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# An Ayurvedic approach to Post Covid Symptoms

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## ABSTRACT

COVID- 19, the recent virus outbreak declared as Pandemic by WHO threatened the world by its fast-spreading nature and is yet creating an alarmed situation throughout the world by Post Covid Symptoms. A recent study on post-COVID manifestation of symptoms showed that about 72 percent of participants had major complaints only 10.8 percent of survivors assessed in the study had no symptoms or manifestations Post Covid. The most common symptoms of COVID-19 are fever, tiredness, and dry cough. Some patients may have aches and pain. However, the worlds had suffered a lot with this pandemic, further the Post Covid symptoms, may add burden to the population in handling their daily works and needs. The incidence is higher in older age group, obesity, diabetic, hypertensive and other respiratory illness. Due to persistent viremia, lack of immunity, Mental factors and other immune responses. **Aim:** To Understand the Post COVID Symptoms and Their Management Through Ayurvedic Treatment Modalities. **Data source:** Ayurvedic literature, Different Ayurvedic and Medical journal, Review articles, Evidence-based articles published online, various National health websites are considered. **Result:** Ayurveda has enormous potential and treatment options which are available for enhancing the immunity and systemic illness and positively influence mental health, thus helpful in combating Post Covid symptoms. **Conclusion:** Ayurveda should be used as main treatment modality for Health restoration and Prevention of Post Covid symptoms and recurrence, rather than an adjuvant therapy in treating Post COVID symptoms.

**Key words:** Covid 19, Post Covid Symptoms, SARS-COV, Immunity.

## INTRODUCTION

Covid 19 pandemic is an ongoing pandemic of corona virus disease 2019, caused by severe acute respiratory syndrome (SARS).<sup>[1]</sup> On 31<sup>st</sup> December 2019, a cluster of cases of pneumonia of unknown cause in the city of Wuhan, Hubei province in China was reported to the

WHO.<sup>[2]</sup> The most common symptoms of COVID-19 are fever, tiredness, and dry cough. Some patients may have aches and pain. Along with, the post Covid symptoms / manifestations are creating an alarmed situation in India.<sup>[3]</sup> As per study in India: Post-covid-19 symptoms were reported among 1,451 of the 4,871 people covered under the project. Over 40 diverse symptoms were reported during the period. Among them fatigue, dry cough, dyspnea, headache, abdominal discomfort, anxiety, insomnia these are seen in higher percentages.<sup>[4]</sup>

## Definition of Post Covid: a/c to NICE

Signs and symptoms that develop during or after an infection consistent with COVID-19 continue for more than 12 weeks and are not explained by an alternative diagnosis. It usually presents with clusters of symptoms, often overlapping, which can fluctuate and change over time.<sup>[5]</sup>

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Depending on the Immunity of a person, COVID-19 can differ in its impact on different people. Similarly, Post-COVID conditions, which have become a grave issue in recent times, have also taken a major toll on people's lives. The incidence is higher in older age group, obesity, diabetic, hypertensive and other respiratory illness. Due to persistent viremia, lack of immunity, Mental factors and other immune responses.

Post Covid manifestations can be understood as *Agnimandya Avasta* and *Dhatukshaya Avastha* in individual. Hence modalities like *Agnivardhaka* and *Rasayana* property medication can be chosen. *Rasayana* therapy is the one which brings the normalcy in Immune system by improving fundamentals like *Dhatu, Agni, Srotas*. And ultimately fights against Post Covid Symptoms.

### AIM AND OBJECTIVE

To Understand the Post COVID Symptoms and their management through Ayurvedic treatment Modalities.

### Pathology behind Covid 19

Covid 19 can affect the upper and lower respiratory tract, lungs are more affected because the virus access host cells via the enzyme ACE2, which is found abundant in type 2 alveolar cells of lungs, the virus uses a special surface glycoprotein called a spike protein to connect to ACE2 and host cells. The macrophages stimulate the release of pro inflammatory cytokines, they work properly in a minute amount to activate different immune cells, thus activate t cells, NK cells and kill microbes. But due to robust and persistent antiviral immune response, causes massive production of cytokine and causes damage to host tissue. It is suggested that alveolar macrophages expressing ACE2 are primary target cells, for SARS COV-2 Infection, these activate macrophages may play an important role in immune system known as cytokine storm and cycle goes on cause septic shock /death.<sup>[6]</sup>

### Fatigue - Causes:

Home quarantine, Antibiotics, Latent infection, Radical theory.<sup>[7]</sup> It is an unusual response to viruses

that can remain latent within your body. Because of home quarantine individual ends up in decreased activity, thus decreases the metabolic rate and loss of appetite cause fatigue. Latent infection causes active immune response and consumption of energy and release of free radical thus accumulation of them causes fatigue.

