



# **Role of Ayurveda in Pandemic Situation (COVID-19) and Involvement of Pranwah Srotas with Its Treatment: Review Article**

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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**Review Article**

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## **ABSTRACT**

Pandemic disease affects the whole world. COVID-19 is a Pandemic disease which deteriorates an individual's life, not only in a specific country but the whole world is suffering. Individuals health, life, economy affected by this Corona virus. It is proven that corona virus can infect people of all ages, but there are people with high risk of contamination who are elderly, individuals with a compromised immunity system and people with health conditions like diabetes, heart disease, kidney failure, asthma, lung disease etc. It is highly contagious that's why it is more dangerous than other viruses of its family. we can prevent from this viral disease by taking such precautions no antibiotics is beneficial in corona virus infection so we can prevent ourselves from this virus by taking preventive measures. *Sushrut* has mentioned *aupsargik rog* (communicable disease) in *Ayurveda*. *Ayurveda* is an ancient science, which believe in preventive measures for healthy persons and treat a patient by medicines which is described in ayurvedic textbook and *Aachar rasayan*.

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## 1. INTRODUCTION

COVID-19 is a contagious disease, it is highly transmissible. This feature makes it a very dangerous disease. It belongs to the family coronaviridae. Severe acute respiratory syndrome coronavirus 2(SARS-CoV-2) is the virus strain that causes coronavirus disease (COVID-19) in 2019. It belongs to the large family RNA virus. There are 7 members, 4 produce common cold while other 3 produce lethal respiratory syndrome. SARS in 2004, MERS in 2013 noted and newest member coronavirus produced COVID-19 first noted in December 2019 in Wuhan, China. Its name is SARS-CoV-2 due to its resemblance with SARS virus. It shows a serious effect on the respiratory tract, but it is totally different from SARS Virus in view of replication, it replicates more frequently in the upper respiratory tract than SARS virus. Surface protein forms knobs on surface of SARS-CoV-2 Which bind with ACE 2 receptor which present on bronchial epithelial cells and internalized by endocytosis RNA replicated and nuclear capsid with RNA and vesicle formed, virus enclosed in vesicle and then undergoes exocytosis and released into extracellular fluid where it can infect adjacent cells as well as infect new host. Virus can replicate in nasal passage and oropharynx during first 24 to 48 hours of infection during this period patient is asymptomatic as the virus can migrate to the bronchi and then into the alveoli. And then it induce inflammation and symptomatic disease the inflammatory response of virus cause breakdown of the alveoli fall and leaky serum into the alveoli which acutely blocking the exchange of oxygen in the lungs. Over the time passage alveoli wall become fibrotic and this condition interfere with oxygen exchange.

**Transmission:** Transmission of SARS-CoV-2 can occur through direct, indirect or close contact with infected people through infected secretion such as saliva and respiratory secretion or their respiratory droplet. Cough originate droplet with virion spread into surrounding but the droplet cannot project beyond 2 meter or 6 feet. Aerosols below 10 microns remain in air for 3 hours. Only close contact with an infected person inhales the droplet. Virus can present in stool but it is difficult to culture, and hosts can infect 2 to 2.5 people [1].

**Srotas:** Srotas are the channel present in the body which convey body elements from one place to another place. Srotas is derived from

Sanskrit root "sru gatau" dhatu means oozing, flowing, permeate etc "sraṇat srotāsi" [2]. The structure through which Sarana Karma that is flowing, moving, oozing and permeation takes place those channels are known as srotas. by these channels conduction of respective elements to their respective destination can be possible. "**Srotamsi Khalu Parinampadhyamananam Dhatunam Abhivahinibhavyantaya Ayanarthen**" [3] those channels play important role in carrying dhatus. Srotas play important role in physiological and pathological process in the the body. Stagnation in srotas leads to development of diseases. Pranvaha srotas is most important srotas among all the srotas because it carries pran vayu which necessary element to sustain life. In ayurved Dash pranayatan are described where pran resides, sankhau, marmatrayam (hriday, basti, nabhi), guda, shukra, oja, rakta [4].

