



AYURVEDA THEORIES OF VIRAL INFECTIONS W.S.R. TO PATHOGENESIS OF COVID-19

Dr. Prasad Navanath Ghanawat^{1a, 1b*}, Dr. Prakash Mane², Dr. Pallavi Nibe³, Dr. Sunil Ugale⁴ and Dr. Mangesh Udmale⁵

^{1a}Assistant Professor in Rog Nidan Evum Vikriti Vigyan Department., PMT's Ayurved College, Shevgaon, Dist-Ahmednagar (Maharashtra state) India.

^{1b}PhD Scholar in Rog Nidan Evum Vikriti Vigyan Department., Dr. D.Y. Patil Ayurved College and Hospital, Pune (Maharashtra state) India.

²Associate Professor in Rog Nidan Evum Vikriti Vigyan Department., Dr. D.Y. Patil Ayurved College and Hospital, Pune (Maharashtra state) India.

³Assistant Professor in Sharir Rachna Department, PMT's Ayurved College, Shevgaon, Dist-Ahmednagar (Maharashtra state) India.

⁴Associate Professor in Shalakya Tantra Department, PMT's Ayurved College, Shevgaon, Dist-Ahmednagar (Maharashtra state) India.

⁵Assistant Professor in Rog Nidan Evum Vikriti Vigyan Department, Dr. D.Y. Patil Ayurved College and Hospital, Pune (Maharashtra state) India.

***Corresponding Author: Dr. Prasad Navanath Ghanawat**

Assistant Professor in Rog Nidan Evum Vikriti Vigyan Department., PMT's Ayurved College, Shevgaon, Dist-Ahmednagar (Maharashtra state) India.

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ABSTRACT

Ayurvedic scholars had properly mentioned about the *Sankramak Roga*, *Janapadodhwamsa* in their literatures hundred years ago. Mankind is facing pandemic since ages and recently we are facing the Covid-19 which has affected the whole world. According to *Ayurveda*, *Roga* are also classified as *Upsragaja* and *Sansargaja* on the basis of their mode of transmission. Pathophysiology of any disease is related to the various factors such as *Doshas*, *Dhatu*, *Malas*, *Srotas* and *Agni*. *Ayurveda* consider various extrinsic or intrinsic factors which can disturb the normal functioning of the body and thus resulting in the disease production. *Ayurveda* is considering Covid-19 as an *Agantuja vyadhi*, which is responsible for producing *Sannipata Jwara* by affecting all the three *Doshas* (*Vata*, *Pitta*, *Kapha*) in the body. This infection is caused by the *Agantu*, *Bhoota Abhisanga*. In this *Vyadhi*, *Roga marga* is *Abhyantara* as the three major symptoms (*Jwara*, *Kasa*, *Svasa*) of the Covid-19 belong to this *Roga marga* thus resulting into *Pranavaha Srotadushti*.

KEYWORDS: *Janapadodhwamsa*, *Agantuja vyadhi*, *Abhyantara*, *Doshas*, *Jwara*.

INTRODUCTION

It is mentioned in *Ayurvedic* treatises that every individual is unique and dissimilar but all people have something common between them. These common things are *Vayu* (air), *Jala* (water), *Desha* (place) and *Kala* (time). Vitiating of these factors results in the production of the disease. These diseases affect large number of people and cause similar symptoms leading to the destruction of an area resulting into the *Janapadodhwamsa*.

Janapadodhwamsa are the result of the *Sankramak Roga*. *Sankramak Rogas* are the communicable diseases which spread from one person to another either in direct way or in indirect way. Indirect transmission can occur through various means such as through *Gatrasansparsat*

(physical contact), *Nihsvasat* (expired air), *Saha bhojanata* (sharing food with others in the same plate), *Sahasayyanaccapi* (sleeping on the same bed), sharing of clothes, paste, towel etc.

According to *Ayurveda*, *Roga* can be *Nija* or *Agantuja*. *Nija Roga* occurs due to internal changes in the body while *Agantuja Roga* is caused by the invasion of micro-organisms into the body. Sometimes, if the *Agantuja Roga* is ignored then it can lead to the chronic diseases. Any microbial invasion can only affect the body when the *Bala* gets reduced. Decreased *Bala* can initiate the pathogenesis of the *Sankramak Roga*. *Agantu* (foreign agents) when enter into the body, first develop in the tissues and then produce various toxins which can finally result in disease.