### Headache - Causes

Covid appropriate behavior, Nasal irritation, *Manasika Bhava*, lifestyle modification. Due to *Shoka, Traasa* of pandemic patient end up in *Apatarapana* and *Jagarana*, due to continues use of mask, decreases the oxygen level, causing dryness of nose/nasal irritation, lifestyle modification like quarantine, isolation, and fake news causes stress overload, all these ends up in headache.

### Shortness of breath - Causes

Chronic inflammation, Alveolar epithelial damage, continue use of mask. Inflammation of upper airway because of Covid causes the fibrosis of alveolar and obstructs airflow, Due to invade of Covid virus into nasal mucosa, affecting the mucosal cells and alveoli, causing damage to alveolar tissue, causes fibrosis or narrowing of alveoli, Thus Obstructs the airflow.

### Abdominal discomfort - Causes

Gut immunity, viral replication, oral antibiotics, and improper intake of food. Gut holds a special place for fighting of infections in system, gut microbiota fights out virus thus helps in active immune response. Replication of virus in gut leads to cell damage and disturb gut functioning. Due to intake of oral antibiotics which destroy the gut flora and decreases absorption, improper intake of food due to loss of taste and stress and decreases functioning of gut cells all these ends up in abdominal discomfort.<sup>[8]</sup>

### Dry cough - Causes

*Vataprakopa*, inflammation, gut lung axis. Due to *Vataprakopa* in later stages of covid, causes drying up of *Kapha Sthana* ie *Uraha Pradesha*, causes *Vatprakopa, Villoma Gati* of *Vata*, causes dry cough. The nasal mucosa is able to mount a similar

inflammatory response to the pulmonary airways. The sensory nerves contain neuropeptides and classical neurotransmitters 4~ that could stimulate the airway sensory nerves to sensitize the cough reflex and produce cough, but currently there is no direct evidence of such an influence on the cough reflex.<sup>[9]</sup>

#### Weight loss - Causes

Decrease physical activity, decrease food intake, Decrease gut microbiota, Inflammation. Alterations of smell and taste, as well as fatigue, lack of appetite, are reported as very prevalent symptoms in COVID-19 that could affect food intake. Decrease physical activity Decrease food intake, decreased gut microbiota and decreased absorption, home quarantine led to lack of physical activity, leading to lean mass. Inflammation alters metabolic pathway, contributing to anorexia and decreased food intake.

#### Anxiety/PTSD - Causes

Fear of illness/discrimination, social isolation, Death of family / friend. Fear of illness and social isolation experienced by Covid 19 patients could exuberate stress in recovered patients. Being diagnosed with a life-threatening illness. Death of family/friend due to Covid.

#### Insomnia - Causes

Re infection, isolation, day time sleep, fear/panic. There is sense of fear and panic among patients, because of isolation and worrying about re infection. Loss of sleep not only affects mood and attention but also body's immune functioning and its ability to fight infections.

#### Management of Post Covid

##### Nidana Parivarjana

1. Avoid crowds
2. Social distancing
3. Using mask
4. Sanitizing

##### Yuktivyapashraya Chikitsa

1. *Shodhana*

2. *Shamana*

3. *Rasayana*

##### Satvavajaya Chikitsa

1. *Ashvasana*
2. *Vignana*
3. Rehabilitative care
4. *PathyaApathya*

##### Daivavyapashraya Chikitsa

1. *Yoga*
2. *Pranayama*
3. *Homa*

##### Pathya Apathya

*Lavanardraka Bakshana, Laja, Yavagu, Saktu Sevana, Spices like Jeera, black pepper, garlic, coriander, ginger, Ajwain should be used in cooking Kiratatikta, Katuki, Musta, Parpataka, Amruta Kashaya. Tikta Grita, Patoladi Grita.*<sup>[10]</sup>

##### Yoga

- *Sukshnavyayama* (warm up) loosening exercises for all joints
- Sitting postures like *Padmasana, Sukhasana, Vajrasana, Paschimottanasana*
- *Yogasana* in supine position: *Pawanmuktasana, Halasana, Matsyasana*
- *Yogasana* in Prone position: *Bhujangasana, Shalabhasana*
- Relaxing Postures: *Shavasana, Makarasana*
- *Pranayama*: Deep Breathing, *Nadishodhana Pranayama, Bhramari Pranayama* 10 repetitions each, Meditation – 10 minutes.<sup>[11]</sup>

**Table 1: Ayurvedic approach as a preventive and curative aspect of post covid symptoms.**

Postcovid symptoms	Possible interventions	Shamanoushadhi
Fatigue	<i>Pachan</i>	<i>Abhyanga: Shathdhoutagrita,</i>

