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## Ayurveda In The Battle Against Covid 19 –A Global Pandemic

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### ABSTRACT:

Coronavirus is a pandemic disease becoming a great disaster in the world. Covid -19 has evolved itself into a pandemic, affecting a large population irrespective of their physical features, dietary patterns, and physiological attributes. Ayurveda considered it as *Janapada udwamsa vikara*. Initially, to china, patients are admitted to the hospital due to unknown causes of pneumonia and finally diagnosed as Corona virus disease. Immuno competent persons are having an only common cold as a symptom. People show the symptoms in a mild, moderate, and severe manner based on many associated factors. The main factor is the immunity that helps to prevent the clinical manifestation of the virus to great extent. In Ayurveda many drugs are having immunomodulatory, Antiviral, *jwarahara* action is mentioned, Also we get a comparison of symptoms of corona virus disease as *Agantuja sannipata jwara lakshna*. Hence, we have to explore more in the field of Ayurveda.

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## INTRODUCTION

*Dharmaartha kamamokshanam arogyam moolamuthamam rogasthasyapahartharah sreyaso jeevithasya cha<sup>1</sup> (charaka sutra 1/15)*

A Quotation is mentioned in *Charak Samhita* which means that “Health is the supreme foundation of Virtue, Wealth, Enjoyment & Salvation. Diseases are the destroyers of health, of the good of life, and even of life itself. In the present era, due to competition among the countries or people, several Man-made or Natural viruses come into existence. Nowadays the entire world is under the fear of such a virus called the corona virus. Corona named for the hale of spiked proteins on their arrow surface resembling corona. The first case of corona viruses is reported in the Wuhan city of China on 31 December of 2019. Later it spread fastly across the countries and

continents. This is the first pandemic disease that affects more than 185 countries in the world. Different types of corona viruses are there to produce common cold symptoms, but in Wuhan, a new kind of virus under the species SARS -COV 2,an RNA virus comes to know. Infection with SARS- COV 2, primarily causes respiratory illness ranging from, mild diseases to severe disease and death. Ayurveda has helpful management in Asymptomatic positive cases, mild to moderate cases, and, a good extent in cases with comorbidities.

## CAUSES

Corona virus is come under the family of SARS coming under the beta group. A study from china claimed that the novel Corona virus has two strains due to mutations namely ‘S’ Strain & ‘L’ strain. S Strains are 30% which is the oldest strain of the virus, less aggressive and slower spreading,

causes milder illness, continues to infect new patients at a steady rate. L strain is 70% which is mutated from s strain, more aggressive and faster spreading, causes worse illness, most common in an early outbreak in Wuhan.<sup>2</sup> The virus appeared to spread from person to person among those in close contact (within about 6 feet or 2m). The virus spreads by respiratory droplets released when someone with the virus cough, sneeze or, talks. The droplets can be inhaled or land in the mouth or nose of a person nearby. The reference about the mode of transmission of contagious disease is also available in the Susruta Samhita under *Aupasargika rogas* that is by frequent touching the body of the patient, inhaling his expired air, dining, sleeping and sitting together, wearing dress garlands and unguents used by him (the patient) by these acts-diseases such as *Kushta* (leprosy and some skin diseases), *Jwara* (fever), *Sosa* (consumption), *Netra abhisyanda* (ophthalmia/conjunctivitis) and *Aupasargika rogas* (contagious diseases) spread from one person to the other.<sup>3</sup>

#### PROBABLE PATHOPHYSIOLOGY

In Ayurveda, the initial phase we can consider as *Vata-kaphaja jwara*. Later when the symptoms get chronic, it can vitiate other *doshas* and *dhatu*s entering into

*sannipata jwara lakshna*. Hence it is a viral disease we can consider it as an *Agantu sannipata jwara*. The *sthana samraya* occurs in *amasaya* and *ura*. There is respiratory distress along with other symptoms, sometimes leading to death resembling *prano vaha srotho dushti*. As the *jwara* and respiratory distress are the chief complaints in the covid 19 patients which may even cause the death of the patient, therefore, such covid patients can be treated with the *jwara* principle mentioned in the Samhitas. Many formulations are available in the ayurvedic context according to the presenting complaints of the disease.

