

## CONCEPT OF COVID-19 IN AYURVEDA: A REVIEW ARTICLE

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## ABSTRACT

Corona Virus or COVID-19 is creating a great havoc all over the globe. It is a worldwide epidemic. Since no medicine or vaccine has been discovered so various preventive measures should be followed to keep this vaccine at the bay. *Ayurveda* has mentioned about *Janapadadhwamsa* way before. It has been clearly mentioned that the four factors for causing epidemic are *Vayu*, *Jala*, *Desha* and *Kala*. The treatment principle are also mentioned in various classics like following the *Sadvritta*, taking *Rasayana* therapy as prophylaxis, performing *Panchakarma*. However *Nidanparivarjana* is the first thing that should be followed. The symptoms showed in COVID-19 can be correlated with the various diseases that come under *Pranavahasrota* that is *Swasaroga*, *Kasaroga* etc. Various single herbs are mentioned for *Pranavahasrota* which can be helpful in COVID-19.

**KEYWORDS:** COVID-19, *Ayurveda*, *Janapadadhwamsa*, *Rasayana*, *Pranavahasrota*.

## INTRODUCTION

In *Ayurveda* though the disease COVID-19 is not directly mentioned but its sign and symptom resembles in certain disease according to *Ayurveda*. *Acharya Caraka* said 5000 yrs back that there will be many diseases in future which will called *Aviskritamroga* and can be nomenclature according to *Karana* (causative factor), *Dosha* (humors of body), *Dushya* (bodily tissue), *Adhithana* (location of diseases) and *Linga* (sign and symptoms) etc.<sup>[1]</sup> COVID-19 is such a disease which can be categorized under *Pranavahasrotas* diseases according to its sign and symptoms. Till now it spreads million of people all over the world and it declared as pandemic which was told as *Janapadodhwamsa* in *Ayurveda*. According to *Susruta* it is a *Aupasargikvyadhi* means it is a communicable disease.

A group of spherical or pleomorphic enveloped RNA viruses, carrying petal or club shaped pleomorph on their surface has been classified as Corona viruses. Previous outbreaks of coronaviruses (CoVs) include the severe acute respiratory syndrome (SARS)-CoV. In November 2002 the Guangdong province in China experienced an outbreak of an unusual respiratory infections with many death. The world outside knew about it only in 2003 when a physician from Guangdong visited Hongkong, fell ill and died there, after affecting 12 person who stayed in the same hotel.<sup>[2]</sup> Later than in late 2019, the same disease named COVID-19 emerged again, where the epicentre was in Wuhan city of South China.

SARS spreads by inhalation of the virus present in droplets or aerosols of respiratory secretions of patients. Fecal aerosols also may be infectious. The incubation period is under 10 days. The disease starts as fever with cough or other respiratory symptoms. Diarrhea is sometimes seen. The chest radiograph shows pneumonic changes. Death is due to respiratory failure.<sup>[3]</sup>

## Pathogenesis

Patients infected with COVID-19 showed higher leukocyte numbers, abnormal respiratory findings, and increased levels of plasma pro-inflammatory cytokines. One of the COVID-19 case reports showed a patient at 5 days of fever presented with a cough, coarse breathing sounds of both lungs, and a body temperature of 39.0 °C. The patient's sputum showed positive real-time polymerase chain reaction results that confirmed COVID-19 infection. The laboratory studies showed leucopenia with leukocyte counts of  $2.91 \times 10^9$  cells/L of which 70.0% were neutrophils. Additionally, a value of 16.16 mg/L of blood C-reactive protein was noted which is above the normal range (0–10 mg/L). High erythrocyte sedimentation rate and D-dimer were also observed. The main pathogenesis of COVID-19 infection as a respiratory system targeting virus was severe pneumonia, RNAemia, combined with the incidence of ground-glass opacities, and acute cardiac injury. Significantly high blood levels of cytokines and chemokines were noted in patients with COVID-19 infection that included IL1- $\beta$ , IL1RA, IL7, IL8, IL9, IL10, basic FGF2, GCSF, GMCSF, IFN $\gamma$ , IP10, MCP1,

