

## A CRITICAL REVIEW OF COVID 19- IN AYURVEDIC PERSPECTIVE

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## INTRODUCTION

WHO declared covid 19 as pandemic disease on 11<sup>th</sup> March 2020<sup>[1]</sup> and it has been a hot topic of discussion since then. As the disease raising massive health, economic, environmental, political and social challenges to the entire global community. The whole world is struggling to cope with this emerging disaster and everyone is trying to give their best efforts to combat this pandemic. The World Health Organization has also recommended inclusion of traditional medicine in its COVID-19 strategic preparedness and response plan.<sup>[2]</sup>

India has world's oldest existing health care system, Also india has its own challenges to fight this disaster like dense population, limited resources, average health care infrastructure, lack of awareness. Still fortunately mortality rate in india is significantly low as compared to developed countries. Multiple factors contributed in having low mortality rate in india but certainly there is crucial role of indian diet, lifestyle and AYUSH protocol for prevention. As the disease is novel and unpredictable it is important to understand the pathophysiology of the disease according to different fraternity. To combat this global crisis ministry of Ayush has published research based guidelines for public to boost their immunity and remain healthy as well as also published clinical protocols for prevention and management of disease.<sup>[3]</sup> This is a small effort to review covid 19 disease in Ayurvedic point of view. As diseases are innumerable based on distinctive features, like nidaan, samsthan, lakshana, vedana, varna, vaidya have to carefully examine and diagnose the disease by yukti and treat as per aptopadesh.

The World Health Organization (WHO) declared COVID-19 to be a pandemic when it became clear that the illness was severe and that it was spreading quickly over a wide area<sup>[4]</sup> The WHO's pandemic alert system ranges from Phase 1 -a low risk disease to Phase 6 -a full pandemic.

**Concept of epidemic/pandemic in Ayurvedic context**

In Ayurveda, a concept similar to the epidemic is described by Acharya Charak as 'Janapadodhwamsa' in vimansthan.<sup>[5]</sup> The word 'Janapadodhwamsa' comprises of two words 'Janapada' that means large population & the second word 'Updhwamsa' stands for annihilation/distruction. Which means the disease is

affecting & causing damage of a large number of people. Acharya Charak devotes the entire chapter for discussion on epidemics and points out how people with different Prakriti, Sara etc. can be affected in same time by the same disease due to the influence of common etiological factors like air, water, place and time, but does not list or describe specific epidemic diseases.<sup>[6]</sup> In order to explain the etiological aspect behind the Janapadodhwamsa, Acharya Charaka mentioned Adharm i.e. non virtuous act as the root cause, which can be correlated with the sinful acts, immorality, injustice, crimes.

Acharya Shushrut has also described the situation as Maraka<sup>[7]</sup> and gave examples of marak (epidemic diseases) e.g. Kasa (cough), Shawas (breathlessness), Vamathu (nausea), Prtishyaya(cold), Shiroruja (headache), and Jwara (fever) as the ailments seen during maraka.<sup>[9]</sup> Dalhana also included Gandh-agyana (loss of smell sensations) and Bhrama (impaired cognitive functions) in his commentary on this shloka, which are commonly reported symptoms of Covid-19.<sup>[10]</sup>

In Bhela Samhitā the condition of the pandemic is stated as Janamara.<sup>[8]</sup>

According to acharya charak, the factors responsible for 'Janapadodhwamsa' i.e. vitiated Vayu (air), Desha (habitat) and Kala (seasons). These factors can be compared with transmission of covid 19 virus by, inhalation of droplets from an infected person by a healthy person, travelling of an infected patient from one place/country [desh] to another, spread of virus through formites, seasonal changes allow more natural transmission of SARS-CoV-2 virus responsible for this disease.<sup>[9,10]</sup>

For the management of epidemics preventive measures described in Ayurveda are as Collection of potent medicinal drugs before the outbreak of an epidemic, avoid sinful acts & intellectual errors, use of Pancha-Karma, Rasayana Chikitsa to enhance the immunity and strength, truthfulness, compassion for living being, donations, openhandedness, worshipping god, codes of conduct, practice of mantras & auspicious rituals help to prevent the disease.<sup>[11]</sup>

