



## AYURVEDA PERSPECTIVE ON COVID-19, FUNGAL-INFECTIONS ASSOCIATED WITH DISEASE AND POSSIBLE MANAGEMENT: A REVIEW

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### Abstract

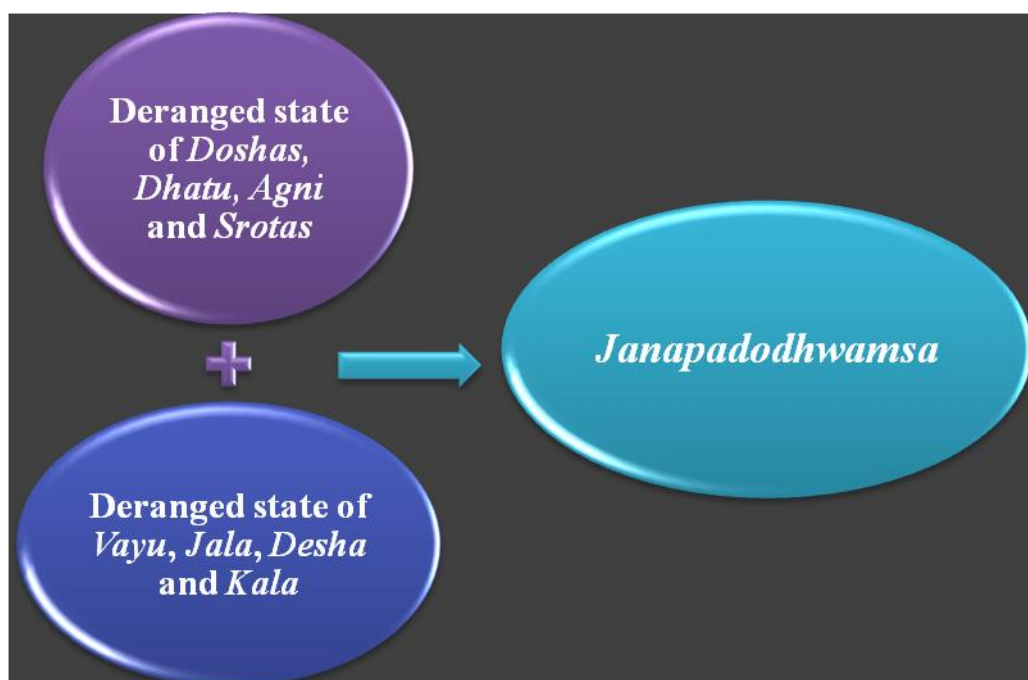
Ayurveda the fore front system of health care described terms *Janapadodhwamsa* or *Maraka* for epidemics. Ayurveda mentioned *Nidana* (causative factors) for *Janapadodhwamsa*. Host susceptibility (*Nija*) when get affected by external agent (*Agantuja*) then such types of diseases arises. COVID - 19 is one such type of condition occurs due to the viral infection. Anti-viral medications (*Prativisha*) and guideline suggested as per medicinal agencies can provide preventive and therapeutic benefits. Literatures revealed post COVID manifestation of fungal infections in some patients. This article reviewed Ayurveda perspective on *Janapadodhwamsa* and possible management of COVID-19 w.s.r. to prevalence and management of post COVID fungal infection.

### Keywords:

*Ayurveda, COVID - 19, Janapadodhwamsa, Epidemic, Fungal Infection.*

## Introduction

Ayurveda the oldest science of medicine of Indian origin contributed significantly towards the health restoration of society. History of epidemics is well mentioned in ancient Ayurveda literatures and Ayurveda scholars described term *Janapadodhwamsa* for such types of condition. Ayurveda described *Nidana*, associated complication and management of various infectious diseases which can be epidemic. Ayurveda mentioned that vitiation in biological entities (**Figure 1**) along with deranged state of *Vayu, Jala, Desha* and *Kala* enhances prevalence of *Aupsargika Roga* which can turn to *Janapadodhwamsa*.



**Figure 1: Probable factors associated with *Aupsargika Roga* and epidemic consequence.**

Currently whole world suffering from pandemic consequences of COVID-19 due to the causative virus (SARS-CoV-2). It is enveloped RNA virus related to the SARS (Severe Acute Respiratory Syndrome) virus. Transmission may occur through close contact, through respiratory droplets *via* coughing and sneezing. Infected surface can also become source of transmission if person touches such infected surface just before touching of his/her eyes, nose and mouth. Fever, cough, myalgia, loss of taste, smell and fatigue are major symptoms of disease. Drugs like; favipiravir, remdesvir, chloroquine and plasma therapy, etc. were utilized in past few months for disease prevention.

Medical science suggested some preventive approaches for controlling transmission of Corona virus like; frequent hand washing, maintaining respiratory hygiene, avoiding of touching of

face, nose & eye, disinfection of objects frequently, wearing of masks, avoiding close contact with ill person, maintaining social distancing and avoidance of unnecessary travelling especially to the affected area.

