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## A PROTOCOL TO PREVENT AND TREAT CORONA VIRUS DISEASE 2019 - A PANDEMIC IN THE PERSPECTIVE OF AYURVEDA WITH SPECIAL REFERENCE TO CHARAKA SAMHITA - A CONCEPT PAPER

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### Abstract

WHO has declared the Corona virus disease 2019 (COVID19) as Pandemic. The COVID19 has spread across the world with the global mortality rate of 3.4%. The mainstream medicine offers only social distancing, wearing mask to cover mouth and nasal passages and frequently sanitizing and repeatedly washing hands as prophylactic measures. The scientific research community is struggling to find a vaccine for this virus. Which is taking different forms every day. All the nations are under lockdown as a strategy to break the chain which will have strong impact on global economy. Boosting body's immunity is very important to prevent viral illnesses. Ayurveda an ancient but still practicing life science of India, has its aim as to maintain the health of healthy individuals and cure the disease of the Patients. Ayurveda has 03 major texts as *Brihad Samhitas*. *Charaka samhita* is one among them. *Charaka Samhita* clearly explains the nature, prevention and treatment of Pandemic. Here is an attempt to understand the covid 19 pandemic in the perspective of Ayurveda specific to Charaka Samhita and propose a module to prevent and treat covid19 patients at different stages. The prescribed module can be an adjuvant treatment along with the present protocol for management of COVID 19.

**Key words:** COVID19, *Ayurveda*, *Charaka Samhita*

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## 1. INTRODUCTION

*Ayurveda* is the science of life. *Ayurveda* is a Sanskrit term translates to “science or knowledge of life”. *Ayurveda* is the Indian system of medicine and its concepts deal with the nature, scope and purpose of life that includes health and disease, happiness and sorrow, pain and pleasure. *Ayurveda* is not only the ancient Indian science of preventative health and healing but also a philosophy of living. Concepts of this ancient wisdom remind us that entire life on this universe is intricately connected and this science of *Ayurveda* creates harmony our internal and external worlds.

The objective of *Ayurveda* is to protect the health of a healthy individual and cure the illness of the patient. *Ayurveda* has explained many doctrines to understand the disease, patient, symptoms and medicine<sup>1</sup>

CharakaSamhita is one of the major treatises of *Ayurveda*. It states that the content of the book was first propounded by sage Atreya, and then subsequently codified by Agnivesha, revised by Charaka and the manuscripts that are available now are based on one completed by Dridabala. It is *Ayurveda*'s definitive treatise and the most referenced text by students, scholars, teachers, physicians and researchers.. It emphasizes on the promotion of health and prevention of disease as the

actual solution for controlling diseases, which is especially relevant in modern times. Further, it also dwells upon the concept of healthy aging and longevity, (1)

The 2019 Novel Coronavirus (2019-nCoV) or the severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) as it is now called, has spread rapidly all over the globe from its origin in Wuhan City of Hubei Province of China to the rest of the world [1]. Till 09/09/2020 around 27,743,512 cases of coronavirus disease 2019 (COVID-19) and 901,934 deaths have been reported [2]. India has reported 4275809 cases till date (3)

To stop the menace of this pandemic, the mainstream medicine and alternative medical systems has been putting up their best efforts so far without any breakthrough. The CharakaSamhita has explained about aetiology, symptoms and medicine and also prophylactic measures. Here is a protocol to understand the covid 19 pandemic in the perspective of *Ayurveda* specific to CharakaSamhita and propose a module to prevent and treat covid19 patients at different stages.

## 2. AIM

To understand the present COVID19 in terms Etiology(Hetu), Symptomatology(Linga) and Medicine (Aoushadhajana) on the

background of Charaka Samhita an ancient Ayurveda text.

## 2.1 OBJECTIVES

1. Describe the prophylactic measures for the COVID19 high risk patients as per CharakaSamhita
2. Propose the Medicines and treatment protocol explained by Charaka Samhita as supportive treatment along with mainstream medicine.

### 3.1 PANDEMIC DESCRIPTION IN CHARAKA SAMHITA[1]

Janapadodhvansa literally means destruction or annihilation of communities or settlements. Epidemics and outbreaks of highly communicable diseases have blighted mankind since time immemorial. Ayurvedic scholars and exponents of antiquity like Charaka and Sushruta recorded these pandemics in their works on *aparasargikaroga* and *janapadodhvansa* respectively.