MIP1 $\alpha$ , MIP1 $\beta$ , PDGFB, TNF $\alpha$ , and VEGFA. Some of the severe cases that were admitted to the intensive care unit showed high levels of pro-inflammatory cytokines including IL2, IL7, IL10, GCSF, IP10, MCP1, MIP1 $\alpha$ , and TNF $\alpha$  that are reasoned to promote disease severity.<sup>[4]</sup>

### Transmission

Several reports have suggested that person-to-person transmission is a likely route for spreading COVID-19 infection. This is supported by cases that occurred within families and among people who did not visit the wet animal market in Wuhan. Person-to-person transmission occurs primarily via direct contact or through droplets spread by coughing or sneezing from an infected individual. In a small study conducted on women in their third trimester who were confirmed to be infected with the coronavirus, there was no evidence that there is transmission from mother to child. However, all pregnant mothers underwent cesarean sections, so it remains unclear whether transmission can occur during vaginal birth. This is important because pregnant mothers are relatively more susceptible to infection by respiratory pathogens and severe pneumonia.<sup>[5]</sup>

### AIM AND OBJECTIVE

An effort has been made to find possible Ayurvedic comparison to the current most prevalent communicable diseases, COVID-19.

### Conceptual Study

#### *Janapadodhwamsa Vyadhi*

Concept of outbreaks, epidemics and pandemics had mentioned in *Ayurvedic* classics 5000 yrs back. In the *Charaka Samhita Vimansthan* (one of the principle textbooks of *Ayurveda*) both the concept epidemics and pandemics are clearly described together with its preventive aspects. In *Ayurveda* pandemics are *Janapadodhwamsa* roga. Coronavirus is an example of *Janapadodhwamsa* roga.

Due to the vitiation of the factors which are common to the population, produces same signs and symptoms result in the manifestation of same disease causing death to a community can be termed as *Janapadodhwamsa*.<sup>[6]</sup>

In classic it is mentioned that which are common to the entire population, air, water, place/ habitat and the time period forms the responsible factors for the manifestation of *Janapadodhwamsa* (~communicable disease). Feature of vitiation of these factors has also been clearly explained in our science. Classification is based on the severity. Diseases arising due to vitiation of *Jala*(water) is more severe than arising due to vitiation of *Vayu*(air) and less severe than *Desha*(place). Diseases arising due to vitiation of *Kala* (particular time period) is more severe than *Desha*(place).<sup>[7]</sup>

***Aupasargic Roga***: According to *Ayurveda* *Aupasargic Roga* can be compared to contagious diseases in

contemporary science, According to WHO contagious or infectious diseases, are caused by microorganisms such as bacteria, viruses, parasites and fungi that can be spread, directly or indirectly, from one person to another. Some are transmitted through bites from insects while others are caused by ingesting contaminated food or water. *Acharya Susruta* elaborate very nicely the mode of spread of *Aupasargic Roga*. It can be spread by one person to another by.<sup>[8]</sup>

- *Gatrasamprasa*(Frequent contact of the body of the patient)
- *Niswasa* (inhaling his expired air)
- *Sahabhajanat* (dining together with the patient)
- *Sahasayasan* (sleeping and sitting together with the patient).
- *Vastramalaanulepana* (wearing dress, garlands and unguents used by the patient)

### Pranavahasrotas

The human body contains several channels through which the *Doshas*, *Dhatu*s and *Malas* travel which are called as *Srotamsi*.<sup>[9]</sup>

These are the basic thing of *Ayurveda*. *Acharya Charak* had explained *Srotas* as medicinal point of view while *acharya sushrut* had explained *Srotas* according to surgical aspect. There are thirteen *Abhyantrasrotamsi*, each of which relates to specific organs, and are increased and vitiated by specific factors.<sup>[10]</sup> *Pranavahasrotas* is first & important *Srota*, which carry *Pran*(vital things) all over body.

Vitiation of *Pranavaha Srotas* include suppression of one's natural urges; seasonal, environmental, lifestyle and dietary patterns that are *Ruksha*, *Sita* in nature; exertion and exercise while hungry etc. they produce different symptoms like *Kasa*, *Svasa*, *Hikka* etc.<sup>[11]</sup>

Its *Mulasthan* (origin), *Dustilakshana* (sign and symptom after vitiation) are related to respiratory system.