**Pranavahasrotas Involvement:** *pranvahsrotas* is that channel present in our body which carries *prana* or oxygen. There are two moola present in *pranvahsrotas* and according to Chakrapani "The commentator Adhamalla, in his commentary "Gudharth Sandipani" over the above verse describes that "Nabhisthapranpavana" means "Nabhistha-Iti- Hridayasth" Heart with vessels is called Nabhi in Ayurveda, not only lungs concern with the respiration but lungs along with heart are responsible for respiration [5]. In the diseases of Pranavaha srotas, similar symptoms are found as it is in connection with an organ like heart, lungs. The treatment protocols for diseases of Pranavahasrotas includes general Snehan Karma (Oleation) and Swedan Karma (Sudation) therapies, Vamana (emesis), Dhumapana (medicated smoking) therapy, Rasayan therapy (Rejuvenation Therapy), *Dushti* of that srotas leads to death of a person because impairment in *pranvahsrotas* lead to interference in passage of oxygen which definitely cause diseases related to *pranvahsrotas* and can lead to death. symptoms of *dusht* (impaired) *pranvahsrotas* are *atisrustha swas* (too long breathing), *kupita swas* (aggravated breathing), *alpa alpa* (shallow breathing), *shashabd swas* (breathing associated with abnormal sound like wheeze), *sashula swas* (breathing associated with pain) [6].

**Cardiopulmonary System:** Cardiopulmonary system consist of two system one is

cardiovascular system and other is pulmonary system. Cardiovascular system transport the blood to the whole body part and pulmonary system exchange gases between environment and body. Both system are interdependent. Because they help each other in transportation of oxygen with the help of blood. Pathogenesis of one system leads to vitiation of another system. Clinical symptom like Chest pain, Orthopnea, Fatigue, Palpitation and Sign like Pyrexia Clubbing, Edema etc. can be seen [7]. And in the lung diseases various sign and symptom we can observe like Cough, Pyrexia, Dyspnea, Tachypnea, Cyanosis, abnormal breath sound and Sign of heart failure [8].

**Aupsargik( communicable) roga in Ayurveda:** COVID-19 is a contagious disease we can prevent from this by following some preventive measures. In ayurved contagious disease is already mentioned under *aupsargik rog* Acharya *Sushrut* has mentioned *aupsargik rog* as they are contagious disease which spread through direct contact or contaminated object of patient by physical contact, expired air, eating with infected patient in same vessel, sharing bed, using clothes, use infected person *mala* (garland) and *lepan* (face mask or paste). *Aupsargik rogs* are belong to that category which can spread from one person to person [9].

**Causes of Epidemic or Janpadodhwansh:** Root cause of vitiation of factors are *pragyapradh* (intellectual blasphemy), that also arises from misdeeds of previous life. Adharma (sinful act). God deserts the people of that place and water, air, earth, drugs, food impaired. A sinful act is at the root cause of destruction of the community by weapon due to other people also getting destroyed by *Rakshas* (demons which are invisible like virus and bacteria) and varieties of other creatures [10].

**Motive of Ayurveda:** Aim of Ayurveda is first to prevent the health of a healthy person and giving curative treatment to patients. The policy of Ayurveda is first prevention and then treatment [11].

**Preventive aspect in COVID - 19** – Prevention of Covid- 19 can be done by the help of Yoga and asanas and by adoption of preventive measures and by improving our lifestyle.

**Achar Rasayan chikitsa or Good Deed:** Design therapy adopted with a good lifestyle and preventive measure to improve physical health. Palan of *achar rasayan* like *satya* (truthfulness),

*daya* (mercy) *dana* (donation to righteous person), *bali* (sacrifices of sins, bad habits), *devatarchana* (prayer), *sadvritta* (good deeds and follow proper *ritucharya* and *dincharya* like having proper diet, maintain cleanliness), adoption of preventive measures, *mantradi raksha* (protection of self by *mantra*) are comes under good deeds. [12].