An astute observation of practitioners such as Charaka was that, vitiated *vayu* (air), *jala* or *udaka* (water), *desha* (land) and *kala* (season) were key factors responsible for causing epidemics. These four factors, when not polluted or contaminated are vital not only for our survival, but for the survival of all life-forms. By nature, air, water,

land and seasons are indispensable factors in their progressive order.

Seasons are the most indispensable ones of all factors, since its vitiation leads to diseases becoming highly virulent, taking epidemic proportions. With regard to communicable diseases in general, an interplay of agents, hosts and the environmental factors lead to a dynamic state of health and disease.

The causative factors of *janapadodhvansa* (epidemics), characteristics of vitiated factors and remedial measures to treat the conditions are described. It is strongly recommended that collecting and stocking drugs potent in all attributes (like *rasa*, *guna*, *veerya*, and *vipaka*) necessary to tackle the catastrophic conditions associated with any epidemic. *Agnivesha* was inquisitive to know about common morbidity among the individuals with dissimilar constitution, dietetic habits, physical strength, suitability, mental faculties, etc.

### 4. EPIDEMIOLOGY AND PATHOGENESIS [4, 5]

All ages are susceptible. Infection is transmitted through large droplets generated during coughing and sneezing by symptomatic patients but can also transmit from asymptomatic people before onset of symptoms [6]. Studies have shown higher viral loads in the nasal cavity as compared to the throat with no difference in viral burden

between symptomatic and asymptomatic people [7]. Patients can be infectious for as long as the symptoms last and even on clinical recovery. Some people may act as super spreaders infecting many people at a time. These infected droplets can spread up to 1–2 m and deposit on surfaces. The virus can remain viable on surfaces for days in favourable atmospheric conditions but are destroyed in less than a minute by common disinfectants like sodium hypochlorite, hydrogen peroxide etc. [8]. Infection is acquired either by inhalation of these droplets or touching surfaces contaminated by them and then touching the nose, mouth and eyes. The virus is also present in the stool and contamination of the water supply and subsequent transmission via aerosolization is also hypothesized [9]. As per current information, transplacental transmission from pregnant women to their foetus has not been described [10]. However, neonatal disease due to postnatal transmission is described [10]. The incubation period varies from 2 to 14 d [median 5 d]. Studies have identified angiotensin receptor 2 (ACE<sub>2</sub>) as the receptor through which the virus enters the respiratory mucosa [5].

#### 4.1 DESCRIPTION IN CHARAKA (1)

4.1.1 [Nidana \(Cause\)](#) is of three types as per Charaka Samhita

1. Asatmyendriyarthasamyoga (unsuitable contact of sense organs with their objects)
2. Pragyaparadha (intellectual errors or knowingly engaging in harmful activities)
3. Kala (time, seasonal, temporal factors).
4. 4.1.2 Causes for the vitiation of janapadodhwansa factors:

The root cause of vitiation of these factors is adharma (unrighteousness). Sins of the present life or the misdeeds of the past life also are at the root of vitiation of all these factors and the source of this is intellectual error (prajnaparadha). Thus when the reigning heads of countries, cities, trade guilds etc. govern the people irresponsibly by transgressing the virtuous path, then their officers, sub-ordinates and under-subordinates, people of the city and community and traders deviate from their duties as well and propagate such unrighteous acts further. Their sinful acts in turn causes the righteous acts to disappear. Because of the disappearance of righteous acts, even the Gods desert the people living in such places. This causes seasons to get impaired in these places. There is no rain in time, or never at all, or abnormal rain occurs; the air does not blow properly; the land is afflicted, the water reservoirs dry up, and herbs lose their true

properties and suffer deterioration. As a consequence, the people perish as the result of infectious contact or ingestion of polluted food and water

