

COVID 19 – AN AYURVEDIC UNDERSTANDING**Dr. PVNR. Prasad^{*1}, Dr. K. J. Lavanya Lakshmi² and Dr. P. L. Alekhya³**^{1,2}Associate Professors, Dr. NRSGAC, Vja.³Internee, S.V. Ayurvedic Hospital, Tirupati.Article Received on
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NRSGAC, Vja.**ABSTRACT**

Corona Virus Disease – 19 (*COVID – 19*) is an infectious illness caused by novel Corona Virus – 2 now called Severe Acute Respiratory Syndrome Corona Virus – 2 (*SARS CoV 2*). The symptoms range from the common cold to more severe diseases. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. It is known as

Janapadodhwamsa in Ayurveda. The concept of Epidemic diseases and their management is dealt by Charaka in a much elaborated manner. Management is also very akin to modern Microbiology and include avoiding the responsible factors, Removal of the organism, limiting the spread by isolation, bringing change in the environment, strengthening the immune system, observing the cyclic occurrence. Ayurvedic treatment protocol is centered on Hetu Viparita Chikitsa, Vyadhi Viparita Chikitsa, Rasayana Chikitsa and Achara Rasayana.

KEYWORDS: Corona Virus; Janapadodhwamsa vyadhi; Vyadhikshamatwa; Rasayana.**INTRODUCTION**

Infectious diseases spreading through human population across a large region is known as an Epidemic. An epidemic spreading over a wide geographic area affecting a larger portion of population is called Pandemic. The infectious disease in Ayurveda is mentioned under *Aupasargika Vyadhi* and its Epidemiology is elaborated under the heading of *Janapadodhwamsa*, where community of different *Ayu, Bala, Prakruti, Ahara, Desha* and *Satmya* are affected, diseased or died suddenly or at the same time.

A disease or condition is not a pandemic merely because it is widespread or kills many people; it must also be infectious. For instance, cancer is responsible for many deaths but is not considered a pandemic because the disease is not infectious or contagious.^[1] Although each individual has his own body constitution but few factors like *Vayu*, *Jala*, *Desha* and *Kaala* are common to everyone. They individually or collectively are responsible for the *Janapadodhwansa*.^[2]

Acharya have mentioned that the above factors are causative of disease only if the human beings are involved in *Pragnyaparadha* (volitional transgression). *Dhee-vibrashta* (deranged intellect), *Dhruti-vibrashta* (deranged restrain) and *Smriti-brashta* (deranged memory) leads to all sorts of *Ashubha karma* (unwholesome actions). Due to this various defects appear; ill health and sorrow ensues.^[3]

Throughout history, there have been a number of pandemics such as Plague, Small – pox, Tuberculosis, Swine-flu, and Ebola etc. with latest outbreak being Covid – 19.

COVID – 19

Corona Virus Disease – 19 (*COVID – 19*) is an infectious illness caused by novel Corona Virus – 2 now called Severe Acute Respiratory Syndrome Corona Virus – 2 (*SARS CoV 2*). Corona viruses (CoV) are a large family of viruses. A novel corona virus (nCoV) is a new strain that has not been previously identified in humans. They are a large family of single-stranded RNA viruses (+ssRNA). The World Health Organization has declared it a Public Health Emergency of International Concern (PHEIC) initially and as Pandemic as it has confirmed its presence in all continents except Antarctica.^[4]

The virus is not considered airborne but thought to be natural and have an animal origin through spill over infection. Corona viruses are zoonotic, meaning they are transmitted between animals and people.^[5] Common human corona viruses, including types 229E, NL63, OC43, and HKU1, usually cause mild to moderate upper-respiratory tract illnesses, like the common cold. Most people get infected with one or more of these viruses at some point in their lives. This applies to common human corona viruses and should not be confused with corona virus disease 2019 (formerly referred to as Novel Corona virus).