**Yoga:** *Yoga* like *Pranamayam*. It is very effective in COVID-19 situation, because we can define it as controlling the motion of exhalation and inhalation, So it is direct affect our lungs and make it healthy. It is a combination of meditation and asanas which helps us to become fit physically and mentally. *Pranayam* make lungs healthy and also we can use *pranayam* in preventive measures for regulation and to control our breath [13].

**Asanas - Uttanasana (forward bend):** This *Yoga* exercise is a great way to relieve congestion and protect the sinuses and mucus membranes, which are the first form of defense [14].

**Shalabhasana:** This asana improve the lung capacity of the individual and increase respiratory efficiency [15].

**Bhujangasana:** It will helps in improving the circulation of heart and lungs by stretching shoulder, chest, abdomen and lungs [16].

**Treatment of pranvahsrotas:** *Pranvahsrotas* should be treated like *swasa rog* (like asthma) [17]. Use of warm water, *sunthi* (*Zingiber officinale*) *haridra* (*curcuma longa*), *guduchi* (*Tinospora cordifolia*) etc. which is described in *Charak chikitsasthan* chapter 17. Active ingredient *Gingerol*, *shogol*, *zingeron* present in *shunthi* shows anti-inflammatory activity [18]. *Guduchi* exert antiinflammatory, antiallergic and anti-oxidant activity. [19].

Use of *swedan* for bronchodilation mentioned in *Charak chikitsasthan* chapter 17 *Swedan* (steam bath) is described in *Charak samhita* for *hikka* and *swasa rog*. First of all we have to apply *tila tail* mixed with *sendha namak* on patients chest region and do little massage for a while with it and then use *nadi sweda* (it is a type of *swedan*) over the chest for a few minutes to release mucus which is stuck in lungs passage. With use of this *abhyang* and *Swedan*, thick mucus will be liquified and come out very easily and after clearance of passage patient gets relief.

## 2. MATERIALS AND METHODOLOGY

Data on COVID-19 is collected by the internet and review of Ayurvedic literature is collected by Ayurveda samhita like Charak samhita and Sushrut Samhita, Textbooks of Yoga and modern medicine book.

## 3. DISCUSSION

COVID-19 is a pandemic disease which transmits person to person very frequently. Patient can be asymptomatic for a week but he or she can be carrier for virus and transmit droplet with virion to their surrounding as virus can survive in fomite for few hours and in air upto 3 hrs.so we can prevent transmission of virus through isolation or keeping a particular distance from a person. We don't have to share bed, clothes and garlands with others. In COVID-19 involvement of respiratory tract occurs and there is involvement of *pranvahsrotas* according to *Ayurveda*. Because we can correlate *pranvahsrotas* with cardiopulmonary system. As we see similarity in sign and symptoms of cardiopulmonary system with *dushti* of *pranvahsrotas* As SARS- CoV-2 is named due to the severe acute respiratory syndrome. Treatment of *pranavaha srotas* which is given in ayurvedic text book we can give in COVID-19, and can use immunity booster to boost immunity to prevent from COVID -19 because it is highly transmissible and can affect 2 person in same time, it is highly contagious due to its replication. There is variation in clinical presentation, Few shows symptoms and some are asymptomatic and play role as carrier for virus.

## 4. CONCLUSION AND SUMMARY

Whole world is suffering from COVID-19 and it is spread from human to human by droplet produced by infected people whether they are symptomatic or asymptomatic. It is related to SARS virus but very dangerous than SARS virus in view of replication. So we only can be in healthy state by taking some precaution which is described in *apsargik* rog and by increasing our immunity, it is proven that some person has been asymptomatic even after exposure to virus. Involvement of *pranvahsrotas* is present in that disease and can be cured by medicine which is described in ayurved for *swas*. *Aupsargik rog* which is communicable disease described in Ayurveda which is science of sages that is the proof that they had knowledge about

communicable disease and *janpadodhwans* (Epidemic) that's why they give preventive measures even before origin of communicable disease in this modern era.

Significance of study:

Significance of study: The study highlights the efficacy of "Ayurveda" which is an ancient tradition, which has been used in India. This ancient concept should be carefully evaluated in the light of modern medical science and can be utilized if found suitable.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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