### **Pandemics as per Ayurveda**

Ayurveda *Samhitha* described concept of mass destruction as epidemics and in context of COVID -19 the principles of *Janapadodhwamskara* or *Maraka & Oupasargika Roga* can be discussed on the basis of their mode of transmission and severity:

Disturbances in environmental factors, vitiation of *Doshas*, *Dhatus*, *Agni mandya* leading to the sluggish metabolism and susceptibility towards the infectious microbes, etc. are some factors together can leads infectious diseases like COVID-19. As per Ayurveda the pulmonary involvement of covid-19 mainly associated with *Pranavaha srotas* associated with *Vata* vitiation. [3-6]

According to Ayurvedic philosophy this problem can be considered as "*Dadru*". The involved *Dosha* is *Kapha & Vata*. *Kapha* symbolizes mucus, resembling cold, heavy and sticky nature. *Vata* symbolizes air which is dry, subtle and mobile. Third *Dosha* is *Pitta* which symbolizes heat or fire. However primarily involved *Doshas* are *Kapha* and *Vata* [7].

Considering current situation the following fundamental principles of Ayurveda need to be adopted for acquiring diseases free health status:

- ❖ Maintaining hydration of body is prerequisite preventive measure of Covid-19, this process helps in detoxification through sweating and urination.
- ❖ Consumption of balanced & healthy food as per *Prakriti* of individual.
- ❖ Diabetic patient may face consequences of such viral infection therefore it is needed to avoid daily and dietary habits which can aggravate diabetes.
- ❖ Antioxidant herbs, cereals, pulses, whole grains and nuts, etc. are advised to maintain immunity.
- ❖ One should avoid routine that can cause fever associated with cold & cough means consumption of too cold water, cold drinks, ice creams and exposure to the allergens, etc.
- ❖ *Tulsi*, *Dalchini*, *Kalimirch*, Turmeric and *Shunthi*, etc. can be as preventive home remedies, these drugs improves immunity and resist prevalence of respiratory infections.

### **Associated complications:**

Invasive fungal infection also observed as post-COVID manifestations in patients, especially patients with diabetic, elderly and immuno-suppressed patients observed prone to such fungal infection. The fungus invades sinuses and enters into orbit and brain thus consequences observed related to the ENT problems. Disturbance in vision, loss of vision, palatal erosion and facial swelling, etc. are symptoms associated with post-COVID fungal manifestation. It is believed that patient with COVID-19 and diabetes may possess altered immune response therefore becomes susceptible for such types of infection. Alteration of oral microbial flora, dry mouth because of uses of drugs, negligence of oral care during severe fever episodes and low immunity, etc. can lead fungal infection. Early clinical diagnosis through microbiological tests, uses of radiology techniques and histopathological profile, etc. can help to combat against such types of conditions before things get worsen [8-11].

### **Possible Management through Natural Ways:**

- ✚ Yoghurt and other probiotics can provide good bacteria and help to restore oral flora that can maintain health of oral or sinus.
- ✚ Cleaning with natural cleanser can help to control spread of infection.
- ✚ Apple cider vinegar can be used due to its antifungal property; however study or documented evidence needed for post pandemic manifestation observed currently.
- ✚ Tea tree oil also possesses antifungal activity and no side effect thus can be advised here with suitable vehicle.
- ✚ Coconut oil acts as antifungal agent, can be advised as safe option for topical application.
- ✚ Topical as well as internal administration of turmeric can provide antimicrobial response.
- ✚ Garlic due to its intense property offers antifungal action. People consume garlic regularly considered less susceptible towards fungal infections.
- ✚ Consumption of Vitamin C can help to boost immune system and protect from infections.
- ✚ Ginger contains Gingerol which has antifungal properties, thus ginger can help to resist severity of infections.

### **Precautions which can help to prevent consequences of fungal infections:**

- Maintain oral hygiene.
- One should maintain hydrated body to regulate process of detoxification.
- Inform to medical practitioner in case of any oral or ENT related problems.

- Diabetic patient need to take more cautious.
- Stress or anxiety can worsen severity therefore one should remain free from stress.
- Complete treatment protocol of pandemic viral infection need to be follow to any instances of associated complications.

## Conclusion

Ayurveda focuses on maintenance of health by preventing and treating diseases. Classical texts of Indian medical science described *Sankarmna Roga* as *Aupsargika Roga* which can transmit from one to another person. Ayurveda mentioned that conduction of seasonal dietic regime, *Vyayam*, uses of Ayurvedic drugs, *Shodhana*, *Yoga*, *Satvavajaya Chikitsa*, *Sadavrutta Palana* and *Rasayana Chikitsa* can be applied for the prevention & management of infectious diseases. Moreover some preventive measures and therapeutic approaches of Ayurveda can be helpful in complications associated with pandemic diseases.

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