### Infectious aspect of the COVID-19 disease

Infectious disease is also called as transmissible or communicable disease. COVID-19 is a highly infectious and potentially fatal disease of respiratory tract caused by Severe Acute Respiratory Syndrome Corona Virus-2 (SARS-CoV-2, 2019-nCoV). The World Health Organization (WHO) declared coronavirus a pandemic due to extensive scale of the outbreak within few months of its origin. Until 31 January 2021 WHO reported the cumulative total to 100 million confirmed COVID-19 cases including more than two million deaths.<sup>[12]</sup> In terms of the number of confirmed coronavirus cases, the US, India, Brazil, Russia and UK are the five most-affected countries.

The virus is transmitted through direct contact with respiratory droplets of an infected person (generated through coughing and sneezing). Individuals can also be infected from and touching surfaces contaminated with the virus and touching their face (e.g., eyes, nose, mouth). The COVID-19 virus may survive on surfaces for several hours, but simple disinfectants can kill it.<sup>[13]</sup>

### The concept of infectious or communicable disease in Ayurvedic context

According to Ayurvedic point of view the Infectious diseases can be compared with the Aupasargika or Sansargaja Roga, as described by Acharya Shushruta in the context of Kushtha Nidana. While explaining transmission of disease from one person to another Acharya Shushruta explained that by gatrasansparshata (physical contact), nihsavshata (expired air), Sahabhojnata (eating with others in same plate), Sahashayasanat (sharing a bed), vastramalyanulepanata (using clothes, garlands, and paste) infectious diseases spread. He also have given examples of such infectious diseases like kushtha (skin diseases), jwar (Fever), shosha, pratishyay etc.<sup>[14]</sup>

These concepts are very much relevant with the COVID-19 as it is clear that the primary transmission of SARSCoV-2 is due to direct (through breathing of respiratory droplets of infected person) or indirect (by touching the infected surfaces or objects i.e. fomites) contact of the infected person.

In Ayurveda diseases are grossly classified into two types on the basis of their etiological factors. The disease caused by the vitiation of internal factors of the body i.e. Doshas, Dhatu, Mala, Agni etc. are considered as

NijaRoga and the disease caused by the external factors are known as Agantuja Roga. In the context of Jvara, Agantuja roga are further classified into four types and named as Abhishangaja, Abhighataja, Abhicharaja and Abhishapaja.<sup>[19]</sup> Out of these four types the Abhishangaja type stands for the infectious origin and also named as bhutabhishangaja jvara.<sup>[15]</sup>

Acharya Cakrapani clarifies that bhuta means vishakrimi or a virulent organism while Vijayaraksita, the commentator of Madhavanidana stated that diseases caused by Bhutopasarga (invasion of Bhutas like Vishakrimi) can be contagious and spreads from person to person. Due to confirmed infectious and viral origin of COVID-19, and presence of fever as the most common symptom of the disease, at some points it can be considered as Bhutabhishangaja Jvara. In JvaraPratishedha Adhyaya, Acharya Shusruta stated Bhutabhishanga as a reason of Vishama -Jvara.<sup>[16]</sup>

As the Abhishangaja type of vyadhi stands for the infectious-origin of disease and as the fever is the most common reported symptom of COVID-19, it can also be considered as Bhutabhishangaja jvara which is due to Tridosha vitiation. So if we have a thought of comparing the disease with sannipatikajvara of agantuja type according to Acharya Charaka it can be considered as vatakapha-ulvana, pitta-avara sannipatika jvara due to resemblance of symptoms like fever, chills, cough, anorexia, thirst, burning sensation and aches etc.<sup>[17]</sup>

In charaka samhita our acharya says that one must not get shamed if he do not know the name of disease because it is not possible to name all the diseases, we can treat any disease by knowing three basic tools 1) vikara samutthana, 2) vikara adhisthana 3) vikar prakruti & with the help of this three tools, we can make diagnosis of any disease properly.