According to the *Kriyakala* concept of *Ayurveda*, stage of *Sanchaya* is the stage of susceptibility which states that if the body provides a proper environment for the disease then only disease can occur. Intrinsic factors such as *Dhatu*, *Dosha*, *Srotas* and *Agni* play an important role in the pathophysiology of the *Roga*. *Nija Vyadhi Roga* occurs due to vitiation of the *Doshas* (*Pitta*, *Kapha*, *Vata*). In the first and second stage of *Kriyakala*, *Doshas* get accumulated and in the last stages vitiated *Doshas* start moving, spreading in the body and finally settle in a particular organ. Accumulated *Doshas*, increases *Kosthagni*, resulting in improper digestion which leads to production of *Ama*. *Ama* gets accumulated in the minute *Srotas* leading to *Srotadushti*. Due to *Srotadushti*, *Ama* and aggravated *Doshas* are not able to cross the minute channels of the body and thus causes obstruction which leads to production of disease.

Ayurveda and Covid-19

Ayurvedic literatures have described about the epidemics, pandemics of *Sankramak Roga* which are affecting the

human life since ages. Epidemic (*Aupasargika Roga*) is a sudden outbreak which affects the local area but pandemic (*Janapadodhwamsa Roga*) affects the large area such as nation or it can spread to other countries also. Corona viruses are group of RNA viruses that affect mammals and birds. Coronavirus are single stranded RNA virus which is non-segmented and enveloped. They cause respiratory tract infections that can vary from mild to fatal. WHO named the virus as Covid-19 and declared it as pandemic which is affecting the whole world. Covid-19 infection can be considered as *Kaphapradhan*, *Pittamadhya* and *Vatahin*.

Modes of Transmission of Covid-19

- ✓ *Prasanagat* (Physical contact)
- ✓ *Gatra Samsparshat* (Contact with diseased person)
- ✓ *Nihswasat* (through droplets)
- ✓ *Sahasayya* (sharing same bed)
- ✓ *Asana* (sitting together)
- ✓ *Vastra* (exchanging of clothes)
- ✓ *Sahabhajnata* (sharing of food)

Samprapti Ghatakas

Table 1: Pathological Components involved in disease.

S. No.	Pathological Components	Descriptions
1	<i>Dosha</i>	Predominantly <i>Kapha</i> and both <i>Vata</i> , <i>Pitta</i> are affected secondarily
2	<i>Agni</i>	<i>Mandagni</i> is affected
3	<i>Dushya</i>	<i>Rasa Dhatu</i> gets disturbed
4	<i>Srotashmi</i>	It affects <i>Pranavaha Srotas</i> (respiratory system and passages) and <i>Rasavaha Srotas</i> (blood plasma)
5	<i>Sthana</i>	<i>Udbhava sthana</i> (upper region of the body)
6	<i>Vyakta</i>	Mainly affect the regions associated with <i>Kapha Dosha</i> such as lungs, respiratory passage, sinuses, heart, blood etc.

Covid-19 causes symptoms as mentioned in **Figure 1**. Some other less common symptoms are diarrhea, conjunctivitis, sore throat, headache and loss of taste or smell. These symptoms start appearing after 2-14 days of exposure to the virus. Diagnosis is based on computed tomography and reverse transcription –polymerase chain reaction. This RT-PCR can be done by taking nasopharyngeal swab or sputum sample. *Jwara* of *Vata-Pitta* predominance is reported in various cases.

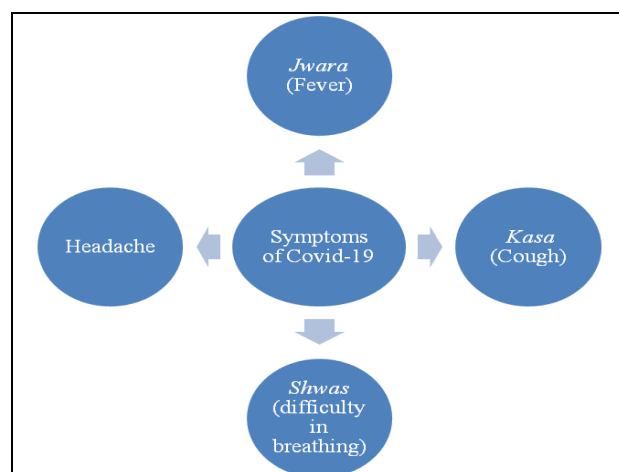


Figure 1: Probable symptoms of Covid-19.