Human corona viruses can sometimes cause lower-respiratory tract illnesses, such as pneumonia or bronchitis. This is more common in people with cardio-pulmonary disease, people with weakened immune systems, infants, and older adults.^[6]

Aetio-Pathogenesis

The virus is not considered airborne but thought to be natural and have an animal origin through spill over infection. Corona viruses are zoonotic, meaning they are transmitted between animals and people.^[7] This is due to unregulation of such infected meat by the local government, which according to Ayurveda comes under *Pragnyaparadha, Adharma*; leading to the present pandemic.

Ayurveda has mentioned various rules and regulation regarding wholesome and unwholesome diet especially regarding which *mamsa ahara* to be chosen and also the importance of well cooked food. Acharya Charaka has mentioned that meat of the animal which is self-dead, emaciated, very fat, old, too young, killed by poisoning, reared in unnatural habitat or killed by a tiger, snake etc should be avoided.

Acharya Sushruta is more specific when he says *vyadhita mamsa* should be avoided i.e. animals infected or diseased should be avoided.^[8] Such meat of infected and or diseased animal is said to be *tridoshakara* and responsible for the death.^[9] This also emphasizes the fact that the zoonotic transfer of disease was known to our Acharyas.

While mentioning *Sannipataja Jwara*, Acharya Charaka has mentioned that any aetiological factors which lead to *tridosha prakopa* can cause *Sannipataja Jwara*.^[10] Once the infected food gets entry into the body in absence of *vyadhi utpadaka pratibandhabhava* (immunity) the *tridosha* gets vitiated in the *amashaya, pittasthana* thereby leading to *agnimandya* and *jwara* whereas, if *vyadhikshamatwa* is very low it may lead to *Shwasa, Atyayika* condition.

Further Acharya Susrutha says that such patient, when gets jwarita he is prone to transfer his disease by body contact (*gatra sansparshat*), inhalation (*nishwashat*), sharing of beds etc (*saha sayyasanat*), sharing the foods (*saha bhojanat*) and sharing the flowers/ ornaments/ clothes etc (*maalya*).^[11]

Acharya Dalhana mentions disease like *Shitali* etc are to be included in *aupasargika* i.e. disease spread by microorganism.^[12] Acharya Charaka also stated 2 types of *krimi* one is *vaikarika* means pathogenic and the other, *sahaja* which means non-pathogenic.^[13] In

Charaka samhita it is mentioned that *Agantuja Vyadhis* are caused also due to *krimi*, *Bhuta* (microorganism), *visha* (toxins).^[14]

The Virus is something not *swabhavayukta* for the *Sharira*; it is a foreign body or *visha*. The *vishaktaanna* reaches the *Pittasthana*. *Vyadhi Utpada Pratirodhaka Bhava* (immunity) comes into action if they are strong enough there is no formation of disease. The occurrence and development of COVID-19 depend on the interaction between the virus and the individual's immune system. Viral factors include virus type, mutation, viral load, viral titre, and viability of the virus in vitro. The individual's immune system factors include *Prakruti*-genetics (such as HLA genes), *Vaya* (age), *Linga* (gender), *Aaharasausthava* (nutritional status), *Tridosha* (neuro-endocrine-immune regulation), *Bala* and *Vyayama Shakti* (Physical status).

Further, if such patient comes in contact with another person the *Aupasargikata* is initiated. *Gatra Sansparshat*, *Nishwasat*, *Sahabhajanat*, *Shayya*, *Asanat*, *Vastramalyanulepanat* contributes to human to human transfer of the disease.

Symptoms

Symptoms of common human coronaviruses: runny nose (*pratishyaya*), sore throat (*kantha ruja*), headache (*shira-shoola*), fever (*jwara*), cough (*kasa*), sputum production (*sa-kapha*), general feeling of being unwell (*santapamanasa/ klama*).^[15] The illness causes lung lesions and pneumonia and may present as difficulty breathing or shortness of breath (*shwasa*).