*Pranavahasrotas* is important & main *srotas* of the body. It starts from nose upto alveoli via external nares, nasal chambers, pharynx, trachea, bronchus & bronchioles, which carry oxygen or carbon dioxide to and from the lungs. From lungs these gases are transported to heart through pulmonary veins.

From heart oxygen is supplied to all cells of body. In this process heart plays a very important role so heart is considered as *Mulsthana* of *Pranavahasrotas*. The gaseous path and exchange occurs nose to alveoli, alveoli to heart by pulmonary veins, heart to all cells of body by arteries, again from all cells to heart with the help of veins. This path occurs through *Pranavahini Dhamani*.

After vitiation *Pranavahasrota* cannot work properly and leads signs and symptoms like increase of expiratory rate, whishing sounds during respiration, painful

breathing and tightening of chest. Commentator of *Susruta*, *Dalhana* says that When this srotas vitiate then following symptoms are seen *croshan* which means to cry, *winaman* means to bend forward, *bhramana* means vertigo, *mohana* means unconsciousness, *vepenani* means tremors of the body and at last death occurs.<sup>[12]</sup>

#### Sampraptighatakas (etiopathogenesis).

<i>Dosha</i>	<i>Vatakaphajavyadhi</i>
<i>Dushya</i>	<i>Rasa dhatu</i>
<i>Agni</i>	<i>Mangadni</i>
<i>Ama</i>	<i>Sama</i>
<i>Strota</i>	<i>Pranavahasrota</i>
<i>Srotodushtiprakara</i>	<i>Sanga, atipravritti</i>
<i>Vyakta</i>	Manifests in the upper part of body

#### Possible aspects of Ayurvedic preventive measure and Management for Covid-19

Ayurvedic treatments may not helpful to cure corona virus infection. But the Ayurvedic holistic approach to keep health of healthy person which we can say indirectly to prevent develop a diseases is the key for this pandemic. Ayurveda emphasizes remain abstain from causative factors and improving immunity through proper diet, drugs, sleep, lifestyle, yogasan, pranayam etc.

- **Nidanparivarjan**

*Chikitsa* is *rukpratikriya* (*Amarkosha*). Prohibition on restraint from *Nidan* constitutes the real treatment of disease. *Acharya Sushruta* emphasizes that the sum of all kind of *Chikitsa* in a particular disease is “*Nidanparivarjan*” i.e. by removing the *Karan* or *Hetu* the manifestation of disease get dissolved itself.<sup>[13]</sup> It is the first principle of *Chikitsa Sutra*. It is a communicable disease and according to *Ayurveda* it comes under *Sangkramikroga*. The causes of transmission as described above should be avoided at first. It means we should keep social distance means should not touch or remain close to the diseased person, avoid dining, sitting with the infected person, to avoid from droplet infection we should keep cover the mouth, should not share cloths, cosmetics with the diseases person.

- **Sanshodhanchikitsa**

- *Charak* has mentioned *Panchakarma Chikitsa* in *Janapodadhwamsa*.<sup>[14]</sup>

As it is a *Roga* of *Pranavahasrota* so here *Vaman* and *Virechan* is applicable. *Cakradutta* has clearly mentioned in *Hikkaswasa* chapter that *Vaman* and *Virechan* is applicable here as *Panchakarma*.

- **Samshamana chikitsa**

Proper administration of *Rasayana* therapies is advised in the effective management of communicable diseases which is described in *Janapadodhwamsa*.<sup>[15]</sup>

#### Importance of Rasayana

- According to *Kalpadruma Rasayana* means *Rasaraktadi Dhatus* (the bodily tissues) get their proper nourishment of tissues by *Poshaka Rasa*.
- *Sushrut* said about *Rasayana* that helps in delaying aging process, increases longevity, and intelligence and help to develop resistant power against diseases.<sup>[16]</sup>
- *Charaka* said that *Rasayana* makes the *dhatu*s of optimum quality.<sup>[17]</sup>

The benefits of *Rasayana* are that it gives optimum body strength physically and against diseases, good complexion, good voice and body glow. Promotes mental health, provides good memory and intellect, good power of senses, provides good life span, Helps to fight against as well as curing the diseases.