Ayurveda has both preventive and curative aspect. In literature of Ayurveda, acharya mentions preventive aspect as a swasthruta [dincharya and rutucharya] and sadvruta.

For making proper diagnosis of any disease, we must know three basic things like origin of dosha (etiological factor), nature of pathology and pathological sites which is mentioned in samhitas vikar samutthan, vikar prakruti and vikar adhisthan. In combination all these three are called trividha bodhya samgraha. If the Bhishaka have proper knowledge about Bhesaja but don't know about roga then he will not succeed in Chikitsa. On other hand if Bhishaka have proper knowledge about Roga, Bhesaja, Desha, Kala, Pramana, Bhishakadefinitely succeed in Chikitsa.

Acharya Caraka mentions 4 chapters in sutra sthana for diagnosis of diseases, which called Roga Chatustaka. Which are including Kiyantashirasiya, Trishothiya, Ashtodariya & Maharoga adhyaya. In this roga chatuska,

Acharya Charaka had stated mainly three factors to understand pathogenesis of any disease which are as follows<sup>[18]</sup>

- Vikar Samutthan is a Pathogenesis. It has nidana panchaka (Nidana, Purvarup, Rup, Upashaya-anupashaya, Samprapti). (also see as shadvidha kriyakala).
- Vikar Prakruti is a Pathology. It has Dosha, Dushya, Agni & Agnimandya janit Samata.
- Vikar Adhithana is a Pathological site. It has included Anga and Anga avayava (organs) and Strotasa (Systems).

**Nidana Panchaka:** Nidana Panchaka is a great tool for diagnosis of disease in Ayurveda. The Ayurvedic diagnostic approach is of two types

- Rogapariksha
- Rogipariksha

Among them Rogapariksha gives us the complete knowledge about a disease starting from the etiological aspects to the actual manifestation of disease.

#### **Nidana (etiology)**

As mentioned above While explaining the Nidana of Vyadhi, Acharyas classified into two division broadly as;

- Nija Vyadhi
- Agantuja Vyadhi

Nija Vyadhies involves Aharaja and Viharaja Nidana which directly leads to Dosha vitiation.

Agantuja Vyadhies involves Abhighataja, Abhishangaja, Abhisapaja, Abhicharaja Nidanas. Which causes Vyadhi first then leads to Doshic vitiation which causes Vyadhi first then leads to Doshic vitiation. In case of covid 19 it can be considered as agantuj vyadhi but also aharaj and viharaj dosha [diet and lifestyle] prakopak hetu also play crucial role in development, progression, prognosis, severity of disease.

#### **Purvarupa (Prodromal symptoms)**

Symptoms that do not give a clear indication of a dosha imbalance can be described as Purvarupa.<sup>[19]</sup> The symptoms of COVID-19 infection appear after an incubation period of approximately 5.2 days.<sup>[20]</sup> Overall symptoms like anorexia, tiredness, restlessness, throat discomfort, loss of sensations of smell and taste can be included as the prodromal symptoms of the disease.

#### **Rupa (Clinical Symptomatology)**

Jvara(Fever), Kasa(cough) and shortness of breath (Swasha) are the most commonly reported symptoms of the disease which points to Vata kapha dominance. Santapa, Trishna, Aruchi, Angamarda, Hrud Vyatha, Shirashoola, Svarabheda, Suska Kanta Uraaasya, Suskakasa, Swasa, Daha, Mandagni, Peenasa, atisaar are also seen.

#### **Upashaya (Therapeutic Response)**

Ayurvedic clinical studies are being conducted to elicit the upashayatmaka (positive effect) or anupashayatmaka (negative effect) of various interventions in the form of medicines (Aushadha), diet (Ahara) and activities (Vihara) to confirm the provisional assessment of dosha imbalance and other Ayurvedic parameters.