## 5. CLINICAL FEATURES (11, 12–15)

The clinical features of COVID-19 are varied, ranging from asymptomatic state to acute respiratory distress syndrome and multi organ dysfunction. The common clinical features include fever (not in all), cough, sore throat, headache, fatigue, headache, myalgia and breathlessness. Conjunctivitis has also been described. Thus, they are indistinguishable from other respiratory infections. In a subset of patients, by the end of the first week the disease can progress to pneumonia, respiratory failure and death. This progression is associated with extreme rise in inflammatory cytokines including IL2, IL7, IL10, GCSF, IP10, MCP1, MIP1A, and TNF $\alpha$  [12]. The median time from onset of symptoms to dyspnoea was 5 d, hospitalization 7 d and acute respiratory distress syndrome (ARDS) 8 d. The need for intensive care admission was in 25–30% of affected patients in published series. Complications witnessed included acute lung injury, ARDS, shock and acute kidney injury. Recovery started in the 2nd or 3rd wk. The median duration of hospital stay in those who recovered was 10 d. Adverse outcomes and death are more common in the

elderly and those with underlying co-morbidities (50–75% of fatal cases). Fatality rate in hospitalized adult patients ranged from 4 to 11%. The overall case fatality rate is estimated to range between 2 and 3% [2].

### 5.1 DESCRIPTION IN CHARAKA SAMHITA (1)

#### 5.1.1 Premonitory symptoms of jwara

Laziness, lacrimation, yawning, heaviness, mental fatigue, uncertainty and intolerance about the liking and disliking for the heat, sun, wind and water; indigestion, anorexia, depletion in strength, complexion, and slight change in conduct, are the premonitory signs and symptoms of *jwara*.

#### 5.1.1.1 Cardinal feature

The clinical features invariably associated with *jwara* are the feeling of heat or increased body temperature and discomfort in body and mind. *Jwara* afflicts the whole body including mind and sensory organs in all living beings.

#### 5.1.2 Sannipatajwara

*Sannipatajwara* in which vitiated *vata* is excessively vitiated, *kapha* moderately vitiated and *pitta* is less vitiated presents with the following clinical features – headache, trembling, breathlessness, delirium, vomiting and anorexia.

## 6. TREATMENT (16,17)

Treatment is essentially supportive and symptomatic.

The first step is to ensure adequate isolation (discussed later) to prevent transmission to other contacts, patients and healthcare workers. Mild illness should be managed at home with counselling about danger signs. The usual principles are maintaining hydration and nutrition and controlling fever and cough. Routine use of antibiotics and antivirals such as oseltamivir should be avoided in confirmed cases. In hypoxic patients, provision of oxygen through nasal prongs, face mask, high flow nasal cannula (HFNC) or non-invasive ventilation is indicated. Mechanical ventilation and even extra corporeal membrane oxygen support may be needed. Renal replacement therapy may be needed in some. Antibiotics and antifungals are required if co-infections are suspected or proven. The role of corticosteroids is unproven; while current international consensus and WHO advocate against their use, Chinese guidelines do recommend short term therapy with low-to-moderate dose of corticosteroids in COVID-19 ARDS [18, 19]. Detailed guidelines for critical care management for COVID-19 have been published by the WHO [20]. There is, as of now, no approved treatment for COVID-19.

## 6.1 AUSHADHA AS PER CHARAKA SAMHITA(1)

### 6.1.1 Precaution at initial stage of jwara

The patient, in the state of *navajwara* (first stage fever) should avoid certain things as – sleeping during day, bath, massage, heavy to digest food, sexual intercourse, anger, direct exposure to wind, exercise, and *kashaya* (astringent foods).

### 6.1.2 Management of jwara

*Langhana* (fasting), *swedana* (fomentation), *kala* (waiting period of eight days), *yavagu* (medicated gruels) and *tikta rasa* drugs (drugs having bitter taste) and all digestive enhancers of *avipakvadosha* (untransformed) are prescribed in the *tarunajwara* (the initial stage of *jwara*)

#### 6.1.2.1 Shadangapaniya

Patient should be given water cooled after boiling it with *musta*, *parpataka*, *ushira*, *chandana*, *udichya* and *nagara* for the alleviation of thirst and *jwara*.

### 6.1.3 Various dietary foods used in treatment

*Raktashali*, *shashtika* type of *purana* (preserved for over an year) rice are the best and should be given in the form of *yavagu* (gruel), *odana* (boiled rice), *laja* (fried paddy) as these mitigate *jwara* of the patient.