*Rasayana* act by, direct enrichment of the nutrient quality by promoting *agni vyapara* (increases digestive fire), by providing competence to the channels or passages.

*Naimittika Rasayana* is disease specific *Rasayana* which is one among the classification of *Rasayana* mentioned by *Sushruta*. It is having *Vyadhiharana* property means it can mitigates diseases.<sup>[18]</sup> Few *Naimittika Rasayana* explained in different classics according to diseases. *Rasayana* drugs are available in our classics in different disorders with special interactions with the *Srotas*.<sup>[19]</sup>

- *Agastya Haritaki Rasayana* for *Pranavaha Srotas*
- *Chyavanaprasa Rasayana* for *Rasavaha Srotas*, *Pranavaha*, and *Annavaha Srotas*
- *Pippali Rasayan* for *Pranavaha Srotas* and *Rasavaha Srotas*.

Administration of these *Rasayana* in proper way in different *Vyadhis* along with the prescribed medication will provide a fruitful result. During using *Rasayana* it should be kept in mind the *Desha* (place), *Kala* (season) and *Prakriti* (body constitution) of the patient. This *Rasayana* can be used as preventive aspect to different problems facing in the current pandemic communicable disease.

For any condition affecting *Pranavahasrotas* (respiratory channels) one should apply the treatment protocols recommended for *Shvasaroga*, *Kasaroga Chikitsa*—breathing difficulty, cough, and related disorders.

In *Brihatrayeeekar*s a wide range of herbs for the treatment of *Pranavaha Sroto roga* is found, in *Charaka Samhita* around 30 drugs are found in 3 categories under *Kasahara*, *Svasahara* and *Hikkahara Dasaimanis*,<sup>[20]</sup> related to *Pranavahasrotas*, while *Susrutha* and *Vagbhata* has mentioned *Svasa* and *Kasahara* drugs under different *Ganas* like *Surasadi* and *Vidarigandhadiganas*.<sup>21</sup> again different *Swashara* and *Kasahara* drugs are mentioned in their respective treatments in different chapters. Among these the drugs

like, *Puskaramoola*, *Tulsi*, *Abhaya*, *Trikatu*, *Sati*, *Brihati*, *Kantakari*, *Tamalaki*, are very frequently used drugs for the treatment of different *Pranavaha Srota Roga*.

## DISCUSSION

As COVID 19 is proving to the world, tiny viruses are powerful biological agents, capable of rapidly effecting massive damage and fatality. Yet they are so simple: a virus is merely comprised of pieces of genetic material either RNA or DNA- wrapped in a protein envelope, which is known as a “Capsid”. Yet this tiny organism carries with it a mortality rate (death rate) or about 10% for people over 70 years of age and 22% for those over 80.

Many people have claimed various measures for preventing COVID 19 virus to the respiratory tract cells. Drinking warm water, doing pranayama, meditation will protect against infection. The symptom of COVID 19 includes fever, breathing difficulty, cough, sore throat, loss of appetite, diarrhea these symptoms can very well correlated under the diseases mentioned in *Pranavahasrota* that is *swasa*, *kasa* and *hikka*. The treatment principle mentioned like *nidanparivarjan* that is avoiding the cause so one should wash hands repeatedly, cover face with masks, covering face while coughing, sneezing should be done. *Sanshodhanchikitsa* that is administration of *panchakarma* which is very well mentioned in *hikkaswaschikitsa* of *CharakSamhita* and *janapadadhwamsachapter.Samshamanachikitsa* includes *rasayana* therapy which acts as immunity boosting. A number of drugs are also mentioned in various classics for treating *paranavahasrota* diseases.

## CONCLUSION

In this review article, an attempt has been made to find out the most possible treatment principle that can be given in this global pandemic. Ayurveda has long ago mentioned about *janapadadhwamsa* and its treatment. Though at present no vaccine or medicine has been discovered for COVID-19 but Ayurveda has always given importance to the preventive aspect. So if one follows the various preventive measures mentioned than defiantly we can overcome this global pandemic very soon.

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