#### SYMPTOMS<sup>4</sup>

The incubation period of coronavirus disease 2019 (COVID 19) is 2 to 14 days after exposure. Common signs and symptoms include Fever, cough, tiredness. Early symptoms of corona virus disease may include a loss of taste or smell. Other symptoms can include shortness of breath or difficulty in breathing, muscle aches, chills, Sore throat, Running nose, Head ache, chest pain. It mainly affects the respiratory system of the body. Asymptomatic patients are identified only when their covid 19 tests become positive. Effects of some systems are—

➤ **Respiratory System**

Inflammation to the alveoli, producing shortness of breath

➤ **Digestive System**

Nausea, Vomiting

➤ **Circulatory System**

Hypotension, to form a clot in the blood vessels leads to serious health issues

➤ **Kidney**

Due to hypotension kidney failure

## DIAGNOSIS

**Blood Investigations:** it is done for basic understanding of the physiological and pathological state of the body.<sup>5</sup>

➤ **Complete haemogram test:** Elevated white blood cells count and lymphocyte count decreased neutrophil count.

➤ **ESR:** increased

➤ **C reactive protein:** increased

➤ **Liver function test:** Increased level of SGOT and SGPT in COVID -19 patients.

➤ **Ferritin:** Elevated levels of ferritin, indicates the presence of viruses and bacteria in the body.

➤ **D-dimer:** The presence of D- Dimer in the blood is a clinical marker for pulmonary embolism (Blood clot in lungs). D-Dimer greater than 2.0 µg/ml

could be an early and helpful marker to improve management of covid -19 patients.

➤ **Lactate dehydrogenase:** Severe infections may cause cytokine-mediated tissue damage and LDH release. Greater amounts of LDH in the circulation is the hallmark of acute respiratory distress.

➤ **Interleukin -6(IL- 6):** interleukins is one of the main mediators of inflammatory and immune response, respiratory failure, and found increased level in patients with covid -19.

## Other Laboratory Investigation:-

➤ **RT PCR test:** Reverse transcription-polymerase chain reaction test is widely used for the diagnosis of covid 19. SARS COV 2 RNA virus is generally detectable in respiratory specimens during the acute phase of infection. For that upper and lower respiratory specimens (nasal, nasopharyngeal, oropharyngeal swabs, sputum, Bronchoalveolar lavage).

➤ **Pulse oximeter:** The normal value of Spo2 ranges from 92-100 percentage. A Pulse oximeter is an invasive device used to check the oxygen level in blood. A value below 90 percent indicate the

low Spo2 level and leads to multiple organ failure and cardiac arrest if untreated. It is very much useful in asymptomatic covid 19 patients and give early medication.

- **CT scan:** Chest CT is important in the screening of patients in whom the disease is clinically suspected, especially those who have initially negative RT-PCR test. In a CT scan, we have to find lesion appearances as glass-like opacities or opacities with a small area of consolidation. Also found that the lesser pulmonary consolidation found at CT, the greater is the possibility of a negative initial RT-PCR test.

## MANAGEMENT

Management of covid patients can be done according to signs and symptoms and also be done as a preventive aspect. Severity of corona virus is based on Age and associated morbidities. Elderly people, infants, pregnant ladies, persons having underlying diseases like Diabetes Mellitus, Hypertension, Malignancy, Coronary artery diseases., and the immunocompetent people are more sensitive to corona virus infection. Any specific treatment protocol is not yet found and whatever treatment done is only Symptomatic one. Mainly treatment can be

done according to the treatment principles of *jwara*. Single drug and its combinations which have an action against the virus have a great role in the management. Ayurveda focus to treat this type of viral disease by increasing the immunity of a person by herbal immunomodulator. The immunity of a person helps to protect from various infectious diseases. Mainly all viral diseases are occurred due to defects in immunity. The immune system plays a protective role against infections. Cells involved in the immune system are monocytes which help to destroy the antigen by producing macrophages. Lymphocytes producing B & T cells which help to fight against the foreign matter. Immunomodulatory drugs mainly act by enhancing the phagocytic activity of macrophages, balancing the response of different T lymphocytes, increasing humoral antibody responses, and modifying the cell mediated immune response. A Herbal immunomodulator is a substance that stimulates or suppresses the components of the immune system including both innate and adaptive immunity. In emergency conditions, there is a need for ICU admission with proper vital supports. Lungs get infected and pneumonia-like symptoms starts to appear.