#### 6.1.4 Indications of Yavagu of yavagu (gruel) in jwara

The *peya* prepared with *laja* (fried paddy) and boiled with *pippali* and *nagara* is light to digest and should be given to the patient in the beginning of the *jwara* when the digestive power is reduced. However, it should be ascertained before administration that the patient is desirous for food.

#### 6.1.5 Indications of soup

*Yusha* is wholesome for some patients of *jwara*. This *yusha* may be prepared from *mudga*, *masura*, *chanaka*, *kulattha* and *makushtha*.

#### 6.1.6 Indications of vegetables

The leaves and fruits of *patola*, *kulaka* (*karvellaka*), *papachelika* (*patha*), *karko taka*, *kathilla* (red variety of *punarnava*) are useful in the patients of *jwara*.

#### 6.1.7 Anupana (beverages)

Hot water should be given to drink to a thirsty person. Depending upon the *doshas* involved and the strength of the patient *madya* (wines) may be given to those patients for whom it is wholesome.

#### 6.1.8 Contra-indications in *jwara*

Food ingredients which are heavy to digest, hot in potency, with unctuous property, sweet and astringent taste should preferably be avoided. So, the diet and drinks, which are wholesome to the patient of *jwara* have been described here.

#### 6.1.10 Decoctions indicated in *jwara*

- *Musta* and *parpataka* can be taken either in the form of decoction (*pakya*) or *shitakashaya* (soaking the drugs for overnight period in water and then filtering the content and using the filtrate).
- *Parpataka* decoction may be given to the patient along with *nagara* and *duralabha*.
- The decoction made from *kiratatikta*, *musta*, *guduchi* and *vishvabhesaja*.
- The decoction of *patha* and *ushira* along with *udichya*.

The above mentioned, decoctions which are used for the alleviation of *jwara* are *jwaraghna*. They stimulate the power of digestion, help in the *pachana* (metabolic transformation) of the *doshas*; alleviate thirst, anorexia and cure *mukhavairasya* (bad taste of the mouth).

#### 6.1.11 Formulations with medicated milk

A patient suffering from *chirajwara* (chronic type of fevers), *kasa*, *shvāsa*, *shirahshula* and *parshvashula* gets cured by taking milk boiled with *panchamula* (*bilva* and *shyonaka*, *gambhari*, *patala* and *ganikarika*).

#### 6.1.12 Management of *abhishangajwara*

The *jwara* caused by *bhutabhishanga* (affliction by microorganisms or evil spirits), *daiva-vyapashraya chikitsa* (performance of spiritual therapies) is the most desired therapy.

### 6.1.13 Spiritual therapy

Recitation of the *sahasranāma* (one thousand names) of Lord Viśnū, cures all type of *jwara*.

Devotion to father and mother, prayer to *gurūs*, observance of celibacy, practice of *tapa* (penance), *satya* (truthfulness) and *niyama* (religious

rites), *japa* (incantations), *homa* (like *yajña* – offering oblation to fire), hearing the recitation of the *vedās* and the *darshana* (visiting) of saints immediately cures *jwara*.

## 7. PRACTICE POINTS FROM AN AYURVEDA PERCEPTIVE -ACCORDING TO CHARAKA SAMHITA

NO	STAGES	MORDERN PERSPECTIVE	AYURVEDA PERSPECTIVE
1	DIAGNOSIS	COVID-19	(Probable) AGUNTAJA SANNIPATAJA JVARA
2	NATURE	PANDAMIC	Janapadodwamsa
3	CAUSE	NOVEL CORONA VIRUS-19	Adharma-Deviating from rules & regulation of mankind & Nature Bhootabhishyanga- by germs Vataja dominant kapha& pitta vitiation
4	CLINICAL FEATURES	Fever , cough, sore throat, headache, fatigue, headache, myalgia and breathlessness.	Vata predominant sannipatajajvara Headache, trembling, breathlessness, delirium, vomiting and anorexia, along with Jvara&Kasa.
5	<b>MANAGEMENT</b>		
5.1	PRIMARY & SECONDARY CONTACTS	Quarantine	Along with Quarantine One should avoid certain things as – daytime sleep, bath, massage, heavy to digest food, sexual intercourse, anger, direct exposure to wind, exercise, and <i>kashaya</i> (astringent foods). Drink Shadangapaneeya Spiritual Therapy
5.2	COVID PATIENTS WITH MILD & MODERATE SYMPTOMS	Treatment is essentially supportive and symptomatic along with Isolation The usual principles are maintaining hydration and nutrition and controlling fever and cough	<b>Diet-</b> , <i>Raktashali</i> , <i>shashtika</i> type of <i>purana</i> (preserved for over an year) rice are the best and should be given in the form of <i>yavagu</i> (gruel), <i>odana</i> (boiled rice), <i>laja</i> (fried paddy) as these pacify <i>jwara</i> of the patient. <b>Indications of soup</b> <i>Yusha</i> is wholesome for some patients of <i>jwara</i> . This <i>yusha</i> may be prepared from <i>mudga</i> , <i>masura</i> ,