#### **Possible aspects of Ayurvedic preventive measure and management for COVID-19.<sup>[21]</sup>**

- Nidan parivarjan (social distance, means should not touch or remain close to the diseased person, avoid dining, sitting with the infected person, to prevent droplet infection, we should keep covering the mouth, should not share clothes, cosmetics with the diseased person.)
- Personal hygiene
- Sadvrutta palan
- Homa/Dhupan
- Vyayam/yogabhyas
- Satvavajay chikitsa
- Pranayama
- Rasayan dravya sevan(immunomodulatory drugs)

#### **Samprapti [pathophysiology]**

As described earlier the disease is considered as Agantuja – Bhutabhishangaja Vyadhi, the clinical progress of disease begins following exposure to infection (Bhutopsarga). Doshas start getting vitiated following exposure to infection (Bhutai.e. the virulent virus of the disease SARS-CoV-2) and starts affecting the Pranavaha strotas and rasavaha strotasa in preliminary stages manifests as cough (Kasa), dyspnea (Swasha) and fever (Jvara).The further pathogenesis of the disease depends on the immune response of the patient and presence or absence of risk factors. Patients with competent immune functions [i.e. patients with uttam bala and vyadhikshamatva ]and without obvious risk factors such as old age, co-morbidities etc. may generate effective and adequate immune responses to suppress the virus in the first or second phase without immune over-reaction. In contrast, patients with depressed immune function[hina bala] may have a higher risk of failing the initial phase and becoming severely ill with higher mortality.

#### **Shatkriyakala (Clinical course of the disease)<sup>[22,23]</sup>**

The term Kriyakala refers to the recognition of the stage of a disease's progress i.e. stages of pathogenesis, which helps to determine appropriate measure to correct the imbalance in Doshas according to stage of disease. As the newly identified COVID-19 is not described in Ayurvedic literatures, we can make an effort to explain the Shatkriyakala to understand the various stages of the disease.

#### **Stage of Sanchaya, Prakopa and Prasara**

As covid 19 is a agantuj vyadhi, the first three stages of Shatakriyakala i.e. the stage of Sanchaya, Prakopa and Prasara are difficult to differentiate But the phase of

incubation period of the disease can be tentatively compared with these three stages can tentatively correlate the incubation period of COVID-19 with this phase. Being the Agantuja phase of pathogenesis, dosha specific symptoms may not be seen.

#### Stage of Sthanasamshraya or Purvaroop (stage of localization/prodromal symptoms of disease)

In this stage the aggravated dosha, start to localize to any part of the body described as kha vaigunya: weak or pre-defective site, and the process of interaction between dosha and dushya (tissues) begins known as stage of dosha-dushya sammurchana.<sup>[37]</sup> In this stage all the prodromal symptoms of disease appears. In case of covid 19 dosha localizes in pranavaha and rasavaha srotas.

#### Stage of Vyakti (Symptomatic stage of the disease)

In this stage, clinical features are well manifested and one can easily identify the disease. In case of COVID-19, as described previously under the heading of Roop.

#### Stage of Bheda (Stage of complications of disease)

In this stage doshaja type of disease can be decided and the diseases became chirakari (chronic) or asadhya (incurable). In case of COVID-19, it can be compared with the critical stage of patient characterized by severe pneumonia, ARDS and hypoxia. This stage of COVID-19 is associated with higher rate of mortality.

#### Samprapti Ghatak

- Dosha- Tridoshaja kaphavata Pradhan Pitta Anubandha.
- Dushya - Rasa and other Dhatus in the later stages of the disease.
- Vyadhi Swabhava – Ashukari, Atyayik (acute).
- Strotas- Rasavaha & Pranavaha Strotas, in early stage and later on involvement of other Strotas.
- Stroto Dushti Prakara - Vimarga Gamana, Sanga, Atipravritti.
- Rogamarga -Abhyantara
- Adhishthana- Pranavaha Strotas and later Sarva Shareera.
- Vikara Prakriti – Daruna, Atyayik.
- Sadhyatasadhyata - Sadhya in stages of Sanchaya and Prakopa, and krichra sadhya in stages of Prasara and Sthana Samshraya. Asadhyaa in the stage of Bheda especially in the cases of elderly persons with existing co-morbid factors and Alpa Rogi Bala.

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