Clinical features revealed by a chest CT scan presented as pneumonia, however, there were acute respiratory distress syndrome, acute cardiac injury, and incidence of ground-glass opacities that led to death. In some cases, the multiple peripheral ground-glass opacities were observed in sub-pleural regions of both lungs that likely induced both systemic and localized immune response that led to increased inflammation.^[16]

Patients may exhibit other symptoms, too, such as gastrointestinal problems or diarrhea (*atisara*), haemoptysis (*raktasthivana*), and lymphopenia. Therefore, it is important to test faecal and urine samples to exclude a potential alternative route of transmission, specifically through health care workers, patients etc. Therefore, development of methods to identify the various modes of transmission such as faecal and urine samples are urgently warranted in order to develop strategies to inhibit and/or minimize transmission and to develop therapeutics to control the disease.^[17]

Once the patient comes in contact with infected person depending on the *Vyadhikshamatva*, *Khavaigunya* and *Tridosha* patient presents with various symptoms. If *Pranavahasrotas* gets involved depending on the location symptoms are presented. If *Naasa* is involved *Pratishyaya* is presenting symptom, if *kanta* is involved *Kantaruja* begins followed by *Kasa*.

As the *tridosha prakopa* (cytokine storm) increases and *dosha* takes *ashraya* in lower respiratory tract leading to *Shwasa*. If concentration of *kapha* increased productive cough is initiated. The increased *kapha* obstructs the *gati* of *vata* and leads to *shotha*. The functionality of *Hridaya* when affected leads to cardiac distress and eventual death.

Further if the *tridosha* (cytokine storm) takes *ashraya* of *Amashaya* and are able to *bahirnisasyakosthagni* into *Rasa* and *Swedavahasrotas* it leads to *Swedaavarodha* contributing to *Jwara*, *Daha*, *Angamarda*. The increased number of *Aupasargikaroga* leads to *Janapadodhwamsa*.

Considering the available factors, Covid – 19 can be compared and considered as *Kapha – Vata Samsargaja Jwara*^[18] with association of *Pitta*.^[19] It attains the status of full *Sannipata Jwara* in certain population as it progresses.^[20] Taking the *vikara prakriti* of Covid – 19, it can be rated as *Janapadodhwamsa Vyadhi* under *Agantuja vikara* variety and *Bhutabhishanga* class.^[21]

Clinical Staging^[22]

The disease starts as symptomatic mild illness at presentation, leading to moderate illness and culminating in fatality. With thorough and careful observation of the clinical course of this disease, it can be summarised that:

- The whole process of the disease can be compared to *Dhatupaka*, a dys-regulated host response from the context of *Sannipata Jwara*^[23]
- The co-existing *Pitta* though very mild causes *Syandana* and *Shoshana* in chest which cannot be countered due to compromised *rogi-bala*^[24]
- Because of *Syandana* & *Shoshana* due to intervening *Pitta* the *jwaramay* end up in fatal forms of *Sannipata Jwara* especially *Vata* predominant *Vispharaka*^[25] and *Vata-Kapha* predominant *Sheeghrakari*^[26]
- This rapidly destabilizes the *Ojus* leading to sepsis and shock.
- Shwasa*, which was a symptom till now becomes prominent as *updrava* following the change in the nature of *Jwara*.

- f) The patients who are worsened progressively are those whose *rogi – bala* is depleted due to the advanced age and co-morbidities

Treatment

At this time, there are no specific vaccines or treatments for COVID-19. No drug has yet been approved to treat corona virus infections in humans. WHO is working 24/7 to analyse data, provide advice. Management involves treatment of symptoms, supportive care, isolation, and experimental measures. However, there are many ongoing clinical trials evaluating potential treatments. Several of the medications being tested are already approved for other uses, or are already in advanced testing.

While approaching a newly detected or Un-known disease, Ayurveda adopts a unique three pointed method in understanding the disease than focusing simply on its microbiological etiology.

- a) *Vikara Prakriti* - Natural history of the Disease
- b) *Adhishtana* - Site of Pathological Process and
- c) *Samutthana Vishesha* - Etiological Features

Basing on the above principles, Ayurvedic approach for the management of COVID – 19 can be contemplated under the following lines.