	Atapa Vyayama Abhyanga Rasayana	Chandanadyataila KashayaVarga: Jivaniyamahakashaya, Shramahara mahakashaya Rasyana: Kushmandavaleha Choorna: Pravala Pishti, Baladi ksheera, Guduchi satva Arishta: Ashvagandharishta, Balarishta.
Headache	Svedana: Nadi, Upanah, Veshavar Nasya : Navana Shoolahara Aushadhi Rasayana	Nasya: Brihat Panchamoola Ksheera Nasya, Jeevaniya Gruta Nasya Rasyana: Dashamoola Haritaki Rasoushadhi: Godanti Bhasma, Laxmivilasa Rasa Kashay: Pathyadhishadanga Kvatha Guggulu: Mahayogaraja Guggulu.
Shortness of breath	Svedana Dhoomapana Nasya Shamana Rasayana	Svedana: Aktam Lavana Tailam, Nadi Prastara Sankaraihi Nasya: Grutamanda and Saindhava Inhalation: With Karpoora and Nilgiritaila Grita: Tejovatyadi Gritha Rasoushadhi: Shvasakutararasa Rasayana: Agastya Haritaki
Dry cough	Kavala Dhoomapana Rasayana Shamana	Kavala: Yashtimadhu Phanta, Warm Salt Water Dhoomapana: Haridra Varti, Manashiladi Dhooma. Kantakari Gritha Sitopaladi Choorna Lavangadivati Kantakari Avalehya
Abdominal	Nidana	Nidana Parivarjana: Spicy,

discomfort	Parivarjana Deepana, Pachana Avoid Stress	Oily, Processed Food Avoid Stress: Yoga, Meditation, Vyayama Deepana, Pachana: Yavanishadava Choorna Yashtimadhu Phanta Dadimaka Grita Madiphala Rasayana
Weight loss	Deepana, Pachana Vyayama Yoga Nutritious Diet Rasayana	Avipattikara Choorna Ajamamsa Rasayana Kushmanda Rasayana
Anxiety	Psychotherapy Yoga/Pranayama Shirodhara Abhyanga Shamanoushadi	Ashvasana, Dharmartha Vakya Manasamitravati Kalyanaka Grita Brahmi Taila Narayana Taila
Insomnia	Rasayana Yoga/Pranayama Abhyanga Shirodhara	Brahmi Rasayaan Manasamitra Vati Mahakalyanaka Grita Narayana Taila

## DISCUSSION

Covid-19 is an extremely contagious disease which might prove to be fatal. In addition, patents that recover are left with multiple Post Covid symptoms, it has not only just affected physical health, but it has also caused a state of panic and tension, causing behavioral changes and anxiety problems. People with co morbidities are at most risk hence special attention should be given to them. Post Covid is the hyper inflammatory status, due to robust and persistent antiviral immune response causes massive production of cytokine and causes damage to host tissue. Hence the early identification and appropriate treatment of this hyper inflammatory status is important for reducing the mortality of patient with Covid 19. An

Immunomodulatory therapy targeting cytokine show improves the outcome and reduces mortality post Covid. Immunomodulatory drugs modify the response of immune system by increasing or decreasing the production of serum antibodies.

#### Ayurvedic management of Post Covid

**Nidana Parivarjana:** Here we should consider Covid appropriate behavior by which one can avoid the triggering factors for re infection.

**Yuktivyapashraya:** Prescription of *Ahara* and *Oushadhi* based on *Bala* of patient includes careful use of *Shodhana* and *Shamoushadhi* like *Nasya*, *Samshamanavati*, *Laxmivilasa Rasa* are said effective in managing post Covid.

**Satvavajaya:** Here *Ashvasana*; reassurance in the form of education and telling the patient about post Covid manifestations, and educating them to follow proper diet and personal conduct and increase the self-confidence to fight against the disease.

**Dharmarthavakya:** Correcting depressive thoughts / negative thoughts by friendly advice.

**Psychotherapy:** It involves *Gnana* and *Vignana*, *Gnana: Atmagnan* i.e., knowledge of self / awareness about one's health mainly daily routine diet and sleep

**Vignana:** Awareness about disease condition/ look forward for positive hope by avoiding myths and fake news.

**Fatigue: Pachana** Strengthens *Jataragni*, does *Pachana* of *Ama*, i.e., free radicals ex: *Musta*, *Mishi*. Exposure to sunlight /triggers vit d production, increaseas metabolic activity /Enhance mood, release endorphins, increases immune system. Regular physical exercise enhances the antioxidant defence system and protects against free radical damage. Due to *Guna Samanya* Posses *Rasayana* property *Madhura Rasa*, *Guru Snigdha Guna*, *Sheeta Virya Madhura Vipaka*.