Ayurveda consider Covid-19 as *Janapada udhwansaneey*. This is because it is causing death of many people at the same time though they have different *Prakriti*, *Deha*, *Ahara*, *Bala*, *Satva* etc. It is placed in the class of *Bhutabhishangaj* (caused by microbes). According to *Ayurveda*, Covid-19 infection can be classified under the *Agantuja Jwara*. *Ayurvedic* scholars have described the term *Jwara* as the disease which causes discomfort to the *Sharir* (body), *Manas* and *Indriya*. *Jwara* has destructive properties and there are various types of *Jwara* classified in the *Ayurveda*. *Agantuja Jwara* is caused by the foreign bodies. *Tridosha* have their separate role in producing *Jwara*, in which *Pitta Dosha* plays important role. *Pitta* regulates the normal temperature of the body and thus it is responsible for the *Tapa* (high temperature) and *Daha* (burning sensation) symptom. As the Covid-19 infection is causing cough also, therefore *Vata Dosha* is also associated with this. It is having *Abhyantara Roga Marga* which involves *Phupusa* (lungs).

Pathogenesis of Covid-19

- Stage of *Sanchaya* is the stage of accumulation of *Doshas* at their own sites. These aggravated *Doshas*

are responsible for formation of *Roga*. This result in feeling of uneasiness, fatigue, digestive problems etc. which indicate the onset of *Roga*.

- After the advancement of disease, in the stage of *Prakopa* aggravated *Doshas* leave their site and settle at other places. At this stage due to Covid-19 infection, vitiated *Doshas* start producing respiratory symptoms.
- During stage of *Prasara* (propagation) *Doshas* start moving towards the target organ according to the associated *Vyadhi*. Corona viruses mainly affect the respiratory system and thus here the target organ is *Phupusa* (lungs). Body starts producing changes and physiological functions start getting affected.
- After moving to target organ in *Prasara* stage, vitiated *Doshas* start settling in the target organ during the Stage of *Sthanasamshraya* (localization). Now the infection spreads and symptoms such as *Jwara* (Fever), *Kasa* (Cough), *Shwas* (difficulty in breathing), Nasal discharge, *Angamarda* (Myalgia) start appearing.
- After the premonitory stage, there comes the stage of *Vyakta* (manifestation). This is considered as the visible stage of disease. At this time, all the symptoms and sign can be easily seen in the patient's body.
- Last stage is the stage of *Bheda* (complication), in which if treatment is not given in proper way then disease aggravates and becomes fatal. Covid-19 infection can lead to the pneumonia, severe heart and renal problems and if not treated then can cause death also.

CONCLUSION

Covid-19 is an infectious disease which is caused by SARS COV-2 (severe acute respiratory syndrome virus 2). It mainly affect the respiratory and systemic functions. During this Covid-19 outbreak, we should observe the things properly and should try to prevent such conditions in future. Covid-19 can be co-related as the *Sannipata Agantuja Jwara* having *Vata-Kapha* predominance. This infection is caused by the *Agantu*, *Bhoota Abhisanga*. In this *Vyadhi*, *Roga marga* is *Abhyantara* because the three major symptoms (*Jwara*, *Kasa*, *Svasa*) of the Covid-19 belong to the *Roga marga*. Main site of infection is *Uras* (chest area) and is resulting into *Pranavaha Sroto Dushti*. *Ayurveda* consider three important modalities for treatment such as *Ahara*, *Vihara* and *Aushadhi*, all this together can prevent the risk of infection.

REFERENCES

1. World Health Organisation. Q&A on coronaviruses (COVID-19 [online] who.int, accessed on, 2020.
2. Shastri Pandit Kashinath, Chaturvedi Dr. Gorakhnath. Hindi Commentary: *Charak Samhita*

Chikitsasthan, 110-111. Chaukhambha Bharati Akadami Publication, Varanashi, Reprint Edition, 2007.

3. *Agnivesha, Charaka Samhita* elaborated by Charaka & Drudhabala with *Ayurveda-Deepika* Commentary by Chakrapanidatta, edited by Vaidya Jadavaji Trikamji Acharya, Varanasi, Choukhambha Surbharati Prakashan, Reprinted, 2011 Vimanasthana chapter 6.
4. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>, accessed on, 2020.
5. CDC. Coronavirus Disease 2019 (COVID-19) – Symptoms. Centers for Disease Control and Prevention, 2020.
6. Sanjeev Rastogi. Deep Narayan Pandey, ram Harsh Singh. COVID 19 Pandemic: A pragmatic plan for ayurveda intervention. *Journal of Ayurveda and Integrative medicine*, 2020; 10: 02.
7. Sharma Ram Karan, Dash Vaidya Bhagwan, editors. *Charaka Samhita* of Agnivesha, text with English translation of Ayurveda Dipika commentary of Chakrapanidatta. Varanasi: Chowkhambha Sanskrit Series, 2003.
8. Tillu G, Chaturvedi S, Chopra A, Patwardhan B. Public health approach of Ayurveda and yoga for COVID-19 prophylaxis. *J Altern Complement Med*, 2020; 26.