- a) Hetu Viparita Chikitsa - Addressing Aetiology
- b) Vyadhi Viparita Chikitsa - Addressing the Pathology
- c) Rasayana - Protection of Immunity
- d) Achara Rasayana - Life-Style Modification

Protocol

Stage	Pathology	Therapeutic target
I	<i>Kapha – Vata Sannipata Jwara</i>	<i>Jwara Shamana, Kapha Shamana, Vatanulomana, Rogi-bala Rakshana</i>
II	Aggravation of above condition	<i>Jwara Shamana, kapha Shamana, Vatanulomana, Rogi-bala Rakshana, Regulation of Pitta</i>
III	Initiation of <i>Dhatu – Paka</i>	<i>Jwara Shamanam, Rogi – bala Rakshana, Medication to stop Dhatu-Paka, Medication for Broncho-dilatation& Expectorant</i>
IV	<i>Dhatupaka</i> continues, <i>Shwasa</i> as <i>Upadrava</i>	As above but aggressive manner and more Potent drugs, Special procedures enlisted in <i>Sannipata – Jwara Chikitsa</i>
V	<i>Vispharaka & Sheeghrakari Sannipata Jwara</i>	<i>Aatyayika Chikitsa, Pottali Kalpa prayoga</i> , Technical support like ECMO & Ventillation etc...

Hetu Viparita Chikitsa

S.No.	Level	Target	Measures & Drugs
1.	Environment	Clearing Water Pollution	Boiling, Quenching Hot Iron Balls, Trighata Yantra, Kataka bija, Padma mula, Shaivala mula, Gomeda, Mukta
		Fumigation for clearing Air Pollution	Agaru, Amra, Apamarga, Arjuna, Arka patra, Ashoka, Ashwattha, Atasi, Audumbara, Bakuchi, Bhallataka, Brahmi, Chakramarda bija, Danti, Devadaru, Eranda, Ghrita, Guduchi, Guggulu, Haridra, Hingu, Jatamansi, Jiraka, Kanchanara twak, Karpur, Katuki, Khadira, Kushta, Manjishta, Musta, Nimba patra, Palasa bija, Pita Sarshapa, Rasona, Sarjarasa, Shweta Nirgundi, Sirisha bija, Snuhi, Sthula Ela, Sweta Durva, Tagara, Triphala, Vacha, Vata, Vidanga, Yava,

S.no.	Category	Drugs
1.	Single Drugs	<p>If Sannipata Jwara: Shati, Pushkaramula, Vyaghri, Shringi, Duralabha, Guduchi, Nagara, Patha, Kirata- tikta, Katuka rohini, Both the varieties of Brihati, Bharangi, Vatsaka bija and Patola.</p> <p>If Shwasa: Pushkarmula, Vasa, Yastimadhu, Kantakari, Tulasi, Vidanga, Amruta, Darvi, Haridra, Amalaki, Shirisa, Pippali, Kushta, Bharangi, Punarnava, Arjuna, Dashamula.</p> <p>If Jwara: Kiratatikta, Katuki, Amruta, Patola, Mahasudarshana, Saptaparna, Ativisha. Ksharaagada</p> <p>If Gastrointestinal Symptoms: Patha, Musta, Yastimadhu, Indrayava, Kutaja, Darvi, Amalaki.</p>
2.	Kashaya	Pathya Kustumbaradi, Vyaghryadi, Sudarsana, Amrutottaram, Dashamula, Kokilaksha, Dashamula Katutrayi, Abhaya Pippalimuladi, Nayopayam, Dusparshavasadi, Bharngyadi, Darunagaradi, Elakanadi, Balajirakadi, Pathyakshadhatryadi.
3.	Churna	Sitopaladi, Talisadi, Sringyadi, Lavangatvagadi, Mahadrakshadi, Yashtimadhu, Balchaturbhadra.
4.	Asava/Arishta	Amritarishta, Vasarishta, Kanakasava, Somasava, Panchakolasava
5.	Kharaleeya Yoga	Swarna Sutasekhararas, Tribhuvanakeertiras, Seetamsuras, Mrityumjayaras, Anadabhairaviras, TrilokyaChintamaniras, Lakshmi Vilasaras, Vasantamalatiras, Shwasakuthararas, Jayamangalaras, Ratnagiriras, Arogyavardhinivati, Sanjivanivati, Vyoshadivataka, Mukkamukkadukadi, Samshamanivati, Sudarshanaghanavati, Shwasandavati, Vettumaran, Vilwadi, Gorochanadivati, Shiva gutika.
6.	Bhasma	Abhraka, Hingula, Sringi.
7.	Kupi-pakwa Yoga	Rasa Sindura, Malla Sindura, Tala Sindura, Sameera-pannagaras, Siddha Makaradhwaja, Vasantakusumakararas,