***In severe cases of disease***

ICU care is needed in patients with acute respiratory failure. When patients with covid 19 positive and acute respiratory distress, oxygen therapy may be insufficient to meet the oxygen and isolation is an essential thing to prevent the spreading and morbidity of the disease.

***In mid to moderate cases of diseases***

In our classics, many drugs having immunomodulatory and antiviral characteristics are mentioned. Research works show that these drugs have immunomodulatory and antiviral action

**1- GUDUCHI:**

**Latin name:-**(*Tinospora cordifolia Willd.*)

**Chemical constituents:** Tinosporide, Cordifolide, Unosporin, Cordifol

Action in *Deepana Amahara Jwarahara, Rasayana, Trushnahara, Kasahara, Krumigna*

Immunomodulatory protein in Guduchi stem showing lymphoproliferative & macrophage activating properties. A diterpenoid, tinosporin showed activity against HIV, HTLV, other viral diseases.<sup>6</sup>

**2-ASHVAGANDHA:-**

**Latin Name:-**(*Withania somnifera*)

Chemical constituents: Alkaloids (isopelletierine, anaferine, cuseohygrine, anahygrine, etc), steroidal lactones (withanolides, withaferins) and saponins. Sitoindosides and acylsteryl glucosides, Withaferin-A.

Withaferine-A an active constituent in *Withania somnifera*, has been shown to have a broad range of medicinal properties including its Anti viral activity. A study demonstrated that it has the potential to attenuate the neuroamidase of H1N1 influenza.<sup>7</sup> Administration of withania extract also showed an enhancement in the phagocytic activity of peritoneal macrophages.<sup>8</sup>

**3-YASHTIMADHU**

**Latin name;-**(*Glycyrrhiza glabra Linn.*)

Chemical constituents: Glycyrrhizin, glycyrrhizic acid, A & B licoricidin, glabranine

Licorice commonly called medicine is used by china for treating covid. It also has 20 triterpenoid and 30 flavinoids which inhibits the virus gene replication. Licorice has been proven beneficial against many DNA viruses such as Varicella-zoster virus, Herpes Simplex Virus-1, Human Cytomegalovirus, etc and RNA viruses such

as Influenza A virus (IAV), H5N1 virus, H1N1 virus, Hepatitis C virus, Newcastle disease virus, Rotavirus, SARS-associated coronavirus, Human Immunodeficiency Virus, etc.<sup>9</sup>

#### 4.KIRATATIKA

**Latin Name:-**(*Swertia chirata*)

Chemical constituents: Amarogentin, Gentiopirin, isobellicifolin, chiratol, swerchirin,

Action in *sannipata jwara,swasa,krimi, Vrana, daha, kaphapittahara*

It is content in *Sudarshana gulika*.It helps to the significant increase in total WBC count and also works in the lymphoproliferative activity.<sup>10</sup>

#### 5.SUNTHI

**Latin name :-**(*Zingiber officinale*)

Chemical Constituents:  $\alpha$  -curcumene,  $\beta$ -D curcumene, Zingiberol

Action in *Kasa, Swasa, Jwara, Agnimandya*. Researches also were done to prove its action in immunity and shows its antiviral properties.<sup>11</sup>

#### 6.HARIDRA

**Latin name:-**(*curcuma longa*)

Chemical constituents: Curcumin, Resin, $\alpha$ ,  $\beta$  - pinene, $\alpha$  phellandrene, camphor, Zingiberene and  $\alpha$ , $\beta$  curcumenes.

