²².

Recently research papers are appearing with scientific evidence that Ashwagandha (*Withania somnifera*) is showing immunity enhancing properties^{23,24}.

Scientific validation of classical indications of Ayurveda

The mushrooming claims of clinical effect of Ayurvedic medicines as prophylactic and curative measure on the print, electronic and social media have compelled Ministry of AYUSH, Government of India to notify that any bogus claim to treat COVID will invite penal action as per relevant law²⁵.

And in the continuity of its scientific approach, the Ministry of AYUSH, Government of India has constituted a TASK FORCE to examine scientific projects being submitted for the scientific validation of the clinical claims about treatment of COVID by AYUSH interventions. The task force will examine all proposals and few of them would be allocated funds to perform scientific studies as per norms of clinical guidelines of Indian Council of Medical Research (ICMR) and previous to this AYUSH medicines would be calibrated on the norms of Central Drug Standard Control Organization (CDSCO).

Ayurvedic Immunity Promoting Measures

1.  Take Chyavanprash 10gm (1tsf) in the morning. Diabetics should take sugar free Chyavanprash.
2.  Drink herbal tea / decoction (Kadha) made from Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Shunthi (Dry Ginger) and Munakka (Raisin) - once or twice a day. Add jaggery (natural sugar) and / or fresh lemon juice to your taste, if needed.
3.  Golden Milk- Half tea spoon Haldi (turmeric) powder in 150 ml hot milk - once or twice a day.

Fig. 2 — Advices of Ministry of AYUSH, Government of India to Boost Immunity to Combat with COVID (Source: <https://www.ayush.gov.in>)

On 07 May 2020, Ministry of AYUSH, Ministry of Health and Family Welfare and Ministry of Science and Technology formally launched a Scientific project for clinical studies of Ayurvedic Medicines as per under mentioned details²⁶.

Clinical research studies on Ayurveda interventions as prophylaxis and as an add-on to standard care to COVID 19

Collaborative clinical studies as a joint initiative of Ministry of AYUSH, Ministry of Health and Family Welfare (MoHFW) and the Ministry of Science & Technology through Council of Scientific & Industrial Research (CSIR) with technical support of ICMR are undertaken.

The *Interdisciplinary Ayush R&D Task Force* has formulated and designed clinical research protocols for prophylactic studies and add-on interventions in COVID-19 positive cases through a thorough review and consultative process of experts of high repute from different organizations across the country for studying four different interventions viz. *Ashwagandha*, *Yashtimadhu*, *Guduchi* + *Pippali* and a polyherbal formulation (AYUSH-64).

Ashwagandha for the prophylaxes against SARS-COV-2 in subjects with increased risk during the COVID-19 Pandemic: A comparison with hydroxychloroquine in the health care providers and effectiveness of Ayurveda formulation as an adjunct to 'Standard of Care' for the treatment of mild to moderate COVID-19: A randomized, open-label, parallel efficacy, active control, multi-centre exploratory drug trial.

Population-based interventional studies on the impact of AYUSH based prophylactic interventions

The ministry of AYUSH is initiating population-based studies to study the impact of Ayurvedic Interventions in the prevention of COVID-19 infection in the high-risk population. The core objectives comprise of, assessment of the preventive potential of AYUSH interventions for COVID 19 and also to assess the improvement in quality of life in the high-risk population. The study will be carried out through four Research Councils under Ministry of AYUSH and National Institutes in 25 states across the country and several State Governments covering approximately 5 lakhs population.

Ayush Sanjivani application-based study for impact assessment of acceptance and usage of AYUSH advisories in its role in the prevention of COVID 19

The Ministry of AYUSH has developed *Ayush Sanjivani* mobile app, for generating data of large

population with a target of 5 million people. The core expected outcomes include: to generate data on acceptance and usage of AYUSH advocacies and measures among the population and its impact in the prevention of COVID 19.

Conclusion

Ayurveda is a science of life and has treasure trove for the treatment of ailments of human even of the diseases of the contemporary era with different references. Here is a need for the careful examination of all those references of lifestyle and treatment protocol in accordance with present-day science. The outcome of the study planned by Ministry of AYUSH, Ministry of Health and Family Welfare and Ministry of Science and Technology, Government of India would certainly pave a new horizon in understanding the preventive potential of AYUSH interventions during pandemics like COVID 19 through scientific evidence in the interest of global citizens.

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Conflict of Interest

Author declare there is no conflict of interest

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