		Poornachandrodayaras.
8.	Pottali Yoga	Lokanatharas, Mallagarbha Pottali, Talagarbha Pottali, Hiranyagarbha Pottali.
9.	Panchakarma	Nasya, Vasti
10.	Others	Rasamanikyaras, Indukantaghrita, Brahmighrita, Shadangapaniyam, Panchakola siddha yavagu, Saptacchadaras, Anutaila, Shadbindutaila, Varanadikshiraghrita, Bharngigudam.

Vyadhi Viparita Chikitsa

The treatment according to Ayurveda is not generalized. It differs from person to person basing on the constitutional makeup of the individual, stage & phase of the disease, presence or otherwise of the complications etc. Hence the discretion of the Physician is well emphasized in evaluating the disease and patient before resorting to treatment. Since the Covid – 19 is manifested in different phases it can be correlated with disease conditions mentioned in Ayurvedic classics. The following drugs are of some help in prevention, control and managing the disease in its different stages and also to improve immunity status of the affected individual.

Rasayana

S.no.	Category	Drugs
	Single Drugs	Guduchi, Tulasi, Nimba, Bhumyamalaki, Yashtimadhu, Katuki, Bhringaraja, Punarnava, Rasona, Amalaki, Ashwagandha, Shatavari, Pippali, Vidari, KirataTikta
	Compound Preparations	Agastya Rasayana, Chyavanaprasha, Kushmanda Rasayana, VyaghriHaritaki Rasayana, Kasturikalpa Rasayana, Madhu Haritaki, Madhukakhya Rasayana, Yogaraja Rasayana, Vardhamana Pippali, Agastya Hareetaki, Chitraka Hareetaki, Narasimha Churnam.

Achara Rasayana

S.no.	Category	Drugs
	Preventive Measures	Avoid Gatra Samsparsha Avoid factors of Sankramikaroga Avoid Prajnaparadha Avoid Adharma Avoiding Dasavidha Papa Karma Personal - Hygiene Hygiene of environment Healthy & wholesome diet
	Life-style Modifications	Ashta Ahara vidhi visheshayatana Hitahara Vihara sevana Meditation

		Sadvritta Samyag Vegadharana Aaptanuserana Sama Dheera Daana Indriya Upashanti ISOLATION: Some classical references annotate <i>Sthāna Parithyāga</i> , <i>Gupterātmāna</i> which can be co related with and isolation, physical distancing
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CONCLUSION

The history of infection and infectious diseases is as old as mankind. The concept of Micro-organism has been well emphasized in Ayurvedic Classics in the context of *Bhuta*, *Graha*, and *Krimi* and un-hygienic practices. Acharya Charaka has elaborately detailed the etiology, habitat, nomenclature, clinical features, effects and treatments for various *krimis* in *Vimanasthana* of his compendium Charaka Samhita in the context of Janapadodhwamsa Vimanam. Management is also very akin to modern Microbiology. Avoiding the responsible factors (*Nidana parivarjana*), Removal of the organism (*Apakarshana*), limiting the spread by isolation, bringing change in the environment (*Prakruti vighata*), strengthening the immune system and observing the cyclic occurrence.

Ayurveda holds that normalcy must be evaluated individually, because every human constitution manifests its own particular and spontaneous temperament and functioning. It focuses on causes rather than symptoms. The treatments are person specific rather than disorder specific.

Ayurveda balances and rejuvenates an organism reducing its susceptibility and empowering its immunity to prevent new disease from developing. The remedies are deep acting inducing metabolic changes through various systems to bring about cure or long-term regression from the ailment. It includes not only medicine but diet, daily routine, atmosphere and mental health as well, and it covers vast field. It also has a whole science of self-care including an entire methodology of right living for optimum health.

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