			<p><i>chanaka, kulattha and makushtha.</i></p> <p><b>Indications of vegetables</b></p> <p>The leaves and fruits of <i>patola, kulaka (karvellaka), papachelika (patha), karkotaka, kathilla</i> (red variety of <i>punarnava</i>) are useful in the patients of <i>jwara</i></p> <p><b>Anupana(beverages)</b></p> <p>Hot water should be given to drink to a thirsty person. Depending upon the <i>doshas</i> involved and the strength of the patient <i>madya</i> (wines) may be given to those patients for whom it is wholesome.</p> <p><b>Contra-indications in <i>jwara</i></b></p> <p>Food ingredients, which are heavy to digest, hot in potency, with unctuous property, sweet and astringent taste should preferably be avoided in a patient suffering from <i>navajwara</i> (the patient of first stage of <i>jwara</i>) in order to facilitate the <i>paka</i> of the <i>doshas</i>.</p> <p><b>Decoctions indicated in <i>jwara</i></b></p> <ul style="list-style-type: none"> <li>• <i>Musta</i> and <i>parpataka</i> can be taken either in the form of decoction (<i>pakya</i>) or <i>shitakashaya</i> (soaking the drugs for overnight period in water and then filtering the content and using the filtrate).</li> <li>• The decoction made from <i>kiratatikta, musta, guduchi</i> and <i>vishvabhesaja</i>.</li> <li>• The decoction of <i>patha</i> and <i>ushira</i> along with <i>udichya</i>.</li> </ul> <p><b>Formulations used in sannipatajwara</b></p> <p>Brihatyadikashayam</p> <p><b>Formulations with medicated milk</b></p> <p>A patient suffering from <i>chirajwara</i> (chronic type of fever), <i>kasa, shvāsa, shirahshula</i> and <i>parshvashula</i> gets cured by taking milk boiled with <i>panchamula (bilva and shyonaka, gambhari, patala and ganikarika)</i>.</p> <p><b>Spiritual therapy</b></p> <p>Recitation of the <i>sahasranāma</i> (one thousand names) of Lord Viśnū, cures all type of <i>jwara</i>.</p>
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			Devotion to father and mother, prayer to <i>gurūs</i> , observance of celibacy, practice of <i>tapa</i> (penance), <i>satya</i> (truthfulness) and <i>niyama</i> (religious rites), <i>japa</i> (incantations), <i>homa</i> (like <i>yajña</i> – offering oblation to fire), hearing the recitation of the <i>vedās</i> and the <i>darshana</i> (visiting) of saints immediately cures <i>jwara</i> .
5.3	SEVERE STAGE	In hypoxic patients, provision of oxygen through nasal prongs, face mask, high flow nasal cannula (HFNC) or non-invasive ventilation is indicated. Mechanical ventilation and even extra corporeal membrane oxygen support may be needed. Detailed guidelines for critical care management for COVID-19 have been published by the WHO.	

## 8. CONCLUSION

NOVEL CORONA VIRUS-19 outbreak has challenged the entire global economy, medical and public health infrastructure. We are clearly witnessing the virus destroying millions of lives worldwide and time alone will tell us the future of our lives. Charaka Samhita, an ancient text of Ayurveda has reminded us that pandemics are certain when the civilization has become more & more anti-environmental and self-centred. So future outbreaks of

viruses and pathogens of zoonotic origin are likely to occur. Therefore, apart from being critical, comprehensive measures has to be implemented to prevent future outbreaks by integrating ancient ayurvedic concepts with modern medical knowledge.

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