**Headache: Svedana** (*Nadi*, *Upanaha*, *Veshavar*): *Snighda* and *Bruhmana Svedana* is indicated in *Dhatukshayajanya Shirashoola*. **Nasya (Jeevaniya Grita Nasya);** Medicated *Sneha* has lipid soluble

substance, easily absorbed by nasal mucosa enters the circulation. *Dhoopana* with *Haridra Varti* causes *Shoolahara*.

**Shortness of breath: Svedana (Aktamlavana Tailam):** Does vasodilatation and improves exchange of gases, Releases the obstruction and helps good airflow. **Nasya;** Clears the nasal pathway and aids good airflow. **Agastya Haritaki;** Due to anti-inflammatory action helps reduces inflammation of lining of bronchial tubes and exerting soothing effects, also has mucolytic action, dilates the airway, and allow proper airway.

**Abdominal discomfort: Deepana, (Ashta Choorna);** due to *Ushna* and *Teekhsna Guna*, increases the gastric secretion and induces digestion and reduces *Ama* and helps abdominal discomfort. **Madiphala Rasyana:** Its main ingredient –*Matulunga*, *Trikatu* and *Saindhava Lavana Matulunga* contains vit C which is immune booster *Saindhva Lavana* because of alkaline property maintains gastric pH and balances it.

**Dry Cough: Steam inhalation: Dhoomapana** dilates blood vessels & help in oxidation of blood. It leads to adequate tissue perfusion & oxygenation to the brain cells. They also possess antimicrobial & antifungal, antiviral properties. Because of *Ushna Virya* it acts as Anti-inflammatory and Bronchodilator and promotes proper airflow to lungs, *Kaphavatahara*.

**Weight loss-Deepana:** Due to *Ushna* and *Teeksha Guna* helps increases digestion and increase appetite, does remove *amata* and reduces the toxins in gut. **Yoga:** Due to *Yoga* and *Vyayama*, there is increase in metabolic activity of body and increases energy consumption and increases food intake. **Pathya:** Taking *Madhura rasa*, *Sheeta veerya* and *Laghu Snigdha Bhojana*, *Yavagu* increases appetite and helps the good nutrition state. **Rasayana:** Due to similar qualities of *Ojas* increases the Immunity and also acts as *Balya* and *bruhmana*.

**Anxiety: Shirodhara:** *Shirodhara* has shown its anti-anxiety, antihypertensive& sleep-inducing effect in few studies. It reduces the sympathetic tone thereby increasing alpha & theta wave activity in brain. **Psychotherapy: Ashwasana** (Reassurance)

Reassurance relieves fears, boosts self-confidence and promotes hope in a patient under the *Ashwasana Chikitsa*, **Pranayama: Bramari Pranayama** - Relives Stress, Cerebral Tension Alleviating Anger, Anxiety, Insomnia, **Yoga: Shavasana** stimulates Parasympathetic nervous system, Autonomic nervous System which helps in psychosomatic relaxation.

**Insomnia: Abhyanga:** It acts as *Shrama* and *Vatahara*, also acts as *Pushti* to body and mind, lipid aids good absorption in skin and stimulates receptors leads to vasodilation and increases serotonin level in brain and induces relaxation and sleep. **Yoga: Shavasana** stimulates Parasympathetic nervous system, Autonomic nervous System which helps in psychosomatic relaxation. **Bruhmana Chikitsa: Ksheerabalataila** having *snigdha guna* helps to reduce *vata* and induces sleep. **Brahmi Rasayan:** It has neuronal dendritic growth stimulating by modulating dopamine, immuno modulatory activity revealed by increase in level of superoxide dismutase (SOD), glutathione peroxidase & glutathione.

The treatment is considered as best, which restore the function of *Dosha, Dhātu, Mala*, without relapse of disease, depending on condition of *Dhātu Avasta*, and *Dosha Avasta, Shamana* in the form of *Brihmana Chikitsa* such as *Grita, Avaleha*, and can be adopted to restore the function.

## CONCLUSION

Much about the aftermath of the illness remains unclear or unknown, and there is even uncertainty about the term "recover" in the corona virus context. According to Ayurveda concepts, there will be *Dhātu-Kshaya & Agnimandya Avastha* Post COVID infection. Hence, *Dhatuposhana* and *Rasayana Sevana* drugs for at-least 45 days and to combat the residual effects of the virus on the body and to combat toxicity produced from antiviral drug therapy. *Deepana Pachana* drugs may be used in case of abdominal discomfort. Depending upon individuals *Agni* status and availability of medicine following drugs may be prescribed. Ayurveda has enormous potential and treatment options which are available for enhancing the immunity and systemic illness and positively

influence mental health, thus helpful in combating Post Covid symptoms. Hence Ayurveda should be used as main treatment modality for Health restoration and Prevention of recurrence, rather than an adjuvant therapy in treating post COVID symptoms.

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