Action: *Sothahara, Vishagna, Kushtagna, Krimighna, Rucikara, Sitapittahara, Pramehahara.*

*Haridra* has been proved for its both antiviral and antibacterial activity and is also known to increase the immunity of a person.<sup>12</sup>

Ayurveda helps to cure the disease not only through the medicine but also including the appropriate ahara and vihara according to the disease.

- **AHARA** Consume light food like gruel,*Mudga*, Fresh leafy vegetables, Citrus Fruits, Include *Ardraka, Lasuna, Coriander, Haridra* in food.

- **VIHARA**

Proper Sleep, *kavala gandoosha* with medicating drugs, *Pranayama, Breathing Exercise, Yoga, Meditation,*

- **AUSHADHA**

- *Gopichandanadi gulika*<sup>13</sup>

**Ingredients**

*Gopi, Usheera, Valaka, Abhaya, Amalaki, Vibhitaki, Ela, Twak, nagakeshara, Musta, Jatikosha, Jatiphala etc*

- *Sudarsana gulika*<sup>14</sup>

**Ingredients**

*Kaleeyaka, haridra, devdar, vacha, musta, har eetaki, duralabha, karkatashrunji, kantakari*

,ardraka, trayamana, parpata etc kiratatikta is taken equal to all the above drugs.

➤ **Shadanga paneeya**<sup>15</sup>

Ingredients;-Ghana, Chandana, Sundi, Ambu, Parpadaka, Ushira

➤ **Vilwadi gulika**<sup>16</sup>

Ingredients

Vilwa, surasa, karanja, surahwaya, nata, hareetaki, vibhitaki, amlaki, shunti, maricha, pippali, nisha, daruharidra, basta mootra.

➤ **Indukantham kashayam**<sup>17</sup>

Ingredients

Chiruvilwa, Devadaru, Dasamoola, pippali, pippalimoolam, sundi etc

➤ **Dasamoolakatuthrayam**<sup>18</sup>

Ingredients

Dasamoolam, Kaduthreyam, vasa

➤ **RASAYANA THERAPY**<sup>19</sup>

**Rasayana therapy is a unique treatment mentioned in Ayurveda.** Rasayana brings about the normalcy of rasadhātu and thereby maintain other dhatus in equilibrium for a longer period. The commonly used Rasayana drugs are Amalaki, Ashwagandha, Chyavanaprasa, Brahma rasayana, Amruta prasa, etc have immunomodulatory, immune-boosting, Anti microbial, and antioxidant properties

## DISCUSSION

*Swasthasya swasthasam rakshanam aathurasya vikara prasamanam*<sup>20</sup> (charaka sutra 30/26 )

The utility of this science is to help maintain the health of a healthy individual and cure of diseases of a patient. We can use the above -mentioned drug in both ways i.e. by immune-boosting in a healthy individual and curative aspect in diseased condition. The corona disease is an infectious disease that mainly affects weak immunity people. Immunity in Ayurveda is mentioned that 'vyadhibala virodhitwa' that is work against the strength of diseases. Therefore the utilization of immunomodulatory and antiviral drugs has a good role in these kinds of infectious diseases.

## CONCLUSION

Ayurveda not only focuses on the curative aspect but also on the preventive aspect. Corona virus is such a type of Contagious disease and becoming a life-threatening in all over the world. The main reason for the incidence of this disease is the spreading nature of the virus. The Virus can enter the body of a person by contact, air droplets, etc. Apart from all the treatment modalities, here comes the slogan "**Prevention Is Better Than Cure**" Ayurveda also clarified that



*nidana parivarjana* is the important thing to prevent the disease, For that these precautions must follow.

### **PRECAUTIONS “STAY SAFE”—**

**Some precautions also needed to be taken to protect ourselves in this pandemic.**

- Avoid social gatherings.
- Wear a protective mask that covers the nose and mouth.
- Proper sanitization with alcohol content sanitizer or soap.
- Greet without physical contact.
- Avoid touching eyes, nose & mouth.
- Cover nose and mouth while coughing and sneezing.
- Avoid unnecessary travel.
- After returning home, take bath as a precaution.

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